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# Epidemiological placism in public health emergencies: Ebola in two Dallas neighborhoods

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#### A R T I C L E I N F O

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#### ABSTRACT

Super-diverse cities face distinctive challenges during infectious disease outbreaks. For refugee and immigrant groups from epidemic source locations, identities of place blend with epidemiological logics in convoluted ways during these crises. This research investigated the relationships of place and stigma during the Dallas Ebola crisis. Ethnographic results illustrate how Africanness, more than neighborhood stigma, informed Dallas residents' experience of stigma. The problems of place-based stigma, the imprecision of epidemiological placism, and the cohesion of stigma to semiotically powerful levels of place – rather than to realistic risk categories – are discussed. Taking its authority from epidemiology, placism is an important source of potential stigma with critical implications for the success of public health messaging.

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#### 1. Introduction

The Dallas Ebola crisis was unlike the rest of the West African epidemic, but it is instructive for super-diverse global cities facing new spatial scales of infectious threat (Ali and Keil, 2006; Vertovec, 2007). Building on the argument that "marginalization within the city" corresponds with health inequity (Wutich et al., 2014:2), my research aimed to understand the relationships of place and stigma during the Dallas Ebola crisis. The study reveals the powerful stigmatizing trope of epidemiological placism, and points to the role played by imprecision of place in the racializing of modern infectious disease epidemics.

In epidemiological logic, infectious disease can (theoretically) be traced to an origin in space, time, and bodies (see Giesecke, 2001). The preferential treatment of those origins of infection is not an irrational prejudice, it is a containment imperative. But if we observe the varied interpretations of epidemiological place information, and witness the migration and re-interpretation of that information through professional and lay audiences, the problem of place-based stigma — a form of prejudice called "placism" — becomes clear.

Placism, as a concept, is sparsely used in geography and education literature, such as [imerson, (2005) article on the exclusionary education policies for rural school systems, and across fields such as architecture, urban planning, aesthetics of place, and social studies of place (Carter, 2004; Cartier, 2008; Ford and Griffin, 1979; Giblett, 2009; Hage, 1997; Palmer, 2011; Stocker, 2005; Ward, 2003). I use the term placism to refer to the process by which certain places gain disproportionate epidemiological blame over local risk realities, typically because they adhere to historical or familiar cultural logics. In this conversation, I do not question the trauma experienced in an infected place, nor the genuine risk of exposure to viruses that infected travellers may pose. Instead, I build on anthropologies and medical geographies of space to argue that locational scale and the imprecision of place complicate existing models of place-based epidemiology in ways important for global public health interventions. In particular, the study uncovered diffuse continent-level placism against Africans. In my discussion, I situate these findings at the intersection of medical geography, research on semiotic and place-based stigma, and studies of structural and ideological prejudice in public health.

#### 2. Background to the crisis

Eric Duncan, a Liberian man who had been exposed to Ebola

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days before his trip to visit family in Dallas, landed on September 20, 2014. He was entering a semiotic landscape that was home to over 20,000 resettled refugees and an approximate foreign born population of 1,134,709 (FactFinder, 2013). He was diagnosed with Ebola and admitted to Presbyterian Hospital on September 29th and he died on October 8th. Two of his nurses were subsequently diagnosed, treated, and recovered: Nina Pham, diagnosed on October 11 and cleared on October 24th: and Amber Vinson. diagnosed on October 15 and cleared on October 22. Tremendous public health, governmental, medical, and media attention was given to these cases, particularly Mr. Duncan's and to the actions of Presbyterian Hospital. National and international media trucks were visible in the neighborhoods of Mr. Duncan and Ms. Pham (these neighborhoods are described below) for several days and reports of aggressive tactics by journalists in Mr. Duncan's neighborhood are given in the narratives below. No other cases of Ebola were recorded in Dallas following these three, though the West African Ebola epidemic, which peaked in 2014, produced cases into 2016

When his diagnosis was confirmed, Eric Duncan's identity was swiftly encapsulated in local media as his *neighborhood*, Vickery Meadow:

The Ebola crisis *in Vickery Meadow* is truly tragic; tragic for Thomas Duncan, tragic for his family and tragic for his larger community. The fear associated with it is completely understandable, and in many ways it resembles the early days of the AIDS epidemic. This is a deadly virus that is poorly understood by most of us outside the medical profession. Caution is certainly warranted, but I hope we can prevent this tragedy from spreading by not letting our concern turn into fear or intolerance.

