



**Title:** Epidemics and the Politics of Knowledge: Contested Narratives in Egypt's H1N1 Response

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**More details/abstract:** This article explores the politics of knowledge involved in understanding and responding to epidemics in an era of global health governance and biosecurity. It develops and applies an approach focused on how multiple, competing narratives about epidemics are constructed, mobilised and interact, and selectively justify pathways of intervention and response. A detailed ethnographic case study of national and local responses to H1N1 influenza, so-called 'swine flu', in Egypt reveals how global narratives were reworked by powerful actors in a particular political context, suppressing and delegitimizing the alternative narratives of the Zabaleen (Coptic Christian) people whose lives and livelihoods centred on raising pigs and working with them to control urban waste. The case study illustrates important ways in which geographies and politics of blame around epidemics emerge and are justified, their political contexts and consequences, and how they may feed back to shape the dynamics of disease itself.

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**Epidemics and the politics of knowledge:  
Contested narratives in Egypt's H1N1 response**

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Amidst a renewed round of global concern with infectious disease and its control, diseases that demonstrate the power or threaten to assume epidemic or pandemic proportions loom large. An epidemic can be defined as an increase in cases of disease – including but not confined to infectious disease - within a community or region over and above what would normally be expected during a particular time period. Recent global health policy – and associated public fears and media scares - are dominated by a preoccupation with so called ‘emerging’ or ‘re-emerging’ infectious diseases (Kickbusch 2003; Foresight, 2006; Saker et al 2004; Lee 2003), many of them zoonoses that ‘spill over’ from animals (Quammen 2012). The complete list of potential epidemic threats is long, ranging from highly infectious viral diseases such as Ebola, Marburg and Nipah, to multidrug-resistant tuberculosis and infections linked to growing worldwide antibiotic resistance. Central to policy and public concern is the development of a highly infectious and virulent form of human influenza that could cause a global pandemic potentially worse than that of 1918-1919 (WHO 2007: 45). These fears were highlighted around H5N1 ‘avian flu’ from 1997, H1N1 ‘swine flu’ from 2009, and in 2013, a major outbreak of H7N9 influenza in China.

Efforts to prepare for and respond to epidemics have always been steeped in controversy, whether explicit or concealed by the discourses and rhetorics of consensus deployed by powerful scientific, public health and political agencies. Contestation has turned on the characterization of the problem, why it matters and to whom; who is responsible for its cause, and what sort of action, by whom, should be taken. Just as colonial public health and epidemic control campaigns were framed and enacted in line with the political agendas of the time, often meeting resistance from local populations who framed the situation in quite different ways (e.g. Vaughan 1991; Manderson 1996), contestations amongst diverse scientists, policymakers and practitioners across global, national and local networks have occurred over the definition of and appropriate responses to more recent epidemics such as Ebola and HIV/AIDS (e.g. Hewlett and Hewlett 2008, Farmer 1992). Such cases often reveal geographies and politics of blame (Farmer 1992), with epidemics labelled in particular ways, accompanied by accusations and scapegoating often of a marginalized social group with dissonant perspectives and relatively little power to express them (Markell 2007:51; McNeill 2009).

In recent years, controversies and contestations around epidemics have been strongly shaped by the rise of discourses of ‘biosecurity’, ‘global health security’, and ‘global health governance’. Developing out of concerns with emerging diseases, bioterrorism, food safety and the implications of novel life sciences, these overlapping, unstable and contested terms (Lakoff and Collier 2008, Dry 2010) focus attention on the capacity of microbial threats to flow out of confined spaces and places (animals, farms, laboratories, nations) to create disorder in others (Bingham and Hinchliffe 2008). These discourses are

associated with new ways of problematizing and ‘securing’ populations against microbial threats (Lakoff and Collier 2008). Sensitivity to the threat of disease flowing across national borders in a world of globalized travel and trade, raised in the 1990s by Ebola and emphasized by the SARS epidemic in 2003, has led to the mobilization of large scientific and policy resources and infrastructures geared towards global health security, and actions which “minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries” (WHO 2007). These include the new International Health Regulations (IHR) established by the WHO in 2005, and related institutions and practices of global health governance and security (Fidler 2004, Elbe 2010). With these global security framings, new geographies of blame highlight diseases emerging ‘out of Africa’ and ‘out of Asia’ to threaten global (i.e. wealthy northern) populations. Accompanying regimes of intervention often focus on emergency response and control-at-source measures (Collier and Lakoff 2008).

