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SEROTYPE: EXPLORING THE EMBODIED EXPERIENCE OF HAVING DENGUE FEVER

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ABSTRACT

This article studies how different forms of knowledge about dengue fever are created and negotiated. I explore how anthropology, in tandem with ideas and practices drawn from science and art, may transform public understandings of dengue in Medellín, Colombia. After showing why health campaigns cannot be reduced to a matter of eliminating mosquito-breeding sites, I argue that these campaigns should be re-designed—privileging relations and stimulating debate—by focusing on experience and moving towards managing the disease and living with the mosquito. I advocate for interdisciplinary collaboration as a relational strategy that can generate an intersubjective exchange of experiences.

Key words: dengue, Serotype, embodiment, experience, relational art, health campaigns

SEROTIPO: EXPLORANDO LA EXPERIENCIA ENCARNADA DE TENER DENGUE

RESUMEN

Este es un estudio sobre la creación y la negociación de diferentes formas de conocimiento alrededor del dengue. El artículo explora cómo la antropología, en colaboración con las ideas y las prácticas derivadas de la ciencia y del arte, puede transformar el entendimiento público de dicha enfermedad en Medellín, Colombia. Luego de explicar por qué las campañas de salud no pueden reducirse a la idea de eliminar los sitos de cría del mosquito, argumenta que dichas campañas deberían rediseñarse, enfocándolas a la experiencia como forma esencial para comprender la enfermedad y la relación con el mosquito. Aboga por una colaboración interdisciplinaria como una estrategia de arte relacional, ya que esta puede generar un intercambio intersubjetivo de experiencias.

Palabras claves: arte relacional, campañas de salud, dengue, experiencia corporal, serotipo.

SOROTIPO: EXPLORANDO A EXPERIÊNCIA ENCARNADA DE ESTAR COM DENGUE

RESUMO

Este é um estudo sobre a criação e a negociação de diferentes formas de conhecimento sobre a dengue. Neste artigo, explora-se como a antropologia, em colaboração com as ideias e as práticas derivadas da ciência e da arte, pode transformar o entendimento público dessa doença em Medellín (Colômbia). Após explicar por que as campanhas de saúde não podem estar reduzidas à ideia de eliminar os locais onde o mosquito se reproduz, argumenta-se que essas campanhas deveriam ser redesenhadas com um enfoque na experiência como forma essencial para compreender a doença e a relação com o mosquito. Defende-se uma colaboração interdisciplinar como uma estratégia de arte relacional, já que esta pode gerar um intercâmbio intersubjetivo de experiências.

Palavras-chave: arte relacional, campanhas de saúde, dengue, experiência corporal, sorotipo.

DENGUE FEVER

Dengue is a vector-borne disease, known as "break-bone fever" (Rush 1789, 108), transmitted to humans after being bit by a mosquito of the *Aedes* genus that is infected with one of the four forms —serotypes— of dengue virus[1]. Although it is still ranked as a neglected tropical disease (WHO 2013), dengue is also considered as the most important mosquito-borne viral disease because of its presence in countries where it was previously eradicated (WHO 2012a). The disease can be classified as dengue without warning signs, dengue with warning signs, or severe dengue —which can be lethal. The classification depends on the type of symptoms experienced, which range from pain behind the eyes, aches, fever, joint pain, and rash; to lethargy or restlessness; to abdominal pain, persistent vomiting, and mucosal bleeding (WHO 2012b, 24). Given that there is neither any antiviral treatment for dengue, nor any available vaccine with consistent efficacy against the four dengue serotypes, and that dengue now affects half the world's population (Bhatt et al. 2013), the morbidity rate is extremely high, and therefore there is a risk for a global pandemic (WHO 2012a)[2].

1 *Serotype* refers to one of the four variations that dengue virus (DENV) may have-four distinct antigenic types (Cologna et al. 2005). Dengue virus serotypes are named as DENV-1, DENV-2, DENV-3 and DENV-4, each of which generates different interactions with the human antibodies.

2 Dengvaxia® (CYD-TDV) is the first dengue vaccine. The WHO does not currently prequalify it, and it is only recommended in geographic settings with high endemicity (WHO 2016). There are also potential dengue vaccines in phase 3 field trials, some of which have been tested in Colombia (Guy et al. 2011, WHO 2012a, Thomas 2015, Villar et al. 2015). Likewise, a new broadly neutralising antibody was recently isolated from people infected with dengue (Dejnirattisai et al. 2015). However, although these knowledge "facts" might be important tools to reduce dengue incidence, Boccia et al. (2014) question whether people would change their vector-control practices in the presence of a dengue vaccine. Following mathematical models and empirical field tests —and considering those potential vaccines would not offer 100% protection— these researchers suggest that the most likely effect of such scenario is a "false feeling of perfect protection," which will cause a significant reduction in vector-control measures. In their words, "the population will relax vector-control measures, and this relaxation may result in a significant increase in dengue transmission" (Boccia et al. 2014, 630).

Figure 1. Serotype. Photo by Alejandro Valencia-Tobón.

Mosquito-borne diseases have normally been treated through vector control and the elimination of breeding sites, particularly after the Second World War, as a response to the outbreaks in Southeast Asia and the Americas. Until 1960, the use of the pesticide DDT allowed the virtual eradication of *Aedes aegypti* (*Ae. aegypti*) in many places of the world, including most countries in Latin America. DDT was banned in most of the world by 1970 (Bouwman et al. 2011, Dunn 2012, 578), and by 1980 the focus on vector-control was replaced by a discourse of sanitation, in which health authorities tried to "educate" populations and "teach" proper hygienic habits to avoid mosquito-human contact (Suarez et al. 2005). At present, these practices are changing again. The World Health Organisation (WHO) suggests that dengue incidence could be reduced at least 50% by 2020 through applying health campaigns and social interventions that involve asking people to participate in the control of dengue outbreaks (WHO 2012b, 2016). In order to respond to this, between 2013 and 2014 I studied dengue fever in Medellín, Colombia, from an anthropological point of view, trying to show the different ways in which public health campaigns are connected and disconnected, both from the scientific practices and from the public and everyday experience of the disease. I then pushed further my anthropological and individual experience into an experimental exercise by bringing together academic

and theoretical approaches and fieldwork experiences as a way of creating new relationships in the form of a multispecies ethnography. This experimental exercise resulted in S*erotype*, a character who embodies the experience of having dengue fever (see Figure 1).

THE MULTIPLE KNOWLEDGES OF DENGUE FEVER

When we examine the literature of science and technology studies, the concept of "knowledge" may be defined as a contemporary collective interaction between institutions, people, their ideas and beliefs. It is a "public good" (non-appropriable resource), the value of which cannot be depleted (Atkinson et al. 2009). The study of knowledge-making practices connects the macro and micro worlds as a constitutive co-production between micro considerations enacted in scientific practices and the macro structures of political and social thought (Jasanoff 2004, da Costa and Philip 2008). "Knowledge" is the product of a network of interactions that blur the boundaries between "natural" and "social," as it is embedded into society (Knorr Cetina 1981, Lindenbaum and Lock 1993, Jasanoff et al. 1995, Jasanoff 2004).