#### Stephanie Hunt, Dallas

The root of this crisis *is Vickery Meadow*. You can't stuff that many poor immigrants, refugees and undocumented aliens together then look away, as this city has been doing. Vickery Meadow is a boiling pot that will spill over again if we keep ignoring it.

Jason Nancarrow,

Dallas/Preston Hollow Dallas Morning News October 6, (2014) (Letters to the Editor, emphasis added)

Could neighborhood, as these letters suggest, be pivotal to one's experience of the Ebola crisis in Dallas? Anthropologists engaged in crises and epidemics have insisted that local vulnerabilities dramatically affect behaviors, understandings, and containment; that subgroups need special attention, and that institutions must be scaled to engage in local, individual, and community trust-building in order to be effective (Abramovitz et al, 2014, Moran and Hoffman, 2014). The Hewletts (2007) captured these types of data for Ebola in Central Africa, as did a great number of social scientists working in the recent West African Ebola epidemic. Their emphasis on the local – local culture and knowledge, local resource needs and assets, and engagement with local participants – were crucial to the epidemic's conclusion in West Africa.

But tensions between epidemiological (population-level) truths regarding globally mobile infections, and the details of local places and contexts, continue to frustrate public health interventions and international collaborations (Biruk, 2014; Brown et al., 2015). There is, on the one hand, epidemiological logic for identifying an infectious disease with its geographic source or index case; and on the other hand, there are local advocates insisting on locally sensitive, semiotically relevant, and sustainable responses. Widening the divide between these approaches is the inflammatory rhetoric of emergency, which allows social and media discourse to catastrophize particular places regardless of actual risk (Fassin and Pandolfi, 2010). In the Dallas Ebola crisis, a strategic – and distinctively epidemiological – form of placism grew up around (apparent) Africans via the coalescence of epidemiological and lay discourses of imprecise place.

#### 3. This research

As stated above, this research set out to compare resident experiences of the Ebola crisis in two neighborhoods of Dallas, each having one Ebola victim in residence. The goal was to assess whether stigma for Ebola could be tied to one's residential proximity near an infected person, or whether stigma adhered to some other variable. Stigma is one of the most evocative themes in the study of disease and society, and is highly influential during epidemics (Barrett and Brown, 2008; Des Jarlais et al., 2006; Hickson et al., 2004), with the relationship between perceived neighborhood stigma and poorer health being well established (Gupta and Ferguson, 1992; Hillemeier et al., 2003; Kawachi and Berkman, 2003; Kelaher et al., 2010; Wutich et al., 2014). Yet stigma is a particularly important element of crisis because it is a social tool. albeit a blunt one, for managing uncertainty and fear. If Ebola stigma is attached to neighborhood, then we could expect roughly equal patterns of stigma in these two neighborhoods. If not, then ethnographic interviews would help decipher what other patterns in stigma, fear, or semiotic place did exist.

#### 3.1. Research setting

There were two primary field sites: the low-income and high refugee population area of Vickery Meadow where Mr. Duncan was visiting; and the predominantly white, middle-class M Streets/ Lakewood Heights neighborhood where the nurse Nina Pham lived. Although these communities are not unequivocally bounded or defined (Gupta and Ferguson, 1997; MacQueen et al., 2001; Smith-Morris, 2006), each (as named neighborhoods in Dallas) has enough symbolic cohesion to warrant the study design.

Vickery Meadow is "a 3.5-square mile area 'created' in 1993, when a group of apartment owners formed the [Vickery Meadow Improvement District] VMID and started to work with the Dallas Police Department to address rising crime rates in the area" (Haayen, 2014). Its distinctiveness as a community has been the subject of periodic attention, mainly as one of Dallas' poorer, high-density neighborhoods. The 2014 population for Vickery Meadow's zip code was approximately 60,000. To this high density is added tremendous, and growing diversity. The International Rescue Committee uses this site to resettle a significant number of refugee families. And as Haayen reports, "the residents of Vickery Meadow represent 40 countries from around the world, and local school administrators count at least 27 languages spoken within the area" (Haayen, 2014). Median income for the zip code is \$32,011, with 68.2% in the labor force and unemployment at 7.2%. Households in this neighborhood have a child dependency ratio of 42.2, and media age 30.1 years. 74.1% are high school graduates or higher, and 28.9% have a Bachelor's degree or higher. Ethnic and Refugee/Immigration status are reported in the Tables below.

The M Streets neighborhood, in contrast, has been demarcated as a neighborhood in multiple ways, increasing in size in successive online maps due to the area's rising property values. Initially, the M

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#### Table 1

Zip code demographics for Vickery Meadow and M streets.