In this article, we add to the growing literature on the contested articulation of global discourses and interventions around epidemics in an era of biosecurity concern, with located understandings and practices in national and local settings (e.g. Lakoff and Collier 2008, Herring and Swedlund 2010). This articulation often involves dissonance and contestation, subversion and resistance, as clear in recent accounts of (avian) influenza in diverse settings (e.g. Forster 2011, Kleinman et al. 2008, Scoones 2010). We focus on the politics of knowledge involved. By politics of knowledge, we refer to how particular knowledges and ways of knowing (epistemologies) are co-constructed with the political positions and interests of particular actors; and how – in contexts of politics and power – some knowledges are privileged and deployed while others are suppressed or dismissed. We understand knowledge as part of complex processes of embodiment and ‘biosocial differentiation’ in which lived entanglements of biologies, social relations, politics and culture are experienced, enacted and represented in multiple ways (Lock and Nguyen 2010: 2, see also Lock and Farquhar 2007). Our specific interest is how such differentiation becomes selectively politicized and mobilized, and what further forms of entanglement may result.

A focus on narratives and pathways provides a helpful analytical lens onto these processes. Narratives can be understood as stories about the world, with clear beginnings, middles and ends, constructed and drawn upon by particular actors and networks to frame phenomena and responses to them (Roe 1994). Building on recent applications of narrative analysis in relation to health and epidemics (e.g. Wald 2008, Dry and Leach 2010), we extend Briggs and Nichter’s (2009) notion of ‘biocommunicability’ and Briggs’ (2010) observation that epidemics are at least in part products of representation, to explore how dominant and competing accounts of epidemics circulate and interact. We address how narratives involve particular knowledge claims – how entanglements of biological, material and social processes are to be understood – and claims about others’ knowledge, legitimating some kinds of knowledge while dismissing others. While there is a risk of overplaying the coherence of a storyline, this approach avoids associating particular people and groups with static ‘worldviews’, and enables consideration of how particular narratives become interlocked or are co-produced with political and economic interests. Such an analysis of ‘narratives in action and interaction’ also moves beyond Foucauldian-inspired approaches that see disease control as part of governmentality or work as ‘anti-politics’ in Ferguson’s (1994) sense, where technical and bureaucratic meanings conceal, or ride roughshod over, political ones, while producing material effects. In such analysis, alternative accounts are silenced or given life only in a counter-politics of resistance. By focusing on contested narratives and the social and political processes and agendas shaping their interplay, we are able to highlight how geographies and politics of blame around epidemics emerge and are justified. Further, we show how certain narratives come to justify and drive pathways – trajectories of intervention and change which

interlock with ongoing social, material and disease dynamics (Dry and Leach 2010), while others remain marginalised.

We focus on the case of H1N1 'swine flu' in Egypt in 2009 – 2011. Following in the wake of Egypt's draconian response to avian influenza in 2006-7 (Bingham and Hinchliffe 2008), this illustrates how a particular interpretation of global security narratives around pandemic threat was deployed in a set of national and local narratives that justified a dramatic pig-culling operation. We examine the contested narratives of Egyptian officials, media portrayals, and the Zabaleen (Coptic Christian) population who, stigmatized and targeted in the pig cull, lost both livelihoods and their capacity to deal with Cairo's waste management, with devastating consequences for public health.

## METHODS

Primary and secondary data were collected by Tadros and colleagues in Egypt over a period of two years (2009-2011). In addition to general interviews among the Zabaleen, 15 in-depth case studies were undertaken in three largest waste collectors' communities in Cairo<sup>1</sup> by Ragaa Bakheet and Mansour Kedeis, two members of the focal Zabaleen communities. A purposive sample was taken in three settlements of waste collectors whose pigs were appropriated as part of the culling policy and who suffered severe livelihoods losses as a consequence. The three settlements were as follows. The first and the largest is Mansheyet Nasser (estimated to be around 30,000 persons). The second community, of around 7,000 persons, is based in Ard el Lewa, a haphazard squatter settlement sandwiched between Dokki and Mohandessein, two of the city's upper and upper middle class suburbs, and Bulaq el Dakrou, another squatter settlement. This community lies partly under Giza governorate, and partly 6<sup>th</sup> of October governorate. The third site was the waste collectors' community in Ezbet el Nakhl, a highly populated urban squatter and slum settlement, north of Cairo, and part of the Qalubiyya governorate.

Interviews were conducted with NGO leaders who have worked with the waste collectors' community for many years. They included Marie Assaad, a board member of the Association for the Protection of the Environment (APE), an NGO engaged in development interventions in the Zabaleen community; Leila Iskander, board member of the Association of Spirit of Youth and director of CD (the Centre for Development), an organization working in the Zabaleen community in Mansheyet Nasser; and Lilian Awad, a physician and development practitioner working in the APE's branch in another Zabaleen community, near Maadi.