By studying the nature of the relation between the scientific and public practices and everyday experiences of dengue fever, I have encountered that there is a question about different kinds of knowledge, which means dengue is not a *singular thing*, or a product of one particular interpretation that is enacted in a single way. As Annemarie Mol (2002) contends in her work about atherosclerosis, a disease is the product of practices that sustain it because it responds to multiple realities or multiple worlds. She explains, for example, that "a plaque cut out of an atherosclerotic artery is not the same entity as the problem a patient with atherosclerosis talks about in the consulting room, even though they are both called by the same name" (vii). In the case of dengue, different knowledge-making practices are linked to different models of the disease, from entomological and virological understandings, to epidemiological analyses, to healthcare points of view. For instance, entomologists concentrate on vector control, virologists embrace etiological studies and analyse the virus structure and its variations, epidemiologists are concerned with statistical measures for public health control, and health staff focus on diagnosing the disease; therefore, "knowledge" is very different in each of these spaces. But, at the same time, we also have public understandings

of dengue and mosquitoes, and the unique experiences of the people who have had the disease, which may not necessarily be related to the approaches taken by academic and health institutions.

Despite all of these different forms of knowledge, health campaigns remain poorly designed. They generally emphasise sanitation and hygiene through the elimination of mosquito-breeding sites, art does not play a role in their design and more fundamentally and morally speaking, the experiences of the people that have had the disease are rarely part of these campaigns. If they are, they are represented simply as signs and symptoms[3]. I argue that health campaigns should focus on experience, design open-ended and process-based projects, and stimulate debate among the public; collaboration as a goal should be seen as a good in itself (Rabinow and Marcus 2008, Ssorin-Chaikov 2013). I develop this position by suggesting a relationship between managing the disease, the experience of those who have had the disease, and the notion of multispecies ethnography as a way for understanding human-mosquito relations.

RELATIONALITY AND MULTISPECIES ETHNOGRAPHY

"Multispecies ethnography" is defined as the study of contact zones between humans and other species, where the division of culture and nature is blurred (Kirksey and Helmreich 2010, 546). As Donna Haraway (2008) argues, we live *with* animals in an indivisible history of mutual recognition, which can also be seen as a kind of aesthetics of human–animal life. We can think about insects in the same terms: Insects have been on the earth for millions of years (mosquitoes for more than 100 million years), longer than humans can imagine, and their effects on human life are unquestionable (Mitchell 2002, Morris 2004, Kirksey and Helmreich 2010, Raffles 2010, Nading 2014, Valencia-Tobón 2015).

A new relationality is demanded by the "evidence," which is accepting that people live with mosquitoes and a world without mosquitoes is highly unlikely (Fang 2010). Humans need to accept, as Richard Barnett (2014, 216) argues in his analysis of illustrations of the diseased human

3 See, for example, the Student Committee Against Dengue: https://www.facebook.com/ComiteEstudiantilAntidengue and http://ceantidengue.blogspot.com.co/

body from the 18th to the 20th century, that parasites and viruses —like death— "are inescapable." Like any other species, human beings need to be controlled, and mosquitoes do this job by sucking blood and spreading pathogenic microbes (Fang 2010). This is something that not only scientists have noticed. Artists such as Preston Singletary (Schantz Galleries 2010) and Dan James (2005) and writers like Eduardo Galeano (1985, 2004) and Richard Jones (2012) have commented on the idea that mosquitoes are almost the devil himself, eating people alive. Contrary to current health campaigns that neglect the experience of the disease, relational art is a good model for constituting a public that can be engaged in projects around dengue. Relational art is defined as a set of artistic practices that are theoretically and practically based on human relations (Bourriaud 2002, 113). Everyday experiences will have a stronger value by provoking intersubjective exchange within micro-communities in an open-ended process enacted in models of relational art (Bourriaud 1998, 2002).

My fieldwork was divided into three phases. I first focused my attention on the everyday understanding of dengue. How do people talk about dengue? How do they prevent it? How do people perceive health campaigns? How do they talk about the experience of being unwell? This phase was based on the illness narratives of three participants who suffered dengue fever and the documentation of the public understandings of the disease and its health campaigns. These ideas and questions about knowledge are critically related. Attending to the experience of everyday life implies responding to sensorial and corporeal experiences (Highmore 2002), to show how and why the notions of space and time are socially constructed, revealing the multiplicity of rhythms and embodied knowledge people have (Lefebvre 2004). By working with two entomologists and one virologist and interviewing members of different public health institutes, in the second part of my project, I documented scientific practices, public health discourse, and the design of educational campaigns. What kind of knowledge is relevant in the design of health campaigns? Who is responsible for their design? What templates do they follow? What kinds of instructions do they receive? In comparison to formalised and specialised forms of knowledge, Gardiner (2000) writes that "everyday knowledge is ruled by emotion and affect; it is highly repetitive, prone to analogical forms

of reasoning and over-generalisation; and it is very pragmatic, based upon immediate perceptions and experiences and subordinated to the requirements of mundane tasks" (135). These two phases of research, and the different modes of knowing embedded in them, were then linked through an analysis of narratives. As Escobar (1995) holds, "although nature, bodies, and organisms certainly have an *organic* basis, they are increasingly produced in conjunction with *machines*, and this production is always mediated by scientific and cultural *narratives*" (207).

Figure 2. Serotype: fluctuations between good and evil, death and health. Public intervention in a cemetery. Photo by Alejandro Valencia-Tobón.

By reflecting back on public and scientific understandings, in the last phase I wanted to engage different audiences with the ideas that were at stake in the construction of knowledge about dengue fever. David Chaney (2002) argues that the exploration of everyday life in the modern era means thinking about power, control, and the politics of knowledge: "Who decides (and how they decide) what is significant in social life is the most basic level of political control" (Chaney 2002, 35). Merely collecting details of what people do is not sufficient to determine the relevance of the everyday. So based on the information collected during my ethnographic work, focusing my attention on the everyday understandings of dengue fever, and paying particular attention to the

different ways in which these three people who have had dengue described the experience of being unwell, I decided to re-work (collaboratively) all the information to create elements that reflect the ideas of how dengue fever is understood in various different contexts. To reach this objective, I created a participatory experiment in which the participants of my ethnography, along with five artists, worked together to create *Serotype* —a fictional character who embodies the experience of having dengue fever (see http://alejandrovalenciat.com/alejandrovt/serotipo.html and https://goo.gl/oQ3sBD).

The rest of this paper is divided in four sections. In *part one* I introduce the problem of health campaigns, showing why they are subject of immediate political debate. *Part two* deals with the idea of eliminating mosquito-breeding sites, and the hypothetical idea of having a world without mosquitoes. In *part three* I introduce the experience of being ill and the understandings of dengue as *pain*. *Part four* presents the case of *Serotype*, which was a way of re-working the notion of "health campaigns" as an ethnographic experiment in relational art.

Using art methods to create interdisciplinary approaches was my response to a problem and my anthropological understanding of that problem in Colombia. This process implies thinking about conceptual art as a research method in "ethnographic conceptualism" —a new kind of ethnography which is conducted as conceptual art, aiming to create events, performances or art exhibitions, and by doing so, constructing the reality that it studies (Ssorin-Chaikov 2013). By taking an ethnographic approach, focused on relationality, to vector-borne diseases and the notion of participation, I want to show how public health campaigns may be conceptual art ethnographies by design (Marcus 2000, Rabinow and Marcus 2008, Ssorin-Chaikov 2013), making their application more effective.