Zip Code <sup>a</sup>	White	Black or African American	American Indian and Alaska Native	Asian	Other	Naturalized U.S. Citizen	Not a U.S. Citizen
75,231 (Vickery Meadow)	61.5%	23.3%	0.7%	6.2%	6.1%	1760	10,364
75,206 (M Streets)	81.0%	6.1%	0.3%	4.7%	5.0%	1382	5165

<sup>a</sup> Zip codes do not correspond precisely to the neighborhood boundaries.

#### Table 2

Participant characteristics.

	# of Participants	# Male	# Employed	Mean Duration of Residence	Less Than High School Degree
Vickery Meadow	20	10	14	2.9 years	40%
M Streets	21	9	17	13.9 years	0%

Streets neighborhood was an area of just a few blocks of streets sharing a construction design (Tudor cottage) and an alliterative name; but it is shown on several websites to span (in one realtor's extreme rendition<sup>1</sup>) as much as six square miles. The desirability of the area for housing seems to have led to this conceptual growth of the M Streets. The population of the roughly corresponding zip code was 37,500 people in 2014. Median income is \$52,889, with 82.6% in the labor force and unemployment at 5.9%. Households in this neighborhood have a child dependency ratio of 13.5, and median age 31.0 years. 88.0% are high school graduates or higher, and 58.2% have a Bachelor's degree or higher. Ethnic and Refugee/Immigration status are reported in the Table above.

#### 3.2. Research methods

This ethnographic study examined residents' perspectives during the 90 days following Eric Duncan's diagnosis. This time frame reflects an effort to capture the early crisis phase only (Smith-Morris, 2006), and to reduce the likelihood of changing perceptions and knowledge over time. Methods included participant observation in neighborhood streets, restaurants, and stores; one church service and social; one parenting group class and holiday party; one neighborhood watch meeting; and briefly in tours and short observations at three schools. Unstructured interviews with businesses and service agency representatives, local school principals, staff, and district representatives provided broad contextual knowledge as well as recruitment help. Semistructured recorded interviews with neighborhood residents lasted between 45 min and 2 h in total. The author and two Masters level anthropologists performed all interviews following informed consent procedure as approved by the Southern Methodist University IRB. In both neighborhoods, participants were interviewed in their homes, the home of a friend, or in neighborhood locations (e.g., coffee shop, apartment complex office) of their choice.

Professional translators were used for all participants who asked for them (languages were English, Krahn, Kinyarwanda, Somali, and Amharic). To help ensure consistency and correct interpretation of interviews, interpreters learned and discussed the questionnaire with the PI prior to interviews, and provided written explanation of their translation of certain key terms including: fear, risk, stigma, prejudice, proud, insult, judge, treated badly, discriminated against, and "people think better of me".

#### 3.3. Recruitment and sample

Non-probability purposive sampling was conducted. Potential participants were recruited using posted flyers in each neighborhood, directly in public spaces, and through key informant introductions. Non-probability sampling restricts the potential for statistical analysis and leaves us unable to know whether we have represented the population. Sample-size recommendations for non-probability sampling in qualitative research offer some flexibility but range from 15 to 30 (Guest et al., 2014; Bernard, 2000, 2002a, 2002b; Morse, 2000). Non-probability sampling is useful, however, for certain circumstances and research questions such as this one, in which sampling could be purposive and the research procedures exploratory (Bernard and Clarence, 2014).

Participant Characteristics are provided in the Table below. In Vickery Meadow, 10 participants identified themselves as Black African, 6 as Liberian, 2 as Congolese, and 2 as Somali. In the M Streets, 17 identified themselves as White, 3 Mexican, and 1 Irish-American. Occasionally in Vickery Meadow, participants offered more than one answer to the question of ethnicity. In these instances, we asked them the affiliation with which they most identified.

All but seven Vickery Meadow participants agreed to tape recording. The seven Vickery Meadow residents who declined the tape recording were not asked to explain their request, but all who chose to tell us named anonymity as their main concern. When tape recording was declined, interview responses were recorded by hand in field notes.

#### 3.4. Data analysis

Recorded interviews and interview notes were transcribed, and coded in two steps. First, a sample of 3 interviews was coded in Atlas.ti by the author and one trained research assistant for recurrent, explanatory, or descriptive themes. Inter-rater agreement was not performed, but was ensured through discussion to consensus after the third and again after the sixth coded transcripts. Any revisions to the codelist were made at each discussion, and then only as necessary during the remainder of coding. Coded excerpts were then analyzed following the grounded theory method, to identify themes: repeated issues and concerns, influential factors, and patterns in participant experiences or narratives. To help ensure the reliability of conclusions, themes are drawn from multiple participants plus observations. This process guards important findings in one source with at least one other source, and allowed comparison within and between the two neighborhood groups for observable

<sup>&</sup>lt;sup>1</sup> http://www.m-street-dallas.com/index\_wheremstreets.html.

differences.

