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The macrosecuritization of antimicrobial resistance in Asia

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ABSTRACT

This article has two objectives. Drawing on the framework provided by macrosecuritization, this article first explores global responses to AMR. Secondly, in shifting the analytical lens to Asia, the article then evaluates how successful this process has been in a regional context. Considering the two objectives, two inter-related arguments are proposed. First, even though AMR can be considered a quintessential and successful macrosecuritization case at the global level, within Asia the operationalisation of AMR strategies is limited by power and resource politics within the states. Second, the anthropocentric nature of health security is limited when it comes to address the threat posed by AMR. Overcoming this limitation requires a One Health approach. However, the successful articulation of this approach has proven challenging in Asia where middle-level actors pull away from the process in pursuit of other agendas. As a result, while macrosecuritization provides a useful tool for understanding how AMR and similar health threats are addressed, it is necessary to understand the local realities within which the process is embedded.

KEYWORDS

Macrosecuritization; antimicrobial resistance (AMR); health security; one health; Asia

Introduction

Antimicrobial resistance (AMR) is the latest health threat to be recognised as an existential threat to humanity. Although the threat posed by resistance to antibiotics is almost as old as their use, it is only now that the threat posed by AMR has received global attention. Unlike other recently emergent diseases (H1N1, H5N1, SARS, MERS Co-V, and Zika), all of which originated in a certain country, AMR is a truly global threat Utt and Wells (2016, 179). succinctly summed up the scope of the threat, stating that ‘The problem is so serious that it threatens the achievements of modern medicine and a post-antibiotic era—in which common infections and minor injuries can kill—is a very real possibility for this century.’ The discovery of the superbugs, including the New Delhi metallo- β -lactamase (NDM-1) gene in India in 2008 and mobilised colistin resistance (MCR-1) gene in China 2015, has further prompted the sense of urgency to address AMR. It is believed that the two genes would accelerate the world ushering in ‘the doomsday scenario of a world without antibiotics,’ for NDM-1 causes the bacterium to produce an enzyme that

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neutralises the activities of antibiotics (Bulletin of the World Health Organization 2010), whereas MCR-1 provides bacteria with resistance to colistin (i.e. a last-line antibiotic). Since then, AMR has not only become a widely accepted threat to all humankind, but also set in motion some proactive responses at international and state levels: at the 68th World Health Assembly (WHA) in May 2015, the WHA endorsed a global action plan to tackle AMR. The 2015 global action plan provided the framework for member states to formulate its national action plan to combat AMR at the state level within two years of the endorsement of the global action plan. The global action plan, in particular, highlighted the need of multi-sectoral responses across health and non-health actors, including physicians, veterinarians, wildlife specialists, environmentalists, anthropologists, economists, and sociologists. Owing to its global nature, the mutual inclusiveness of animal, food, and environmental security agendas, as well as its widespread acceptance, it can be argued that AMR is an example of the macrosecuritization of a health insecurity.

That said, the applicability of AMR macrosecuritization is questionable in the Asian context. This conclusion is drawn from data collected from fieldwork across the region. During the 2016–17 academic year, in-person interviews were conducted in seven Asian countries, including Beijing, Hangzhou, Guangdong province (China), Hanoi (Vietnam), Manila (The Philippines), Bangkok (Thailand), New Delhi (India), Jakarta (Indonesia), and also Singapore to examine the current state of AMR national policies and their application. In the initial interviews, we met with leading microbiologists, infectious disease specialists and epidemiologists, the CDC, key research laboratories, local universities, as well as representatives from international health agencies in these selected countries. These interviews were supplemented with a second series of interviews with representatives from international health organizations (IHOs) based in Geneva and Washington D.C. that have engaged in AMR responses in the region.¹ If this finding is correct, then it not only has theoretical ramifications, it also suggests that the efficacy of global efforts to address this threat will be less than hoped for.

This article is comprised of four sections. First, it begins with the discussion of the theoretical framework of securitisation and macrosecuritization. Second, it draws upon the three dimensions of macrosecuritization to demonstrate that AMR has been successfully macrosecuritized at the global level, although the scope of such macrosecuritization remains debated. Third, it links the macrosecuritization approach with that of One Health, highlighting how the parallel structures in both approaches provide a pathway for addressing AMR. Fourth, applying these theoretical and policy logics to the Asian case, it will be shown how unanticipated outcomes in regional countries limit the utility of the theory; even as its capability to inform health insecurity mitigation policies remains.