PART ONE

Overfamiliar and ineffective health campaigns: the example of chikungunya

The fundamental issue here is the question about different kinds of knowledge. One way to address this is by looking at the way anti-dengue campaigns have been designed, specifically how they have been based on

standardised templates for "teaching" the community how to eliminate mosquito-breeding sites. The consequence of designing campaigns in this way is that the government does not address the disease in a way that would motivate the community to take action. Instead, these campaigns seem to be extremely politicised, and as such they may be revealing of problems of the Colombian state more generally. To illustrate how such campaigns are a subject of immediate political debate, we can track the case of chikungunya, a mosquito-borne viral disease very similar to dengue fever, which emerged in Colombia in the middle of 2014. Between its emergence and the third week of 2015, the INS reported 142,196 clinically confirmed cases of chikungunya and 1,236 cases confirmed by laboratory tests (INS 2015a). Chikungunya symptoms include high fever, joint and muscle pain, nausea, rash, joint swelling, headache and fatigue, which means that it shares many clinical signs with dengue fever, and therefore, both diseases are often misdiagnosed (WHO 2015). A very distinctive feature is, however, the post-illness joint pain that characterises chikungunya, something that only began to be identified thanks to the carefully analysis of illness narratives and the different understandings of "pain" that they reveal (see Carey 1971, Halstead 2015). Considering these common features in the symptomatology, and knowing that chikungunya is more often transmitted by *Ae. aegypti* and *Ae. albopictus* mosquitoes (the two main vectors of dengue fever), the strategies for controlling the disease are the same as those in use for controlling dengue fever (INS 2014, WHO 2015, Halstead 2015). I use the case of chikungunya to raise questions about how the meaning of health campaigns is partial, contested, and contingent. This example also permits me to show my thinking about the operations of the state and the possible ways for re-thinking the different kinds of knowledge about dengue fever that are stake.

On 3 January 2015, Álvaro Uribe, former president of Colombia (2002–2010), in a thinly veiled critique of President Juan Manuel Santos, stated on Twitter: "There *was* a president who would be supporting the citizens affected by the Chikungunya," meaning that Santos was not paying sufficient attention to the disease outbreak. The day after, he wrote: "Santos was concerned about the votes of the people on the Caribbean coast, but [cared] little about the suffering of the patients and doctors of the chikungunya." Uribe, who is currently a senator of the Republic

of Colombia, represents a conservative, right-wing party —Centro Democrático— that opposes President Santos. Uribe has massive support in Colombia, and Twitter is his main tool to disseminate propaganda against Santos and to critique government policies. These statements were widely covered by various media, who publicised Uribe's criticism of Santos for not controlling the chikungunya virus. On 7 January, President Santos replied to these comments saying, "nobody dies of chikungunya. It is a new phenomenon that came to America less than two years ago and one that inevitably spreads. That means it is impossible to avoid the virus" (Revista Semana 2015a). According to Santos, there is no cause for alarm as the government has done everything it can to deal with chikungunya by applying the current available strategies for controlling it: informing the community, promoting educational health campaigns, preparing health staff, and carrying out entomological surveillance activities (Caracol Radio 2015b). Santos also ordered the army to support these activities in areas affected by chikungunya outbreaks (W Radio 2015a). Gina Watson, the Pan American Health Organisation's (PAHO) representative in Colombia, supported this declaration, arguing that the Colombian government had correctly responded by following the PAHO and WHO guidelines and highlighting that the most important tool to stop outbreaks is the education of the community (Ministerio de Salud y Protección Social [MSPS] 2015). According to the WHO, chikungunya is rarely fatal (WHO 2015), and indeed, on 8 January 2015, the INS (2015b) confirmed that in Colombia no one had died because of chikungunya. However, on 27 April 2015 the INS reported 43 deaths presumed to be caused by chikungunya, of which 25 had a confirmed association with the virus (INS 2015c). Even though this is an insignificant number in a country of about 46 million inhabitants, and knowing that international institutions acknowledge the disease is rarely fatal, the debate continued when multiple media outlets reported that those "who previously advised President Santos about chikungunya issues were wrong" (Revista Semana 2015b).

Because of this confrontation and the way the disease has been managed in the mass media, chikungunya has become a political and social issue. President Santos has denounced the political opportunism of people who increased the price of mosquito repellents and pain relievers such as acetaminophen/paracetamol, an analgesic normally used to treat

dengue and chikungunya symptoms (Revista Semana 2015a, W Radio 2015b, Caracol Radio 2015a) or who distributed smuggled medicine (Noticias uno 2015). In addition, Health Minister Alejandro Gaviria stated there were people using this public health problem as a strategy for attracting voters during election campaigns (W Radio 2015b, Caracol Radio 2015a) or to attract business, such as the pharmacists who sold fake vaccines to prevent chikungunya (Teleantioquia Noticias 2015a).

The government has addressed the problem by focusing on improving pedagogical strategies for "making people understand" that although the presence of chikungunya is an inevitable phenomenon, there are actions to mitigate its impact (W Radio 2015a). On 3 February 2015 Fernando Ruiz, the deputy minister of health, came to Medellín to promote campaigns against chikungunya and dengue. He emphasised again that the only available strategy to fight chikungunya are the actions people take in their homes and students take in schools to prevent and eliminate breeding sites (Teleantioquia Noticias 2015b). Thus, community participation is a key element of social communication programmes (Gobernación de Antioquia 2015). Technically, the government has used the template of the anti-dengue campaigns to talk about preventing both diseases in the same way. These campaigns invite the community to eliminate mosquito-breeding sites by washing vases, ground tanks and roof gutters; by removing tyres, cans, bottles and even children's toys; and even by filling in holes in nearby tree trunks (see examples in Gobernación de Antioquia 2014, Alcaldía de Itagüí 2015, Secretaría de Salud de Medellín 2015).

There is a key tension that accompanies the dissemination of all this information. If the government takes action in the form of communication campaigns, everyone is going to get "terrified" and the situation is going to be "out of proportion" to the danger of the issue. But if they do not do anything, they may be seen as "incompetent" —as Álvaro Uribe suggests— and a lack of action could even be considered immoral. What can the government do? What does it do? My argument here is that the government is using a model for the campaigns against dengue fever that has been applied without reducing the number of people who get the infection. These health campaigns do not "terrify" the public, nor do they actually deal with the situation; they merely reproduce the same template that has not worked in the past. So, the political gesture

becomes a problem because the chikungunya campaign looks like the other campaigns of the past, and it does not accomplish what it needs to accomplish.

There are two factors to consider regarding how the state designs health campaigns. First, public health campaigns only talk about how mosquitoes breed, and by doing so, the views and knowledge of other people who work on these issues, like virologists for example, are not included. Second, the experiences of the people who have had mosquito-borne diseases have never been part of the way these campaigns are designed. Considering that both dengue and chikungunya are spreading more quickly, and that the number of cases is higher, it is problematic that people do not respond to how the diseases spread. I argue that they do not respond because the public campaigns do not cause people to feel motivated to do something. Public health campaigns merely repeat the information by using templates standardised more than 90 years ago to fight mosquito-borne diseases. More people are getting ill than should be the case, not only because of biological and ecological variables, but also because of the quality of information provided by health campaigns and the way these campaigns are constructed. What is at stake is the exclusion of and disconnection from a body of work, knowledge, and practices that have not been taken into account.