#### 4. Fear of ebola in two very different neighborhoods

Substantial literature on structural stigma and prejudice (Hatzenbuehler et al., 2013; Parker, 2012; Stuber et al., 2008), territorial stigmatization (Wacquant, 2007; Wacquant et al., 2014), and the dynamics of neighborhood-related stigma (Keene and Padilla, 2010; Wutich et al., 2014) predict that poor, migrant, and ethnic minority neighborhoods are more likely to be stigmatized. The open-ended interviews exploring resident's understandings, beliefs and experiences of Ebola, their neighborhood, and stigma confirmed this research broadly, but yielded surprising results well beyond the dynamics of neighborhood-related stigma.

At a basic level, VM participants were more fearful than MS participants about actual infection, had closer awareness of the West African epidemic, and experienced greater problems because of this crisis. VM participants discussed specific manners of infection, and their proximity to the home of their neighbor who had contracted the virus.

"Did you feel like you could get Ebola?" (185, VM) No, but my friend, when he go to the gas station, he take uh gloves.

(186, VM) I didn't go to the state fair, I haven't been yet ... But other than that, I wasn't really concerned .... After Mr. Duncan died, I wouldn't say that I relaxed, but I was, um, somewhat relieved that it had been contained, I guess. Is that the way to describe it? And then I was concerned about, um, his girlfriend and the children, because apparently they lived with him during that time. So, of course, since I live in the Vickery Meadows area, I think that, um, a lot of people were probably very concerned about what was going on right down the street. Um, but besides that, not really.

The narratives above reflect exposure-related fears (i.e., contact exposure) among VM participants. These excerpts reflect neither placism against VM nor prejudice against black bodies.

In our sample, only VM residents had family members in Liberia. Though VM is not a current resettlement site for Liberian refugees, we identified and interviewed 6 Liberians whose perspectives were both unique and invaluable. They expressed deep and personal concern for the welfare of loved ones in Liberia, which fell in striking contrast to most others in the study, whose greatest "exposure" to the epidemic was through media and social networks:

(173, VM) My friend, and back home with my mom in Liberia, my brother, my sister, they're in Liberia. So we talk to them and see how they coming on, whether somebody get sick around them, you know. We're worried about their safety. And when the Ebola was in Dallas, and we were worrying about ourselves, you know, because we don't know whether, you know, what would happen to us .... We were not happy. Because every time you told someone, I would say, "Oh, a person in my family died from Ebola," or a person died, you know, people that were not supposed to die, they would die. People were dying in Liberia because no doctor were to the hospital because of Ebola. People [were] scar[ed]. Women giving birth dying, because nobody could take care of them. ... So it was hard for us, and it's still hard for us too.

These and other VM narratives of fear were intense, close, and emotional. They touched on several issues: exposure to the virus in Dallas; prejudice related to their Africanness; fear of job loss; and concern for family in West Africa.

Turning now to interviews in the wealthier and less ethnically

diverse MS neighborhood, only one participant in MS conveyed a real sense of fear during the interviews. Participant #197 said, "It's terrifying to watch people die that way". This woman's comments were based on her experience in the medical field; she did not suggest that this terrifying experience was specific to her neighborhood, but of course to witnessing suffering. Instead, MS residents felt safe in their neighborhood and generally that the infection had been contained:

"Do you feel at risk for Ebola?" (171, MS) "Not at all"

A majority of participants in MS, like #171, expressed very little or no fear at all of Ebola. The mood during these interviews was decidedly more light-hearted, even joking, about Ebola and the exceptional attention being given to these neighborhoods, to Dallas generally, and to the disease.

"Have you changed your behavior as a result of the Ebola cases in Dallas?" (171, MS) I put on nicer clothes when the helicopters were flying over ... [laughing]. I didn't get the paper in my nightgown.

(252, MS) I think the only thing I avoided was movie theaters.

(199, MS) I didn't take it lightly, but I know all people are, can be ruled by fear .... I didn't over-panic with this thing, but it was a good learning on what you can do, or what to do.

The relative lack of fear in MS interviews was equaled by the absence of quotes about Africans (none in the MS sample). MS participants did, however, draw attention to the evolution of fear and knowledge as the outbreak was unfolding, and how participants processed information over time.