A thorough review of Egyptian newspapers was undertaken from the moment in 2009 when H1N1 became identified as a national issue, up to the completion of the culling process in August 2011. This review provided us with a sense of the narratives of different actors, how they were construed, and developed across time. We also drew on secondary sources on the waste collectors' communities in Egypt, and background material collected by Tadros in prior engagements in waste collectors' communities since 1997. The information was updated in 2011 with further key informant interviews, including with the waste collectors who were injured in the attacks on the community in Muqattam in March 2011. The waste collectors' accounts were corroborated with other sources where possible. For example, their accounts of how the pigs were removed and inhumanely buried alive with acid poured on them was corroborated by a journalist's account and the film she uploaded on youtube of the entire process.<sup>2</sup> We analysed these interviews, documentary and media data to identify how the perspectives of different actors clustered into distinct narratives, to track the pathways of political and practical response they justified and to draw out their shifting interplay.

The H1N1 influenza virus is a novel strain of influenza that first emerged in Mexico and the United States. 'Swine flu' has proved to be a catchy but misleading nickname for the disease caused by a virus that contains a mixture of genes from humans, birds and pigs. The virus first appeared in March 2009 and spread globally. While it eventually proved to cause a relatively mild form of influenza, it infected large numbers of people and, by October 2009, had killed nearly 5000 worldwide.<sup>3</sup> In June 2009, the World Health Organization (WHO) declared a global pandemic of H1N1 as a result of sustained human-to-human transmission in multiple countries.

### **H1N1 outbreak narrative, government response**

From the start, much international media, policy and public debate conformed closely with what Wald has characterized as a global 'outbreak narrative' that "begins with the identification of an emerging infection, includes discussion of the global networks throughout which it travels, and chronicles the epidemiological work that ends with its containment" (Wald 2008: 2). With H1N1 feared as the latest pandemic with possibly devastating consequences, global health security concerns were voiced strongly by the WHO and other international agencies. Yet beyond this simple global outbreak narrative, from 2009 multiple framings and narratives about H1N1 and how to address it emerged within and between international agencies, governments and local communities. Here we focus on the particular ways that global narratives were picked up and (re) interpreted by the Egyptian government into a national narrative that legitimized a dramatic policy of pig culling, described in detail by Tadros (2010).

The Egyptian government's response to H1N1 had some striking similarities with its response to avian influenza three years earlier. Bingham and Hinchliffe (2008) suggest that the Egyptian government responded to cautions from the WHO and Food and Agriculture Organization of the need for preparedness with extreme measures well beyond the instructions of these international agencies. The Egyptian government's response, they argue, was driven by the dynamics of how the WHO/FAO warning was interpreted and engaged with by local elites. This is very similar to the Egyptian government's reaction to the H1N1 epidemic, which also went beyond an alignment with the WHO/FAO position to pursue local agendas that had little to do with health concerns .

Bingham and Hinchliffe argue that the Egyptian government's response to the WHO's warnings for the need for preparedness against avian flu was to assume a policy of mass culling, a policy that was unwarranted. Similarly, the response to H1N1 was also to announce a culling policy, which again was unnecessary. As with H1N1 in relation to the waste collectors, with avian flu the Egyptian government policy specifically targeted the livelihoods of poorer and more vulnerable citizens by focusing on people who raised poultry on their rooftops. Moreover, Bingham and Hinchliffe's description of the policy process of culling poultry, "led by teams of officials from the ministries of health, agriculture, and environment but enforced by the security forces" (2008:182), is very similar to the culling of pigs in response to H1N1. In essence, both sets of events encapsulate the mechanisms of policy implementation in a highly authoritarian political context. However, the Egyptian government's response to H1N1 departs markedly from that of avian flu with respect to the underlying ideological and socio-religious motives and narrative that drove the pathway of pig culling.

On April 24, 2009, the Global Alert and Response (GAR) unit of WHO, having confirmed 18 cases of infection, made explicit reference to 'swine influenza A/H1N1' (WHO 2009a in Forster 2012 ). By April 30, the term had been removed from WHO vocabulary and replaced with 'H1N1', with a qualifier that eating well cooked pork was not hazardous to human health. Yet as Forster observes, names stick:

“Having introduced ‘swine’ into the equation in its earliest announcements, WHO, even with coordinated action from the world’s other major human and animal health technical agencies, and considerable impetus from the US lobbying industry, had little effect on popular terminology” (Forster 2012:9). The term was to have particular consequences in regions where Muslim sensitivities towards pigs prevailed – yet neither the WHO regional office operating in the Middle East, nor others, developed a regional agenda to inform governments and the public about the nature of H1N1 until it was too late. The politically charged name stuck with political forces whose vested interests lay in annihilating pigs for ideological reasons (Tadros 2010).