PART TWO

"Without mosquito-breeding sites, there are no mosquitoes; without mosquitoes, there is no dengue"

It seems that for the WHO —and most health promoters— there is a search for a universal statement that can summarise the mechanism that underlines dengue fever transmission. This is exemplified in the sentence: *Without mosquito-breeding sites, there are no mosquitoes; without mosquitoes, there is no dengue*. This claim implicates a correlation between three variables: mosquito-breeding sites, mosquitoes, and dengue. However, as Russo and Williamson (2007, 2011) state, correlation does not necessarily imply causation. In the case of dengue, for example, Heintze et al. (2007a, 324)[4] have argued that "although community-based control

4 See also Pérez et al. 2007 and Heintze et al. 2007b.

strategies in addition to or together with biological and chemical vector control tools are able to reduce classical *Aedes* larval indices, it is unknown whether this reduces dengue transmission." In other words, the fact of controlling the vector does not necessarily mean decreasing dengue incidence. Members of the Secretariat of Health of Medellín also argue: "Neighbours should understand that without mosquito-breeding sites, there are no mosquitoes, and without mosquitoes, there is no dengue" (Fernando Montes, cited in Cañas 2012, 7). Behind this discourse we may identify this axiom: *If you control mosquitoes breeding sites you will not have dengue*. We might go further and suggest that *if mosquitoes are well adapted to human dwellings, and many of their breeding sites are artificial receptacles, you just need to destroy these receptacles and the disease will disappear.*

What we see today are the same ideas that Harrison Dyar described in 1928 in the book *The Mosquitoes of the Americas*, where he writes that "[t]his species is the dreaded carrier of yellow fever and dengue fever, its close association with man rendering this possible. As breeding-places are limited to artificial receptacles, its destruction, when necessary, is a matter of the simplest [actions]" (241). Eighty seven years later, in a flier distributed during my fieldwork in Itagüí —one of the cities of the metropolitan area of the Aburrá Valley— health authorities replicated Dyar's thoughts in stating that: "There are simple actions to avoid that encourage dengue mosquito breeding," and they are as simple as "covering, cleaning or eliminating water containers" (Alcaldía de Itagüí 2015). Although you can find posters that talk about dengue symptoms, health staff always promote the elimination of any container that can accumulate clean and standing water. This is because, according to them, "it is easier to eliminate 200 larvae in a breeding site than a mosquito flying" (Angel 2014, 7). The kind of mosquito-breeding places that are shown in this campaign in Itagüí and often in other health campaigns from the Secretariat of Health in Medellín are vases, used tyres, plants or trees with holes, cans, plastic bottles, roof gutters, and water tanks. In other words, there has been a repetition of two things: The uses of the mosquito as a symbol for the disease (nobody has talked about the virus or the ill person), and the idea of destroying its breeding places as the solution for eliminating the disease.

On its own, this idea leaves a gap for us to think about the role of non-artificial water receptacles. Imagine the case in which you do not have the artificial water receptacles, but you still have mosquitoes. This is in fact very common in nature because some mosquito species, including *Aedes* and *Anopheles* mosquitoes, can breed in natural environments —regardless of its close association with human dwellings. So when you have water-filled tree hollows, or any plant that accumulates water and allows mosquitoes to breed (the term "phytotelmata" is used to describe these plants) you can say you have *natural water receptacles*. So again, is it actually possible to eliminate every artificial and natural receptacle? If we do so, can we imagine a world without mosquitoes and therefore without dengue? What would happen if we eradicate mosquitoes?

As there is a widely shared sentiment of killing all mosquitoes, there is also a romantic notion according to which every creature has a vital place in nature —a niche (Fang 2010). But in a world with the 3,500 named species of mosquitoes, of which more than a hundred bite or bother humans (Fang 2010, 432), what is their "vital place"? What's their "function"? If eradicating an organism would have serious consequences for ecosystems, what would happen if we eradicate mosquitoes? Would we miss them? Janet Fang (2010) wrote an interesting article in the journal *Nature*, where she seeks answers to these questions. Fang describes the "vital place" of mosquitoes as a source of food for other animals: spiders, salamanders, lizards, frogs and migratory birds feed on mosquitoes (also bats in a very low rate). Likewise, their larvae are an important part of the biomass in water pools, being fish food. Mosquitoes, especially from the Ceratopogonidae family (*Forcipomyia* genus) also provide "ecosystem services" by being pollinators of tropical crops such as cacao (but they are not the only propitiator). So, although in a world without mosquitoes, some plants would lose a group of pollinators, and some insect-eaters would lose part of their diet, most likely no ecosystem disruption would take place, and other species could take over that niche (Fang 2010). The same situation would happen after eliminating a disease-vector mosquito. This scenario would only generate temporary relief, because, from an ecological point of view, another insect would fill its niche. To exemplify this, Fang references the work of Phil Lounibos, who has shown that eliminating *Ae. aegypti* would be futile, because *Ae. albopictus* could easily overtake its niche (Lounibos, cited in Fang

2010, 434). The point of this article is not whether mosquitoes should be wiped off the Earth or not, but rather to acknowledge that because of the limitations of mosquito-killing methods, a world without mosquitoes is highly unlikely (Fang 2010, 434).

PART THREE

"Warning signs" and the experience of being ill

In this section, I will talk about the experience of having dengue fever, using illness narratives to describe the way people experienced it. According to Merleau-Ponty (2002) science does not completely account for the world as we live it and particularly as we experience it. Before the symbols of science, *my* experience of the world is what gives me knowledge of it. My body is the source of experience, and this is what defines what I am. In this respect, Merleau-Ponty comments: "Science waits upon explanation, which means looking beneath phenomena for the circumstances upon which they depend, in accordance with the tried methods of induction" (2002, 129–130). The specific analysis of the bodily experience of my participants allows us to have a particular insight into illness and think about it as an intersubjective world, not a universal/objective one. To do so, I will describe the experience of Sara Tobón, Luis Fernando Vélez, and Juan David Serna, three people with whom I worked during my ethnographic fieldwork in Medellín.

Sara: getting ill

"I remember very clearly the pain behind my eyes, and the fever. Those were the symptoms I hated the most about my experience. That was the first time I felt that sensation in my eyes. It was very weird." These were the first words Sara used to describe her experience. At the time of my fieldwork, Sara was a 24-year-old student who was finishing a bachelor's degree at the University of Antioquia. Besides being very open to talking about her illness process, Sara was also participating in a research project where scientists were tracking the evolution of patients who had had dengue in Medellín. All of this made her very critical of health campaigns and, therefore, she was a very important subject for informing the creation of *Serotype*.

The first disease symptoms started when Sara was at her grandmother's house getting ready to go to a concert. Just before leaving, her body began to feel very "heavy" and there was a sort of pain in her eyes when she moved them. Although Sara said the symptoms were not very strong, she felt weird and decided not to go out. Although the next day was not too bad, she described that night as a "terrible thing": "I had a high fever and during the night I sweated a lot. In the morning, I could almost wring out the pillow. After two days, I felt really bad."