(169, MS) I just don't feel super afraid of it because ... the family that were in that apartment with the initial man did not contract Ebola.

Participant #169 felt safe *because* Eric Duncan's family did not get sick. But until the quarantine of his family members had ended (October 20th), fear was greater. The evolving crisis produced corresponding swings in public sentiment and media expression. So by the time of these interviews, *all* participants could have known these outcomes. The fact that #169 did not feel afraid at the time of his interview in late November is relief not everyone felt by this time.

One other distinctive difference in the narratives of MS was that, instead of the expected narratives of fear, MS participants talked *about* fear itself, specifically "panic" and "hysteria". They used these characterizations to express their judgments about the legitimacy of fear reactions they were aware of, such as this healthcare professional:

(197, MS) I was working in the ER at the time .... And they would come in and say, "My kid had a temperature of 99.4," which isn't even a fever, and say, "Does he have Ebola?" ... So it was difficult for us because it was right about the time that viral season was starting .... It's a fear factor. So, all of our nurses, our triage nurses, had a set of questions, screening for travel that would have put you at risk; or whether or not you were in a classroom or in close contact with someone who had already been identified [with Ebola]. And the CDC helped us come up with what those questions were that would weed out 99 percent. And so most of them could be weeded out in triage.

Only one-of-twenty (1/20) VM residents spoke in this evaluative way about fear, but eight-of-twenty (8/20) MS residents used

phrases like "being overly concerned", "panicking", or fear out of proportion to risk. Participant #197's confidence (above) was informed, certainly, by the timing of the interview, but also by his confidence about the low risk of Ebola for patients at his ER. Perhaps it was a similar sense of confidence/security that inspired these other MS participants to remark about how friends, family, or neighbors were misguided or overly fearful:

(197, MS) [My] family were just sure there was a pandemic coming.

(195, MS) I think while basically it's a good neighborhood, it did have its tendencies to be panicking.

(253, MS) But to go bat-shit crazy crap, like, "Oh well, we've got to send all this state money and set up a local thing in Texas", it's like people, as bad as it is, you're overacting.

(199, MS) [It's a matter of] taking it lightly versus being ruled by fear; ... I didn't get into the big panic or uproar.

As mentioned above, the timing of the interview (after local nurse victims had recovered) may have affected participants' confidence or sense of security. But this effect was not found in VM.

In sum, the two neighborhoods were clearly very different not only in their demographic and socioeconomic characteristics, but also in the fears that they discussed. VM residents experienced greater fear and anxiety, while MS narratives included more critiques of fear and used evaluative terms like "panic" and "hysteria" to describe their sense of the crisis.

#### 5. Place-based stigma, but not because of the neighborhood

When interviews turned to stigma, it became apparent that neighborhood stigma did not explain Ebola stigma. There was a clear difference between the two neighborhoods in terms of perceived stigma for Ebola. When asked whether they felt stigmatized for living in a neighborhood with a victim of Ebola, twothirds of the (affluent) MS residents but only three of 20 VM residents said "no". MS responses included:

(197, MS) Not really. Um, I think people were fascinated by it in my neighborhood. I think that my neighborhood is a relatively educated neighborhood. I think most people have graduate or post-graduate degrees, and so they mostly understood that it was not an immediate risk, but it was something everyone was fascinated by. So I think that, I think that everyone was interested in it, and talked about it, and it was a, it was a huge topic of discussion, but I don't think people were really fearful of it.

(199, MS) Not in this neighborhood, but the people I know in Vickery Meadow, [yes] because I do know people that live there.

(254, MS) Like since we own a restaurant that's only a few blocks down the street, it's like, wow, I wonder if we will have any consequences. We really didn't. We felt no consequences from people being fearful about going out to eat, or coming to the area.

(465, MS) None at all.

VM responses were predominantly positive, and named nonneighborhood reasons: their Liberian nationality; African appearance and/or accent; and black skin. Examples include:

#### 5.1. For being African

(180, VM) When they know you're African, the first thing they're going to ask is what part of the country you're from. And once

you say that [you're from Liberia], man, that's a- yeah .... They don't give you no respect .... The way they would just mock you, say stuff about you. I mean, they don't know nothing about you.

#### 5.2. For having an accent

(184, VM) Actually, I remember ... when I went to a store, there was a child with her mom. When she saw me she realized that I was not from here. She asked me a question, "Do you have Ebola?" And she was a little girl, like maybe she's like nine or ten, not a lot. In my mind I think, "How come that this young child asked me this question?" Is it because she hear[d] that I don't speak the language from here, that ... I have to have Ebola." I think maybe she heard that from her parents. ... Yeah, they were black ... but it was the different accent of mine. And because they heard me speaking, they ask me that.