In Egypt, the swine flu narrative interlocked with politically and religiously motivated narratives that stigmatized pigs and the Coptic Christian communities of Cairo, the Zabaleen, who raise them and use them in waste collection. As the H1N1 issue became the ‘pig issue’, so powerful government narratives and the policies they justified met a very different – already marginalized - narrative and set of practices amongst the Zabaleen. As the interactions between these narratives and practices unfolded, the outcomes included increased marginalization and injustice for the Zabaleen, and a series of new health problems in Cairo.

In early May 2009, the Egyptian government announced a plan to cull the nation’s estimated 300,000 pigs. This action was necessary, so the government’s narrative went, to control the spread of swine flu which had recently been declared a ‘public health emergency of international concern’ by the WHO. Culling the pigs, it was argued, was necessary to protect ‘national security’ against a global health threat - even though at this time no single case of H1N1 influenza had been confirmed in the country. The government insisted that these policy choices were founded upon objective, expert scientific knowledge. For example, an article in the pro-government daily newspaper *Al-Ahram* described pigs as ‘ticking bombs’ (Pigs...the ticking bomb, 2009), and quoted veterinarians saying that the potential blend of H5N1 (already widespread in Egypt) and H1N1 (if caught by pigs in Egypt) could result in a deadly new viral strain that might be passed to humans.

In Egypt’s Islamic and sectarian context, religious justifications were also central to the narrative. Scientific and religious claims were overtly linked, with ‘scientific arguments’ deployed to prove the soundness of the religious position on pigs. The undesirability of the pigs extended to three levels. First was the stigma of the pigs themselves: in Islam, the pig is seen as an unclean animal, and there are clear injunctions in the Koran prohibiting Muslims from breeding or eating pigs. Second was the religious undesirability of the social group raising the pigs, overwhelmingly members of the indigenous Coptic Christian minority, who number roughly 10% of the Egyptian population. Third was the social undesirability of a group, the Zabaleen, whose profession is associated with waste disposal. The government was keen to stress publicly that the pig-culling was non-sectarian, given that its announcements coincided with unprecedented debate and violence linked to sectarian issues. Yet the underlying Islamist-political motivation for the policy was made clear by several prominent commentators. For example, Ibrahim Issa, editor of prominent opposition newspaper *Al-Distour*, pointed to the coalition between the ruling party and the Muslim Brotherhood “in an Islamic campaign against the pigs” which he interpreted as a “humorous exaggeration in line with the religious hypocrisy prevailing in our lives in Egypt” (A very piggish affair, 2009). He argued that the hysterical, panic-stricken mood in the country – among politicians and publics alike – was disproportionate to the real threat of H1N1. It was, instead, because:

Muslims deliberately or spontaneously found this an opportunity to despise the Copts, since the pig is forbidden in the Muslim religion and a symbol of filth in populist thought: hence the Coptic

Christian was transformed into a source of infection (and harm) – since they come into contact with pigs and eat pork as opposed to Muslims... (A very piggish affair 2009).

In other words, the H1N1 threat became an excuse for scapegoating – or scapepigging – a social-religious group with a long history of political marginalisation.

International organizations openly criticized the government's pig culling decision and its claims to scientific logic. For instance, the chief veterinary officer of the FAO called pig culling "a real mistake. There is no reason to do that. It's not a swine influenza, it's a human influenza", adding that the FAO had been trying to reach Egyptian officials but had so far been unsuccessful (Stewart 2009). The reaction from the Egyptian Ministries of Health and Agriculture was to shift the narrative stance somewhat, by announcing that the culling was not a measure against H1N1 but a general health measure, given the unacceptable environmental conditions in which the pigs were bred. This view went along with what appeared as a sudden awakening to the existence of Zabaleen communities in the middle of Cairo.