Although the fever did not go away, Sara did not think about seeking medical treatment during the first days of the infection —she self-medicated with acetaminophen/paracetamol to deal with her symptoms. Sara argued that now it would not be an emergency for the doctors at the hospital and, additionally, she was not affiliated with the healthcare system, and therefore she could not go to see a doctor. However, when blood started coming out of her nose, she decided to pay for a private medical service. That is when she was diagnosed with dengue. After some examinations, she was sent back home with directions for using pain relievers (acetaminophen).

Three days after that, Sara still had a fever, and then began to break out in a rash and experienced a kind of mucosal bleeding in the groin area. She visited the doctor again, who gave her other medications (anti-allergy drugs and local anaesthetics such as Lidocaine). However, the situation got worse due to a bacterial infection on the skin near to the rash area. The wounds burned and itched. Because it affected the groin area, she could not wear blue jeans and urinating was very painful. Although she recovered after two weeks, Sara commented that since she got dengue, whenever she had fever, she felt worried about having dengue because she did not want to live through that sensation again. She remembered dengue as one of the worst experiences she had ever had. "I don't recall anything ever bringing me to my knees like that," she told me.

Luis Fernando: getting ill

Luis Fernando was diagnosed with dengue fever during the first week of November 2013. He is a 49-year-old electronics technician that works as a telecommunication instructor. During the last week of October, he went to Cartagena to teach some telecommunication courses. Even though it is more probable that he had got the virus while he was in Cartagena

and not in Medellín (because of the incubation period of the virus), his case is very relevant for highlighting how *mobility* is so important in the debate about the disease —the movement of people infected with dengue is highly associated with an increase in the number of cases (see Vasilakis and Weaver 2008, Adams and Kapan 2009, Rey et al. 2010, 802, Alvis-Guzman et al. 2015). Luis Fernando came to Medellín on Saturday, 2 November. The night before, he was about to reply to some emails, but he was not able to do so. Luis Fernando described this as not being able to articulate his ideas, and somehow being "blocked." He remembered being too tired and feeling his body was "heavy," but he did not associate this with any kind of disease, but instead with the long working day.

Although he felt a bit awkward during the weekend and did not sleep well, it was not until Monday, 4 November, that he began to feel a bit of fever and pain in his joints. He did not think about going to the hospital, though; he thought it could be the flu, or maybe he was feeling that way because of something he had eaten, so he just took two acetaminophen every six hours —he never thought it may be dengue. With his job as a telecommunication instructor, on Tuesday Luis Fernando had to teach classes. Although he taught the classes, he felt bad during the day, he did not have lunch and mainly drank water. At night he had high fever. "This was the first time in my life I was shaking, I mean shivering, because of the fever," Luis Fernando told me. Having fever between 39.5° C to 40° C, he not only went to bed with three blankets, but he was also wearing t-shirt, sweatshirt, socks and sweatpants, telling me that was the first night he had worn that much clothing. He took more acetaminophen during the night.

On Wednesday he went back to work in the morning experiencing pretty much the same symptoms as the day before. He went back home early, as this day was the 15th birthday of his daughter. Luis Fernando stayed for a bit with his family and then went to bed, with fever and the same shaking sensation. On Thursday, 7 November, he had classes again. "I did not feel comfortable, and there were moments in which I felt incoherent in the explanations I was giving," he said. When it happened, he stopped for some seconds to achieve some kind of coherence in the discourse. Now he had a headache and felt pain behind his eyes and in his joints, limbs, muscles, abdomen, and bones. Luis

Fernando finished his classes at midday, called his wife, and decided to go to the Medical and Dental Service Unit. In this particular case, it is fundamental to highlight that Luis had a very good health service, so waiting to go to the doctor was not about "knowing" what would be available in the hospital, the quality of the services, or the economic situation (as in Sara's case).

After an examination, the doctor said it was a viral infection, but he required a blood test for confirmation. In the meantime, Luis Fernando was prescribed with pain relievers and cough syrup to treat what the doctor thought could be some symptoms of pharyngitis. On Friday, Luis Fernando got the blood test that showed altered values in hematocrits and platelets, and he was diagnosed with dengue. Although normal platelets values are 150,000 to 400,000/mm^3, he had 73,000/mm^3. He reported a burning sensation on the skin and that his skin was very sensitive to touch. Luis went back home and after that he began to use an insecticide for killing flying insects. He was killing everything; it did not matter whether the insect had the characteristic pattern of white lines. He said it was a way to protect others from getting the disease.

On Saturday he had another blood test, and it showed platelets on 53,000/mm^3 and, because of this, Luis Fernando was transferred to a higher-level hospital. He stayed there for the day, receiving an intravenous administration of Hartmann's solution. Although at first doctors suggested remaining in the hospital overnight, they allowed him to go home (under his own responsibility) if he agreed to come back the next day. On Sunday he went back to the hospital. Doctors were very concerned about the platelets values, they were hoping to get this value higher, so Luis Fernando had another test that showed platelets on 62,000/mm^3. Abdominal pain, headache, lethargy, and the break-bone sensation had not disappeared, so he still received a prescription for pain relief. As things seemed to get better, he was asked to come back in two days time to the medical centre he had first visited. In the meantime, he just needed to pay attention to not having blood in his stools, or gingival bleeding.

"I got a big surprise on Tuesday, when I came back on Tuesday, because I was asked to tell the story from the beginning, it is like that in our health system, everything needed to start from zero. It was like resetting everything because of the beginning of the week," Luis

Fernando commented. After telling the story again to the new doctors, on that day, another blood test showed platelets on 100,000/mm^3. He had headaches and break-bone sensation for a couple more days, but he completely recovered after a week and a half resting in his home.

Juan David: getting ill

Juan David is a 30-year-old dentist who lives in Bello and works in Medellín. I started working with him some months after he was diagnosed with dengue fever. He remembered first feeling flu-like symptoms. He then had headache, body pain, and lethargy. Some people told him he had "the break-bone fever," but he did not actually associate it with dengue.

As a dentist, Juan David is used to working in hospitals; however, at the beginning, he did not think about asking his friends to get a blood test. During the fourth day, though, he went to the hospital feeling much worse (he had fever, pain behind the eyes, and joint pain), so he had a blood test that showed a dramatic decrease in the platelets level. He then had another test that confirmed he had dengue. At the end of the day he vomited several times. He had diarrhoea, fever, pain behind the eyes, and joint pain. He told me that once he got the positive diagnosis, he actually felt worse.

After talking with his colleagues, he decided to receive care in hospital. He was eating very little, feeling a lot of pain and having diarrhoea. For this he was prescribed pain relievers and intravenous administrations of serum to keep him stable and hydrated. The day after diagnosis, he began to have a rash, which was treated with antihistamines to decrease its growth and prevent further inflammation. When I asked him about the memories of those days, he told me that the fact of not wanting to eat was what affected him the most: "I was not able to eat, and when I did so, I had more diarrhoea." Likewise, he remembered being discombobulated for some moments. Sometimes Juan David felt dizzy and, As Luis Fernando did, he also felt unable to articulate his ideas. The sickness process of Juan David implied two forms of isolation: the first one was related with the hospitalization as a way of getting the proper hydration that his body needed. The second one implied a desire to not to tell his family about his hospitalization, as a way of not worrying them. He made this decision after looking at the platelets levels —he told me he knew this was really bad news. Throughout the

days in which he stayed in the hospital and during the recovery period at home, he kept an insecticide next to him all the time.