#### 5.3. For having black skin

(188, VM) Like our neighbors, when it was there, many people run away from us because they think every black has Ebola .... It was rumors circulating saying that every black has, has this virus .... Our neighbors, who are not black, just could say this black family have Ebola.

(187, VM) Yeah. We just heard it. People here were coming to us saying that we have Ebola. *What people? Were they your neighbors?* There's not many blacks where we live .... They were very much scared, just we were like, put us aside. They would not tell us [that they were afraid of us] but [they would] not come where we are.

#### 5.4. For being Liberian

(173, VM) The problem we were having, especially, that we came from Liberia, it was at work. We were not safe. Because when we're speaking, and they ask "Where you from?", when you say you're from Liberia, it would come like a big—like you throw a bomb. People would tell you, "Oh, I don't want to touch your cart [at work]. I don't want to get Ebola." That [was] kind of embarrassing. So we was so worried, you know. Sometimes we don't even, we have to lie sometimes about our country, and we've been in th[is] country since 2003. We never go back home. But being that he has it, they think that all the Liberians that [are] in the United States, they have Ebola. Those people would carry it, we came from Liberia, so they think that we carry Ebola. So it was, to me it was hard, because I think if somebody has it, it's not all Liberians, you know? And I've been in the country for almost 11 years, I never went back. If something happened, accusing all the Liberians, that we have the Ebola, it was, it was hard on us. It was really hard on us.

(175, VM) I don't know because we have some of the Spanish people, because when they [the authorities] started to go into the Duncan house, or apartment, the Spanish people started taking our names, the Liberians' names, to the listing office, saying that we brought Ebola into the complex.

Only one narrative of neighborhood-linked Ebola stigma was recorded, and it was in VM specific to a particular apartment complex within the neighborhood where several Liberians lived:

(175, VM) A lot of people started staying away from us. Some people started saying that the complex I live in, they are the Ebola families, so people started avoiding us.

However, participant #175, an African woman herself, associated Ebola not with neighbors, but with Africans:

(175, VM) I go to the grocery store, but what I do is, I don't go to the store that a lot of Africans go to, trust me.

#### And another woman, a Liberian:

(173, VM) I went to, uh, T-Mobile store, and this guy, you know, I was online. So when he came right behind me and he spoke to me. He's an African American. So when he spoke to me right in the store, he spoke to me and said, "Hi," so I said, "Oh, hi." Then he said, "Oh, I like your accent. Where you from?" so I said, "Oh, West Africa." So he said, "West Africa. Liberia?" so I said, "Yes." And he said, "Okay. I don't want to touch you because you have Ebola, because you're from Liberia, so you have Ebola." That guy left the store, because he think that I have Ebola. If I have Ebola, I would not be here, among people, and I don't even go around the people that have Ebola. I don't even come in contact with them—so I just left the store because I was so embarrassed.

She then explained how this stigma troubled her at work:

And to the hospital, we have the same problem. When we're cleaning room we're supposed to communicate with the patient, but because of that we don't want to talk to the patients so they can't hear our accents, because when we talk to the patients, some of them would say, well, they don't want us to clean their room because, because we have Ebola. So that happened like two to three times to me at Parkland Hospital.

In sum, neighborhood-level stigma did not explain their Ebola stigmatization. VM residents identified prejudice in people who distrusted not their neighborhood, but their Africanness, their black accented bodies, or specifically their Liberian nationality. Ebola stigma was attached more to these visible or continent-level markers of Africa, than to local and proximal risk factors like neighborhood residence near a victim.

So while the narratives of stigma did cohere around place, it was a place very far away; *not* the local neighborhood. The fact that Africa and Liberia were more stigmatized than local neighborhood resulted in an imprecision of place in the public's understanding of Ebola risk. Localities that were far away and relatively undifferentiated were easily stigmatized. This disproportionate blame placed on Africanness, or Dallas, regardless of actual risk of infection, is an example of "lay epidemiology" (Bailey et al., 2006), which is an imprecise version of strict professional frameworks. In this case, certain place-names gained disproportionate notoriety over local risk realities. Further examples include the perception that Dallas was stigmatized by those outside of it:

(252, MS) did you experience prejudice: Yeah, I definitely think so. I mean, there were definitely people who wouldn't visit me during that time, who elected not to.