In support of this narrative and associated culling, a deluge of articles in pro-government, oppositional and independent media vilified the pig (see Tadros 2010). The pig's physical and behavioral characteristics were a favourite subject for many writers, who described them as dirty disease carriers who thrived on rotten food or were just plain ugly. This obsession with the filthiness of the pig lasted long after the culling. Government officials also contributed to the vilification of the Zabaleen. For example, Minister of Health El Gebally advised on a series of measures to protect against H1N1 (such as hand-washing) that included "keeping away from pigs and *those who are in contact with them*" (Killing and not relocating 2009, emphasis added). The Zabaleen, it was argued, had formed powerful mafias who had earlier resisted relocation orders made by the government. Their concern for their livelihoods came at the expense of the welfare of Egyptians. Media coverage also focused on the squalor, smell and sight of humans living with animals and waste, as an affront to the city's modern image. Writers argued that the continued presence of Zabaleen settlements in the city constituted a health hazard, threatening an imminent plague:

When we [the writer and his family] saw the image of the Egyptian pigs on the satellite channels, we all screamed at the same time 'how disgusting'! The image of the pig is filthiness itself working in all of this rot: I have one question: do you need a presidential decree for swine flu to remove this filth from the middle of the city to any hell hole?' He asked officials: How did your conscience allow you to leave this rot to grow in the middle of the city, and in the heart of the residential area, being a source of infection to us all and our children? (The victory of the pigs over the Minister of Health 2009).

The use of the term 'ticking bomb' to refer to Zabaleen living conditions is reminiscent of the language used in the 1990s when the government and pro-government press suddenly 'discovered' the squatter settlements and shanty towns which were home to many of the Islamist militants who undertook terrorist operations. Then too, there was much descriptive focus on how 'those people' lived, and how this was 'unacceptable'. This discursive connection between the living conditions of a problematic socio-political group, and threats to 'national security', was invoked again with the sudden 'discovery' in 2009 that pigs and their raisers might transmit infection to the rest of the Egyptian population. There were cries for intervention by the Ministries of Health and Agriculture and the security forces to remove Zabaleen settlements (A national security issue 2009). Deeming H1N1 a national security issue elevated the pig issue to a level where disputing the logic of these claims and policies would be tantamount to an act of national treason. It also meant that the 'price' to be paid—up to 300,000

pigs—seemed inconsequential in comparison to a national cause (Kill the one whose religion you know 2009). The securitization of the issue gave it a sense of urgency akin to preparing for a war.

As the culling policy unfolded, it met a set of practices amongst Cairo's Zabaleen communities grounded in a very different narrative. This framed pigs not as a disease threat, but as vital to livelihoods and well being (interviews, Ard el Lewa, Muqattam and Ezbet el Nakhl, 2009). Drawing on experiential knowledge and informal expertise acquired and transmitted over generations, the Zabaleen have a long tradition of using pigs within waste collection and disposal that is the basis of their livelihoods, and over time have built up a complex set of recycling arrangements. Pigs consume the organic matter that is collected with waste, safely getting rid of it to leave remaining recyclable paper, tin and plastic matter, which people can extract and sell. (interviews, Ard el Lewa, Muqattam and Ezbet el Nakhl, 2009). The pigs, which consume daily the equivalent of their weight, enable the Zabaleen to deal with a large amount of waste in a cost-effective way (interview, woman waste-collector, 2009). Keeping pigs in backyards in close proximity to human dwellings is, within this narrative, the most logical and efficient way to deal with waste, enabling it to be sorted easily in the privacy of household settings. Whole whole families - including women who cannot participate in the collection of garbage from the public settings of residential households – can therefore be involved in the waste separation process.

H1N1 did not figure in the Zabaleen's narrative, although there was a persistent emphasis on declaring themselves 'free' of being the transmitters of disease. A common statement in interviews in all three sites (Ard el Lewa, Muqattam and Ezbet el Nakhl) in 2009 was "We are not diseased. We are clean and good people.". Another waste collector from Ezbet el Nakhl explained that "the health authorities took blood samples from us and it proved we were not carrying an infection." Rather, the Zabaleen interpreted the government's culling policy from within their experience as a minority group with a long history of marginalization; pig culling was the latest in a long line of government attempts to encroach upon them. Their accounts of how the cull unfolded reveal violent events and local resistance to them which went largely untold in the public accounts of the media and powerful political figures (interviews, Ard el Lewa, Muqattam and Ezbet el Nakhl 2009). Their narrative indicates a high level of trauma at the extent of suffering of the pigs that they had raised and lived with for so long. Lotfy William, a waste collector from Ezbet el Nazkhl, for example, recalls how the government dispensed with the pigs:

They lifted the pigs on trucks and they sprayed monoxide on them as the pigs squealed , then two of the men would hit the pigs with a heavy rod on their heads and then they took the pigs to a burial place and buried them alive and covered them quick lime [calcium oxide] (interview, Esbet el Nakhl 2009).