Pain and the body

The understanding of pain allows us to have an insight into both the biological and the social dimension of diseases. One of the earliest definitions of pain frequently used in the medical/biological domain was given by Margo McCaffery in 1968, who described it as "whatever the experiencing person says it is, existing whenever s/he says it does" (McCaffery, cited in Berry et al. 2011, 4). Pain is a concept people learn in childhood through injury-related experiences (Merskey and Bugduk 1994, 210), which means that it is always a subjective experience that cannot be measured objectively (Osterweis et al. 1987, 123, Merskey and Bugduk 1994, McCaffery 1990).

According to Merleau-Ponty (2002) "my body is that meaningful core which behaves like a general function, and which nevertheless exists, and is susceptible to disease. In it we learn to know that union of essence and existence" (170). The body is the element through which we perceive the world. In short, the way we give meanings and understandings is by being-in-the-world. Although my body exists, and therefore it is susceptible to disease, we do not think about getting ill. Because of this, the unexpected illness implies a self-reflexive process of asking questions and looking for answers to our afflictions. This unpredictability and uncertainty is what, according to Kleinman (1988), gives rise to injustice-value questions during the course of the disease: *Why me? what can we do?* Like Kleinman, Taussig (1992) also comments that during the course of a disease "the body asks me *why me? why now?*" (85). As Kleinman (1988) states in relation to chronic diseases, during the first period of the disease there is a sense of lack of control that has to be confronted because all scientific explanations are not enough. Diseases point out a failure in the explanations we give to the world (Kleinman, 1988), and in a moral sense, the fact of not including the feelings of the people who suffered dengue in the health campaigns leaves a gap for raising the same injustice-value questions.

For Taussig (1992, 84), the body is not only "a thing" but also "my being." This is to say that during the illness process, there is not only a materiality of the body that can be studied and defined from the

outside —from the physician's point of view— but that by experiencing the disease, *my being* —sometimes understood in terms of "soul" or "spirit"— is also affected. These elements are tied together through bodily experiences. As Merleau-Ponty (2002) comments, "the fusion of soul and body in the act, the sublimation of biological into personal existence, and of the natural into the cultural world is made both possible and precarious by the temporal structure of our experience" (97). Far from saying that there is a soul-body dualism, this invites us to see the significance that people give to the physical effects of a disease on *their being* through their bodies and their existence. For example, in the first official description of dengue, Benjamin Rush (1789) talks about a patient who suggested changing the name break-bone fever for *break-heart fever*, as the disease caused weakness and an uncommon dejection of the "spirits":

> But the most remarkable symptom of the convalescence from this fever, was an uncommon dejection of the *spirits*. I attended two young ladies who shed tears while they vented their complaints of their sickness and weakness. One of them very aptly proposed to me, to change the name of the disorder, and to call it in its present stage, instead of the Break-bone, the *Break-heart fever.* (Rush 1789, 116–117, Emphasis on the original)

This description emphasises Sartre's notion of the "body-for-itself," where, by experiencing the world through the body and through a practical engagement, people experience their body as their own (Sartre 1994, 318). In this respect, Sartre (1994, 337) also comments that illness is the "body on a new plane of existence," which in my case means that the idea of "break-heart fever" encompassed the bodily action of consciousness —as a self-reflexive experience— of the particular patient that Rush was treating. In my project, these self-reflexive processes and value questions were also related to the absence of a specific medication or anti-viral drug, and it was precisely when people like Luis Fernando or Sara found out that the only available medicine was acetaminophen, that they realised that they needed to enter into a week-long recovery process —likened to a mourning process— in which the body would deal with the disease by itself. In this respect, Luis Fernando commented:

> This was the first time in 49 years I experienced something like this. When I went to the doctor and asked *what can I do? what kind of medicine should I take?*, it was a surprise for me that there was no drug for this! I mean, I just had to wait until my body reacted against the virus… and the only way to deal with the symptoms was by taking acetaminophen… You feel the pain down to the bones, joints, and muscles. Everything hurt, even when I touched my skin I felt it hurt and burn.

Pain is, as Byron Good (1994) suggests, "a part of the subject, a part of the self, [and] as a consequence, the body itself becomes personified as an aversive agent" (125). Similarly, Caslav Covino (2004) argues that "pain is the deconstruction of the self" (119). Although the purest meaning of pain belongs to the person that suffers it, we can also address the symbolic understanding of dengue through the eyes of those who suffered the disease. By doing so, it would be possible to think about the thoughts of Sara, Luis Fernando, or Juan David as "embodied experiences" that could be linked to other illness experiences (Good 1994). For example, according to Luis Fernando, something people could do is actively get involved in the design of health campaigns and, by doing so, to think about different ways of reaching people with health campaigns against dengue. He commented:

> I can talk about dengue from a different approach, because after having it, it gave me a particular kind of knowledge. I can say that this is different to having the flu. We can be active agents by communicating different ways of seeing dengue, like how to protect others by not allowing mosquitoes to bite us, and not disseminating the virus in the area where we live.

Luis Fernando's experience was a kind of embodied knowledge that allowed him to remember. As Kleinman (2006) points out, "embodiment —namely, experiencing meaning through bodily processes such as pain— is a means of collective as well as individual memory" (135). As we can understand illness narratives in the light of the body as a creative source of experience (Good 1994, 118), dengue can become visible through the experience of the people who suffer it. This is to say that illness narratives allow people to recall the illness process and, as

I will show in the next section, it is possible to communicate and make visible these feelings through relational art.

PART FOUR

Serotype and the idea of dengue as an embodied experience

Figure 3. Serotype: part human, part mosquito, and part embodied experience (design on paper). Drawing by Alejandro Uribe.

Serotype is a fictional character, a comic anti-hero, who embodies the experience of having dengue fever. By looking at the narratives of Sara, Luis Fernando, and Juan David, it is evident that their experiences and understandings were not connected to the way health campaigns were designed. Following da Costa and Philip (2008) and Barry and Born (2010), I designed a *public experiment* to represent the subjective embodied experience of those who had the disease. By paying particular attention to the different ways in which my participants described their experience of being unwell, I decided to collaboratively re-work all the ethnographic data gathered to create an element that reflected the ideas of how dengue fever was understood as a subjective experience of pain. To do so, I asked Alejandro Uribe, Sarita Álvarez, Juan Camilo Ortega, and Andrés Ramírez for their help. They are part of Bimana Producciones (http://bimanaproducciones.com/), a collective of artists who design a variety of large-scale interventions and performances combining a solar balloon, plastic bags, kites, makeup, prosthetics design, and special effects. The idea was to create a fictional character, or comic anti-hero, who would appear in the public space of the city, creating an active dialogue with different people.

Figure 4. Serotype is waiting for you. Photo by Mario H. Valencia.

Figure 5. Vampire love: between seduction and repulsion. Photo by Mario H. Valencia.

With the objective of situating our public experiment within the context of Colombian popular culture and "everyday life," we also invited Emilio Arango. He is a well-known actor who has represented many characters in educational campaigns that involve artistic interventions in the public space. The most famous of these is "El cazapichurrias," a fictional character who promotes the idea of public mobility across the city. By establishing a playful interaction with pedestrians, car drivers and motorcyclists, "El cazapichurrias" talks about civic norms and respect for public space. Because of this playful interaction all around the city, "El cazapichurrias" has become an icon, or a representative symbol, in the imaginary of Medellín's inhabitants. It has reached the point where words such as "pichurriada," which is a word he uses for violations of the rules, have became part of the way people talk in the city. Emilio was also very important because his body easily resembled Nosferatu —and even an insect.