Or that Presbyterian Hospital was a stigmatized place within Dallas:

(198, MS) I heard some of my tennis friends say, "Oh, I cancelled my appointment. I'm not going up there [to Presbyterian Hospital] at all." And I was up there all the time, taking [my friend] for a CT or doing something like that. So I didn't – I, I clearly saw that we didn't agree on that, so I just thought I better not say anything .... I'd been up there once since we moved here, but I was probably up there 15 times during the whole [Ebola] thing, which isn't that weird? So, again, you just don't want to, like, advertise that.

There were, thus, multiple levels of place drawing stigmatized attention: continental, national, city, and hospital. Notably, neighborhood (where risk of contact exposure might have been plausible) was barely mentioned by participants as a cause of stigma.

# 6. Discussion — the imprecision of place: placism as racism in the epidemiology of Ebola

In this study of Dallas' Ebola experience, the multi-leveled nature of place and its role in Ebola were seen as an expression of placism that can emerge from infectious disease epidemiology. Two neighborhoods matched for exposure (i.e., having one resident victim of Ebola) had profoundly different ways of speaking about the Ebola crisis and experiences of stigma. Yet the epidemiological logics of risk (i.e., neighborhood proximity to an infected person) masked all these local details, and placed inordinate emphasis on accented, African immigrants and refugees for being – however long ago– from the continent-level source of this epidemic. That is, patterns of stigma adhered to certain levels of place, and not to others.

How could something as apparently precise as the locational source of an infectious agent become so convoluted in social discourse? Substantial research on place, stigma, and race has relevance here. First, while medical geography and other social sciences have long documented the relationship between place and inequity, Kearns and Joseph (1993) significantly expanded the meanings of place for social science by differentiating orthodox (geometric) space from two types of social space (experienced and socio-spatial). Seminal applications of these ideas (Nations and Monte, 1996; Takahashi, 1997; Craddock, 1995) connected place with stigma by identifying stigmatizing discourses within powerful institutions and ideologies, and by showing how the punitive accusations of authoritative public health bodies elicit pragmatic defenses by those blamed for the outbreaks. This realm of research and theory remain influential in contemporary considerations of stigmatized place as both constituted by and constitutive of health inequalities (e.g., Keene and Padilla, 2010; Wacquant, 2007; Wacquant et al., 2014).

But place and stigma do not fully explain the effects of Ebola on the participants in this research. The level of place and the cultural and historical meanings of place must also be taken into consideration (Feld and Basso, 1996; Low and Lawrence-Zúñiga, 2003). Residents in the two Dallas neighborhoods did not attribute their fears and experiences with the Ebola crisis to their neighborhood residence, the hypothesized place of importance. The stigmatizing processes of the Ebola crisis in Dallas only became clear in the narrative data on Africa and Africanness. Stigma, in this case, mapped onto the highest levels of place (i.e., continent rather than neighborhood). The process by which stigma dissipates from certain levels of place, and coheres around other levels is indicative of the intrapersonal, interpersonal, and macro-level processes simultaneously influencing stigma (Hatzenbuehler et al., 2013; Phelan et al., 2014). For the Dallas Ebola crisis, stigma cohered around the already (and historically) stigmatized and racialized place-level of Africa. The racialization of Africa is heavily implicated in these findings, particularly in the way that the naming of Africa makes blackness and race invisible (e.g., Ciribassi and Patil, 2016). Racial discrimination has been associated with a variety of negative mental and physical health outcomes (e.g., Nazroo, 2003; Williams and Mohammed, 2009). Indeed, perception of racism alone may be enough to negatively affect health through a variety of psychological and behavioral mediators (e.g., Brondolo et al., 2011) or through the actions of health care providers (Hunt et al., 2013; Volinn, 1983) or even through health researchers (Baer et al., 2013; Ford and Airhihenbuwa, 2010). In short, the relationship of racism to place is not accidental (Baer et al., 2013; Wacquant et al., 2014). While Africa and Africanness had some level of epidemiological justification for Ebola blame, the non-specificity of this prejudice merged placism with racism, allowing one to camouflage the other.

In their review of scholarship on social inequality in Africa, and of Africans in the global order, Thomas and Clarke (2013) argue that "the ambiguities concerning racial meaning and understanding, the presumptions about race and its limits, and the politics of desire and denial remain unaddressed" (2013: 316). My research seems to point to epidemiological placism, and a corresponding racialization of risk, as one such ambiguity. Stigmatized places become metaphorical holding bins for multiple forms and degrees of prejudice including racism, xenophobia, the otherness of Africa (e.g., Ciribassi and Patil, 2016), invisible diseases like sickle cell anemia (e.g., Sabo et al., 2014), or conflated prejudices like ethnicity and immigration status (e.g., Sampson and Raudenbush, 2004). Media and lay discourses exploit the imprecise nature of a continent as an infectious place to dodge accusations of overt racism. And these discursive practices work by attaching to pre-existing biases to seed widespread placist anti-Africa discourse.