The scale of culling was immense. National and local security forces, accompanied by local council members and veterinarians from the Ministry of Agriculture, took control of the area, often advancing with large trucks and bulldozers to remove pigs and raze pigsties. They often stormed into houses. "They attacked us as if we were criminals" said one waste collector (interview, 2009). In Muqattam, the largest Zabaleen settlement in Cairo, the youth formed a human shield to prevent the authorities from entering the area, and tried individually to prevent them entering their pigsties. Confrontations with the police ensued, and tear gas and rubber bullets were used to disperse the youth. The entire area was cordoned off by security forces with military vehicles. The Zabaleen believe the heavy militarized security forces and arrests of youth were intended to intimidate anyone from opposing the authorities. Anwar Youssef, a waste collector from Ard el Lewa who inherited the trade of raising pigs from his grandfather, who had settled in Cairo in 1955, recounted how an initial reaction of disbelief turned into terror and hopelessness:



Every now and then the government threatens to kill our pigs and it passes so we didn't believe it was going to happen this time. When we saw on television how our families [i.e. other waste collectors] who protested in Muqattam were treated, we did not object and let them do whatever they wanted (Interview, Ard el Lewa, 2009).

Those who objected to the poor levels of compensation offered, or to the way forces barged into their homes, were threatened, beaten and sometimes arrested. The culling of the pigs went on for over two months. While the government claimed that the country became free from the animals, it is unclear whether this was so.

From the Zabaleen's perspective, the cull was an act of gross injustice: "What good is it to be given compensation when you have lost your livelihood?", many insisted (interviews, Ard e Lewa, Muqattam and Ezbet el Nakhl). Shahata Tamer from Ezbet el Nakhl, whose family owned 300 pigs, all culled, lamented: "My livelihood has come to an end. They have destroyed our homes and we have no source of income, 15 people from my family relied on the pigs for our living. All gone now."

Selling pork was only a marginal income-generating activity for most Zabaleen, to cover exceptional expenses such as marriage or illness. Day-to-day survival relied on their ability to extract and sell recyclable material. As a survival strategy, some Zabaleen started hurriedly to sort out waste in front of residential homes at dawn, taking away only the recyclable material and leaving the organic waste. This practice commenced in 2009 and has continued to the present. Yet men are not as experienced and efficient at sorting the waste as the women, who could no longer take part since they could not sort in the streets. Other Zabaleen turned to goats – although as selective feeders they are much less efficient than pigs. Others still have left the waste trade, put off by the increased stigmatization of their livelihoods. Zabaleen describe how, for instance, at the height of the swine flu scare, Cairo residents began to treat them like a disease, and would "throw their waste from the balconies or windows so we don't contaminate them" (interviews, Ard el Lewa and Ezbet el Nakhl 2009). Reda Faheem, one of the women involved in raising pigs in Ard el Lewa, described the level of dehumanization to which they were subjected at the peak of the H1N1 hysteria: "At the local health clinic, they refused to treat my nephew and said we are infected because we raise pigs....After a while they will kill us like the pigs."

The Zabaleen confidently predicted that the culling policy would bring a public health disaster (interviews in Ard el Lewa, Muqattam and Ezbet el Nakhl 2009). As one waste collector defiantly put it in response to people's avoidance of them as carriers of disease and to the loss of their livelihood, "Let them rot in their own waste." It was a curse that became a reality only a few months after the culling. Residents spoke of the rotting waste piling up in front of their apartment buildings; many observed growing numbers of rodents and snakes; doctors began to worry about risks of diarrhoeal diseases, rabies and other infections (interviews with Cairene residents, 2009, 2010). Compounded by the withdrawal of an Italian waste removal contractor after an administrative disagreement, by September 2009 15,000 tons of waste had piled up in Giza governorate alone (The crisis of Giza's garbage heightens 2009). The waste in front of schools, in alleys and public spaces had accumulated to such an extent that a parliamentary inquiry called for the army to clean up the city.

By 2012, there were reports that the waste management problems in Cairo had become so dire that people were resorting to secretly disposing of garbage at illegal dumping sites and in irrigation channels which provide water for agricultural produce (Zabaleen Sidelined by Morsi's clean homeland campaign, 2012). Mohamed Morsi, the first President to rule Egypt after the ousting of President Hosni Mubarak

(and who was later deposed himself in June 2013) had launched a 100 day clean up Egypt campaign when he first came to power in July 2012. The intention of the campaign was to address the problem of inefficient waste management in the country. Regrettably, the Zabaleen's expertise was not drawn on, and though officials pursued dialogue with them, it was inconceivable for a new leadership priding itself on being 'Islamic' would allow the Zabaleen to raise pigs again- even if it meant saving the country from the growing health and environmental hazards associated with inadequate collection and disposal of garbage. The campaign was later abandoned after it failed to bring about any visible results on the ground.