With Emilio, we meticulously studied what Sara, Luis, and Juan David had told us about their experience with dengue fever and mosquitoes to characterize *Serotype*. We not only considered the symptoms of the disease (pain behind the eyes, aches, fever, joint

pain and rash, to lethargy or restlessness, abdominal pain, persistent vomiting, and mucosal bleeding); we also took into account ideas such as social isolation, break-bone sensation, terrible headaches, insomnia, and the impossibility to articulate ideas. We carefully rehearsed every single movement and ways of acting to produce a lot of emotional responses among the public. *Serotype* also took morphological characteristics from the mosquito, which means that it was a hybrid between dengue symptoms, the experience of the people who suffered it, and the insect.

Figure 6. Serotype in relation to other insects.
Photo by Alejandro Valencia-Tobón.

The terrible headaches and the idea of pain were represented, for example, in the big head and the blisters on its back and arms. The mask also has big insect eyes, which also dramatised the retro-orbital pain. With the help of two entomologists, and some close up photographs of the mosquito, we imitated the insect proboscis (elongated appendage used to suck blood) by using a plastic hose that was connected to a red balloon on which was printed the word "dengue" using an old/gothic typeface. Through his breathing, Emilio inflated and deflated the balloon when he was close to people. The idea of having a balloon

was also suggested by Luis Fernando, who considered that it could be associated with the idea of "virus." He commented: "When I hear the word virus, I always think about something really small, so small that you cannot even see it, but it has an incredible power. I mean, although we do not see it, the power it has is completely overwhelming… so I would represent this as a small balloon that inflates and deflates."

Emilio also dressed in clothes made of latex. On the front and the back, the colours and textures imitated the black and white striped body of the mosquito. The red-like colour on the sides were made with gel, and it was based on the photographs of the cytopathic effect in C6/36 HT cells after the infection with the dengue virus (see Gutiérrez-Ruiz et al. 2012, Quintero-Gil et al. 2014). This also represented the idea of bleeding. On the shoulders, arms, hands, and legs, we applied different techniques of special effects and body painting. They were all intended to emphasise the idea of pain, suffering, rash, and the break-bone sensation. The fever was characterised with yellow tones on the body. Emilio, with his movements and behaviour, clearly linked all these components and made evident the whole idea of representing dengue as an embodied experience.

Figure 7. Break-heart fever: pain and suffering. Photo by Mario H. Valencia.

Figure 8. Serotype: inviting people to look at the world in a new way by thinking creatively about the experience of having dengue fever. Photo by Alejandro Valencia-Tobón.

After many months of work creating *Serotype*, this is what Luis Fernando stated when they met:

> When I met *Serotype* it gave me the same sensation as when I described my experience with the disease, while Alejandro Uribe [the head of Bimana] sat there turning my words into drawings. I had chills at first. *Serotype* is disgusting, annoying, ugly and threatening. He reminded me of the terrible discomfort I had when I was ill. I wanted him to be more than 100 metres away from me. Then I had a kind of vomiting sensation because I felt he was inside of me. It represented what I felt.

Following the Brazilian director Augusto Boal and his ideas of "theatre of the oppressed" and "invisible theatre" (Babbage 2004, Bishop 2012, 122–128), the interventions with *Serotype* were developed without explicit pre-advertisement of them, aiming to "provoke spontaneous reactions and stimulate debate among members of the public" (Babbage 2004, 21). The interventions took place in different crowded places in the city.

Figure 9. Serotype in water. Photo by Mario H. Valencia.

Figure 10. Serotype unexpectedly intervenes in public space. Photo by Mario H. Valencia.

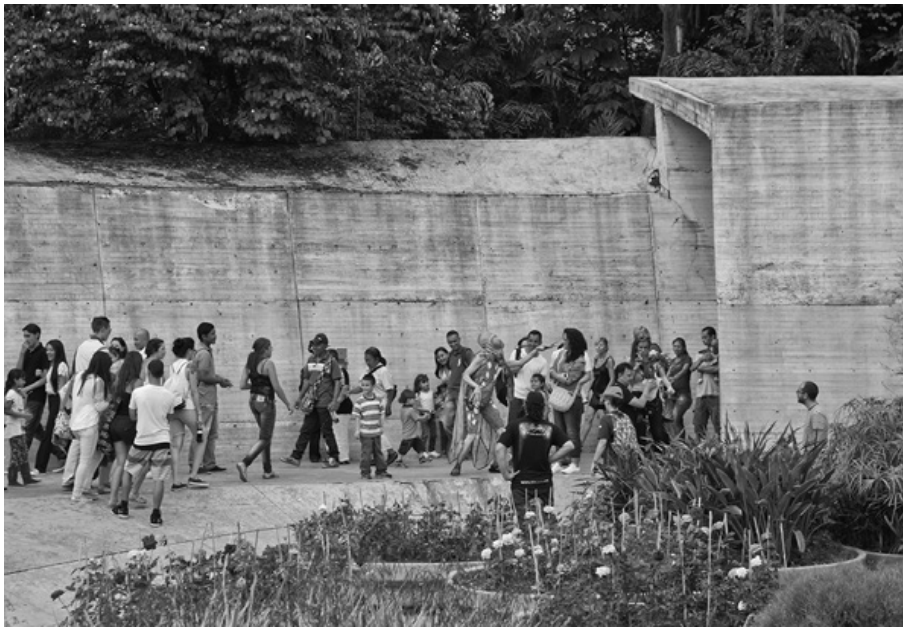
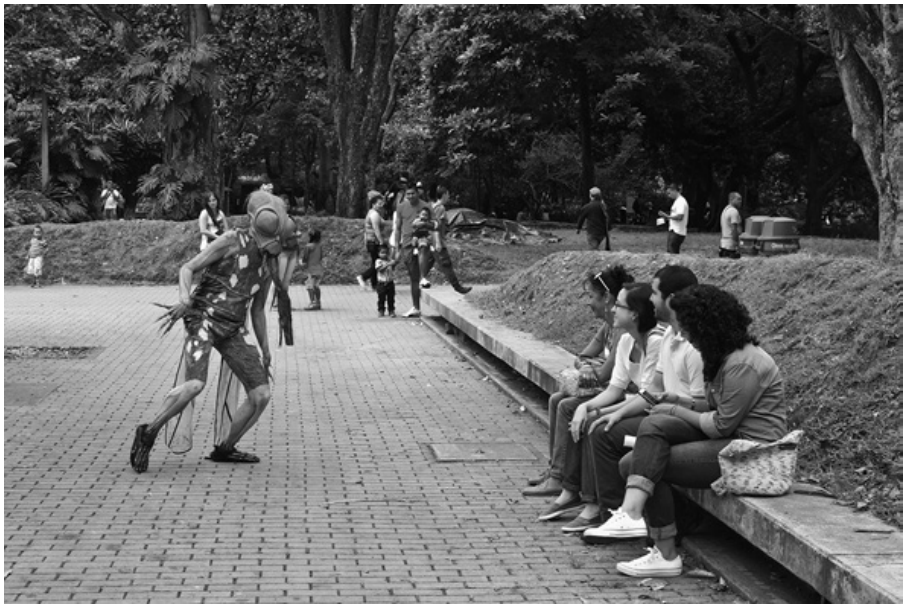


**Figure 11. Serotype is lurking for new victims.
Photo by Alejandro Valencia-Tobón.**

Figure 12. Serotype finds another victim. Photo by Mario H. Valencia.