I have reported multiple examples of misrecognition and imprecision in lay interpretations of Ebola risk (e.g., all African refugees presumed to be high risk; travel into the poor, high immigrant area of Vickery Meadow seen as high risk by an affluent friend of an MS resident). Further, misrecognition is not simply the act (a failure) of the viewer, but a potentially active strategy by the viewed (i.e., long-time Dallas resident Africans hiding their accents at work). So while neighborhood residence may be a concealable stigma, Africanness was not so easily concealed. These acts and effects of misrecognition were compounded by the fact that only one neighborhood had disruptive police and media presence during the crisis, and only that neighborhood received editorial attention in the local major newspaper (as quoted above). These stigmatizing events were limited to VM residents or places, affirming research that finds stigma to variously take direct, structural, and internalized forms (Link and Phelan, 2014; Phelan et al., 2008), as well as contradictory and organic ones (Nations and Monte, 1996; Ramdas et al., 2016; Shuttleworth, 2004).

In diasporic settings, placism can easily mask other forms of prejudice that are not socially or politically palatable. Thus, in global infectious epidemics, placism may inspire - with the authority of epidemiological logics behind it - unwarranted prejudices. The new challenges posed by 21st century diasporic and super-diverse neighborhoods, such as refugee resettlement areas or Emergency Department catchment "communities", will not only test our geographic knowledge but our public health communication strategies. Evidence abounds that refugees and immigrants are often presumed contagious and dangerous by an authoritative body politic (Mason, 2012; Sargent and Larchanche, 2014; Zhan, 2005). In super-diverse cities like Dallas, we are even more likely to see refugees segregated into the shared housing of resettlement neighborhoods, or immigrants clustering into neighborhoods where they might enjoy shared cultural and linguistic ties (see e.g., Thomas, 2010, 2011). But during infectious disease outbreaks, these super-diverse places (and the continents from which their inhabitants come) will be most vulnerable to misrecognition. The ambiguities of place facilitate the placist discourse of epidemiology, making it a likely and powerful agent of prejudice, racism, and xenophobia. Most importantly, epidemiological placism offers a palatable substitute for these other, less defensible prejudices.

#### 7. Conclusion – placism and public health emergencies

The multiple levels and meanings of place operating in global/ local public health are a major challenge during infectious disease outbreaks. Increasingly, scholars have recognized the stigmatizing potential of institutional and ideological categories in these moments (e.g., Briggs, 2005; Lakoff, 2015, 2016). Research that does not adequately take into account the intersection of structural, personal, symbolic, and socially constructed sources of stigma runs the risk of "merely reproducing assumptions inherent to the social constructs" (Ford et al., 2007:212; see also, Plant and Rushworth, 1998). Epidemiological notions of place may be essential to prediction and tracking, but they are vulnerably imprecise for effective public health policy.

The coalescence of stigmatizing discourses of place surrounding an infectious disease reflects not just dangerous imprecisions of placism, but the entrenched and invisible assumptions of epidemiology for certain goals (Appadurai, 1988, 1995). If global public health initiatives can address placism as a relevant variable for epidemic response, it may improve the social applicability of public health preparedness (Lakoff, 2015, 2016). Placism will affect not only those affiliated with the stigmatized source of infection, but also many structural and social processes in that place - transportation to and from, the willingness of helpers to be present in, movement around and within, and outsiders' perceptions of that place. Anthropological voices have since the late 80's emphasized the multi-vocality (Rodman, 1992) and even mobility (Rosaldo, 1988) of place. More recently, Cummins et al. (2007) and Link and Phelan (2014) have called us to refine our attention to the multi-layered localities of place that influence health. And according to Kearns and Moon, community-based participatory models, knowledge and mobilization of social networks, and close understanding of the structures and places are neglected because they don't translate to the "neoliberal landscape of research" and "sellable" public health models (2002:618). So while public health initiatives must certainly be neighborhood-specific (Bailey et al., 2006; Luquero et al., 2011; Maas et al., 2007), any single level of specificity may not be enough for global infections in super-diverse settings, where people engage with multiple levels of relevant place on a frequent basis. As we face growing threats of trans-national infectious disease, placism is an authoritative source of potential stigma with critical implications for the success of public health messaging.

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