To date, the few open critiques of the pig-culling policy (e.g. Shall we go back to pigs? 2009) have been ignored, while the repressive zero-tolerance policy towards pigs within Cairo continues. No systemic, efficient alternative city-wide waste collection system has been found. Ironically, a policy and implementation pathway justified in the name of epidemic prevention and infectious disease control has generated an acute, collective health threat. It has also generated a large number of families whose livelihoods have been shattered and whose sense of marginalization is very strong. While many complex, context-specific factors have contributed to the unprecedented level of Christians' involvement in protests against sectarian violence, it is relevant that waste collectors were core groups in two of the largest Christian-led protests in 2011. While they were protesting acts of violence against churches in Cairo and Alexandria rather than in their own settlements, their show of solidarity was undoubtedly driven by their sense of persecution – a sense enhanced by the scape-pigging initiated by the government and supported by a large fraction of Egypt's population. Following the demise of the Mubarak regime in February 2011, members of the waste collectors' community in Muqattam were subject to acts of violence on March 8, 2011 for protesting against official laxity in addressing sectarian attacks against Christians in Egypt. The assault left 11 dead and 140 injured from the Muqattam waste collecting community (Kedeis, personal communication, March 10, 2011). Again, their narrative of the events that took place on the day of the assault were left out of mainstream reporting.

The case of H1N1 in Egypt illustrates starkly how narratives around epidemic threats interlock with broader processes of social and political stigmatization and marginalization, and how what are paraded as scientifically-justified disease control efforts can fulfil much broader political ends – in this case, subjugating a minority for political and religious reasons. The case also illustrates the discursive and material power of a narrative interlocked with the interests and positions of powerful political and religious elites. A powerful response pathway has unfolded. In this context, contestation and conflict with alternative narratives – such as those of the Zabaleen – has remained confined to private and underreported clashes, albeit often violent ones. In turn, this powerful narrative and pathway not only failed to control a (non-existent) pig disease, but precipitated new health hazards.

## CONCLUSIONS

As a technical term, 'epidemic' can erase the diversity of accounts of those who suffer from, seek to control, or otherwise become involved in epidemics and attempts to respond to them, including by suffering the effects of others' control efforts (Herring and Svedlund 2010: 4). By documenting the variety of narratives – dominant and alternative – around H1N1 in Egypt, in this article we have contributed to a growing body of medical anthropological and wider scholarship that seeks to reveal and authorize the diversity of experience around epidemics and pandemic threats. By revealing and putting into circulation previously silenced accounts, documenting the experiences and perspectives of those marginalized and stigmatized by dominant forms of epidemic understanding and response, we contribute to the growing move to approach epidemics from a social justice perspective (Calain 2009). The case of H1N1 in Egypt –

and the profound injustice experienced by the Zabaleen - offers a stark example of why such an approach is needed.

Using this case, we have illustrated the rising power of global outbreak narratives in the epidemics and health field, supported mutually by concerns with global health governance and biosecurity (Wald 2008, Lakoff and Collier 2008). H1N1 influenza is represented as an infectious disease that emerges usually from a poor, marginal place and threatens to spread globally with devastating consequences, justifying draconian interventions to control the outbreak at source. In this case, H1N1 was represented as a pandemic and global security threat, justifying massive global response including the large-scale mobilization of vaccines and anti-virals. This was eventually contested at the highest levels, with the WHO challenged and forced to justify its position (Forster 2012).

The operation of such global outbreak narratives is evident around many other diseases, from SARS (Fidler 2004) and Ebola (Hewlett and Hewlett 2008), HIV/AIDS (Edstrom 2010), multidrug-resistant TB (Nightingale 2010), and more. In all cases, albeit in subtly different ways, such global narratives draw on and reproduce power-laden inequalities across class and geography, in which people often labelled as poor and backward are blamed for the origin of diseases that come to threaten those who are wealthy and civilized. While such inequalities are long-established, and were evident in discourses and practices around colonial health, arguably the contemporary power of global health and its securitization has given them new guises and renewed force.