Figure 13. Serotype: the centre of attention in a crowded park. Photo by Mario H. Valencia.

Figure 14. Serotype: inviting people to identify themselves with different aspects surrounding the experience of having dengue fever. Photo by Alejandro Valencia-Tobón.



What is it like to have dengue?

The broader question that the creation of *Serotype* addressed was *what is it like to have dengue?* Thomas Nagel (1974) addresses the mind-body problem in relation to the way we perceive and experience the external world. He uses the metaphor of "what is it like to be a bat?" to argue that we will not be able to understand someone's experience, if we do not approach it from their particular point of view. In echolocating animals, like bats, brains are designed to perceive high-frequency sound signals and process information in forms of pulses and echoes. If I —as a human being without biological sonar— imagine having such properties, this will only be responding to "what it would be like for *me* to behave as a bat behaves"; but my imagination will not bear the idea of "what it is like for a *bat* to be a bat" (Nagel 1974, 439). This is an argument against explaining consciousness from a reductionist point of view, as to do so the subjective component of experience would not be taken into account. For example, Nagel (1974, 443) argues that a Martian scientist that has no understanding of visual perception can study the light properties of rainbow —as an objective physical phenomena— but would not be able to understand the human concepts of rainbow, or the place it occupies in the human phenomenal world. This is to say, in other words, that *objectivity* is "a direction in which the understanding can travel," but in the understanding of any phenomenon, "it is legitimate to go as far away as one can from a strictly human viewpoint" (Nagel 1974, 443). So the "objective perspective" of what it is like to be a bat would be always limited by our human subjective experience, which means that we will never achieve a non-subjective state.

The point to take from this is that dengue fever cannot be explained from a reductionist point of view, such as the discourse about mosquito-breeding sites. By not including the patient's point of view, we would only arrive at a partial and rough conception of the disease. Nagel's approach also takes us back to the problem of embodied knowledge that I have previously raised. It is mainly through experience that we understand the world. So, by following his argument, I can ask: *What would be left of what it was like to have dengue fever if one removed the viewpoint of the person who had dengue fever?* Only those who experienced the disease can speak about the experience of having dengue, hence, not including them in the way health campaigns are designed leaves a big

gap in the understanding of the disease (see the case of HIV/AIDS as an embodied experience in Irving 2007).

Insects, art, and the idea of multispecies ethnography

Multi-species ethnography engages with the alterworlds of other beings (Kirksey and Helmreich 2010, 553). As Escobar (1995) contends in his work about knowledge-making practices and development policies, "nature is a co-production among humans and nonhumans [...] [W]e have the possibility of engaging in new conversations with and around nature, involving humans and nonhumans together in the reconstruction of nature as public culture" (207). Multispecies ethnography enacts the problem of addressing relationships with nonhuman others, because "the conventional subject of anthropological concern, is no longer a clearly bounded biological subject" (Kirksey and Helmreich 2010, 556). The idea is to create spaces for collaboration and reflexivity in relation to new ethical and aesthetic engagements with the world and the multiplicity of living beings (Dransart 2013). In Richard Grusin's (2015, xx–xxi) words, "to turn toward the nonhuman is not only to confront the nonhuman but to lose the traditional way of the human, to move aside so that other nonhumans —animate and less animate— can make their way, turn toward movement themselves."

Kirksey and Helmreich (2010, 557) hold that "art forms have proved good to think with about 'living with' in a multispecies world." It is precisely in art practices where we see the bases for the so-called non-human turn in social sciences, especially anthropology. In fact, art is the main component of the "multispecies-salon" (Kirksey 2014), which is the key example Kirksey and Helmreich (2010) use to introduce the concept of multispecies ethnograph[5]. For example, we can consider the work of Marnia Johnston, an interdisciplinary artist who invites us to think about the consequences of using chemicals in our daily lives. In the sculpture *Twins* (2005), Johnston puts wings on insect larvae —larvae do not have wings— to make us reflect on how young people's bodies are acquiring adult features[6]. She explains that "humans are acquiring adult characteristics, such as breasts, at an early age. Endocrine disrupting

5 See http://www.multispecies-salon.org

6 See http://marniajohnston.com/artwork/975130-Twins.html

chemicals, like Bovine Growth Hormone, are working on the bodies of humans and multiple other species" (Johnston, cited in Kirksey and Helmreich 2010, 560). But why should anthropology as a discipline care about something beyond the human? Why should we look at animals or other kinds of living beings? According to Eduardo Kohn (2013, 221), animals are part of us, so by looking at animals, we are looking back at ourselves. The idea is that "one does not meet oneself until one catches the reflection in an eye other than human" (Loren Eiseley, cited in McVay 1993, 8). This kind of analysis is what Johnston suggests with her sculpture *Twins*, and what I am suggesting with *Serotype*. Thinking about *Serotype* implies the problematisation of dengue as something that requires novel responses, raising questions and providing means for the interaction of new forms of thought, dialogic and experimental approaches, rather than simply considering problems as obstacles that need to be overcome (Barry et al. 2008, 29–30, Barry and Born, 2013, 10).

Endings

I have presented a relational argument between the idea of living with mosquitoes —as it is almost impossible to eliminate them from the world— the experience of those who have had the disease, and academic knowledge beyond the elimination of mosquito-breeding sites. This does not to imply that the government should stop developing health campaigns, but rather that by accepting that people live with mosquitoes and by incorporating experiential and academic knowledge, we can create different forms of managing the disease through participatory public experiments—which is, in turn, a different way of seeing health campaigns. Recognizing the experience of living with the disease also implies that the health system should respond in a different way, understanding *what it is like to have dengue*.

While reflecting on these ideas, in this project I tried to present dengue from a different point of view, suggesting that the "over-automatisation" of health campaigns should be replaced by new ways of seeing and thinking about dengue. This demands a sort of *re-enchantment* of the disease, in the sense that any form of knowledge should produce uncertainties, doubts, and mysteries (Keats 1817b, 60–61, Barnett 2014, 21–22). It is required to reflect back on imagination, aesthetics, and embodiment in order to develop a better sensory-based comprehension of the world

(Keats 1817a, 54, Stafford 1994, 1999). Art is a good way to reflect on how people experience disease because, as Shklovsky (1916, 16) argues, "the purpose of art is to impart the sensation of things as they are perceived and not as they are known." To do so, art makes objects "unfamiliar" and strange, which "increase[s] the difficulty and length of perception because the process of perception is an aesthetic end in itself and must be prolonged" (Shklovsky 1916, 16). Because "anti-dengue campaigns" became over-familiar, I sought to make them "strange" by creating *Serotype*. This relational experiment provided a critical reflection on the kind of top-down relations at work in the health campaigns. By doing so, I "revitalised" the idea of dengue.

Figure 15. Work team. We are committed to art practices as a medium for rethinking social relations and imagining a different world. Photo by Hernán Marín.

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