In the process of constructing 'the global', 'the local' also takes on new oppositional force – usually as the bio-social origin of epidemic problems, but sometimes as a fount of local resistance or wisdom (Dry and Leach 2010). This in turn informs arguments – made by anthropologists, local health practitioners and others – that 'rescuing' the experiences and perspectives of those marginalized by powerful global narratives and response pathways offers an important basis on which alternative pathways - and more effective epidemic responses - might be built. The H1N1 Egypt case supports this argument in some respects; it certainly suggests that the experiences of the Zabaleen in pig-raising and waste control offer perspectives and experiences that those seeking to secure public health in Cairo ignore at their peril. In contrast with the subjugation and repression of local knowledges illustrated in this case, evidence from other diseases and settings shows that international agencies have sometimes come to appreciate local disease understandings and experiences and to incorporate them into epidemic control strategies, in ways that improved both effectiveness in the terms of public health, and social justice as framed and valued by local people (e.g. Hewlett and Hewlett 2008).

Yet in this case, we also illustrate the need to go beyond oppositional discourses of global and local, to identify the complex processes through which actors and narratives interact across scales, selectively mobilizing representations of local, national and global processes. We emphasize, too, the significance of national political contexts and histories in shaping these narrative interactions. Just as the flu narratives of government actors in Egypt, evoking national security and Islamic purity, cannot be separated from broader processes and discourses of Islamic state-building, so the narratives of the Zabaleen about pig-culling were deeply informed by their perspectives on the politics and history of their marginalization.

Narratives and pathways, we have suggested, provide a valuable analytical window onto the politics of knowledge. They help to reveal how ways of understanding and experiencing the complex entanglements of biology and bodies, viral, animal and human, with material, social and political processes are constructed, negotiated and contested. And these concepts, together, help distinguish how

some forms of knowledge become manifested in powerful forms of intervention and change, while others remain marginalised, delegitimated or obscured. Such an analytic builds on but moves beyond longstanding traditions of work in medical anthropology that appreciate plural knowledges and their wider political dimensions (Janzen, 1982, Kleinman, 1988; Johannessen and Lazar, 2006, Williams and Calnan, 1996; Leach and Fairhead, 2007; Rose, 2006). That there exist contrasting ways of understanding and representing epidemics, associated with different actors, has also been documented – with some work attending to the contrast between scientific/medical and local perspectives, and the roles of anthropologists’ accounts in mediating between them – whether in relation to Kuru in the mid twentieth century (Lindenbaum 2010) or Ebola in the 1990s (Hewlett and Hewlett 2008). As Adams (2010: 40) puts it, “Health can sometimes become a mechanism of politics by embedding itself in the world of science, and by distinguishing itself from its comparative counterparts: non-science and nonsense.” As Adams argues further, this process has acquired particular forms and power during the last decade through the rise of ‘global health’ and global health sciences, producing novel forms of knowledge politics in national and local settings. Yet much of this work stops short at identifying competing worldviews and their social and political origins; their implications for action are more rarely spelled out. In contrast we have examined how certain knowledge claims and narratives come to inform and justify pathways of intervention - in the name, at least, of responding to and attempting to control epidemics.

The case of H1N1 powerfully illustrates the interlocking of epidemic narratives with processes of blaming and scape-goating. Scapegoating, most often a marginalized social group with little or no power (Markell, 2007:51; McNeill, 2009), is not unusual. However as the H1N1 case shows, blame for an epidemic may also reinforce stigma and justify repressive action that also has quite different, though possibly long-standing, social and political motivations.

Finally, we have shown how intervention pathways – justified by particular narratives - become entangled in biological-social-political processes, altering their course and manifestations. These may affect the way that disease dynamics themselves develop, creating new threats in their wake; the public health horrors of Cairo’s waste crisis offer a stark example. In this respect, the Egyptian H1N1 case illustrates powerfully how global outbreak narratives and associated pathways can, as they meet particular biological-social-political realities, fail even in their relatively narrow, instrumental aims of controlling a disease. Opening up attention to a wider diversity of narratives about epidemics, why they matter and to whom, thus offers valuable ways forward. Making explicit such narratives, interrogating more carefully the forms of bio-social differentiation that they implicate, and encouraging deliberation between them, offers potential for more building more effective pathways of response to epidemics, and for linking such responses more effectively to social justice.

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## ENDNOTES

<sup>1</sup> In Cairo, there are nine Zabaleen settlements. In addition to Mansheyet Nasser, Ard el Lewa and Ezbet el Nakhl, these are Torah el Maadi, Helwan, El Barageel, Wadi el Giza, Batn el baqqara, and Qattamiyya.

<sup>2</sup> <http://www.youtube.com/watch?v=jwMIlw7rCSc> most recently accessed on 10<sup>th</sup> October 2012.

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<sup>3</sup> WHO Pandemic H1N1 (2009) update 71, week of October 17.