From securitization to macrosecuritization

Developed by the Copenhagen School of Barry Buzan, Ole Wæver, and Jaap de Wilde, securitisation is a theoretical framework describing the threat-framing process and the corresponding political reactions to block the adverse development of the perceived threat. A successful securitisation is determined by three criteria: discourses uttered by securitising actors declaring a particular issue as an existential threat to the survival of the referent object (speech acts); acceptance by the targeted audience convinced of its potential to be an existential threat (audience acceptance); and also redirections of existing

financial resources, new policies, or practices (emergency measures) are implemented to address the issue following the security-threat claim (Buzan, Wæver, and de Wilde 1998). Given the self-referential definition of security, the scope of security agenda can be widened to issues other than traditional military problems, whereas the referents of security can be deepened from state to individual levels. Such theoretical strength has helped securitisation to be one of the most influential theories developed in the field of security studies. The theory has provided a security perspective in looking into an array of non-traditional security (NTS) issues, ranging from environmental security (Floyd 2010; Schäfer, Scheffran, and Penniket 2015) to migration (Diez and Squire 2008; Trombetta 2014) to organised crime (Emmers 2003) to drug and human trafficking (Jackson 2006) to Terrorism (Salter 2011) to cyber security (Hansen and Nissenbaum 2009; Lacy and Prince 2018) to infectious diseases (Curley and Herington 2011; Elbe 2010; Lo and Thomas 2010; Lo 2015, 2018; McInnes and Rushton 2013; Wishnick 2010).²

Despite being widely adopted in the research agenda of security studies, securitisation theory is not without conceptual and methodological weaknesses. The major inadequacies include the over-emphasis of verbal forms of speech acts (Möller 2007; Williams 2003), the lack of operationalisation of ‘emergency measures’ (Caballero-Anthony and Emmers 2006), the neglect of the role of audience (Balzacq 2005), together with the Eurocentric nature of its research agenda (Vuori 2008; Wilkinson 2007). Acknowledging the aforementioned shortcomings of securitisation theory, Buzan and Wæver (2009) highlight an inadequacy of these previous studies: much of the literature on securitisation has focused on the middle-level securitizations. In other words, most securitizations take place in the state and individual levels. The theorists believe that such a vibrant agenda at the middle level is attributed to the simplicity of identifying the referent objects in the securitisation process. While the previous middle-level security studies are of great importance to enrich the research agenda of ‘niche’ securitizations,³ what is still missing though is the discussion of ‘what happens above the middle-level securitization.’

In filling this theoretical and empirical gap of securitisation theory Buzan and Wæver promulgated the concept of *macrosecuritization*. Macrosecuritization, according to Buzan and Wæver (2009, 257), is an ‘overarching securitization that relates, organizes and possibly subsumes a host of other middle-level securitizations.’ In terms of the relationship between macrosecuritization and its corresponding middle-level securitizations, Buzan and Wæver claimed that the strongest form of macrosecuritization, such as the Cold War, ‘will impose a hierarchy on the lower level ones incorporated within them,’ the less powerful ones, such as the Global War on Terror (GWOt), will simply to “bundle other securitizations together without outranking them” (Ibid). The relationship between macrosecuritization and middle-level securitizations is however not necessarily peaceful. The structure is vulnerable to dissolution not just by the desecuritization of the macro-level threat (or referent object) but also by the middle-level securitizations becoming disaffected with, or pulling away from, subordination to the higher level one (Ibid). Owing to its large-scale, intricate, and relatively unstable structure, macrosecuritizations have only been identified in a few cases: the Cold War (Buzan and Wæver 2009), piracy (Bueger and Stockbruegger 2013) and the GWOt (Romaniuk and Webb 2015). However, we would add AMR as another case of macrosecuritization, based on the extent to which AMR responses fulfil the basic format of macrosecuritization and has been securitised at the global level; albeit somewhat imperfectly. With reference to Asia, we also discuss the conflict between the middle-level

securitisation policy logics and actors; especially between the health and animal sectors, threatens the durability of macrosecritization in longer term.

The macrosecritization of AMR

Modern antibiotics were initially used on a large scale on the battlefields of World War 2 to treat injured soldiers. With the legacies of World War 1 diseases still fresh in the minds of military planners, the need to control infections was swiftly prioritised. Soon after the end of the War a new purpose for antibiotics was discovered, that of promoting growth in livestock. In an era of rationing, the need to produce enough meat for people's diets was pressing. What was not fully understood by governments at the time—despite early warnings from scientists and doctors—was that the widespread use of antibiotics coupled with an imperfect understanding of how and when the drugs should be used quickly led to the emergence of penicillin-resistant strains. By the 1960s, there was significant resistance to penicillin in humans (Lowy 2003) and cases emerging in the United Kingdom and the United States of antibiotic resistance in animals (Anderson 1968). More critically, cases had begun to be documented of resistant strains crossing over between animals and humans (Pocurull and Mercer 1971). Despite this emerging threat, the belief that new antibiotics could always be developed as alternates when resistance emerged coupled with the perceived economic benefits for domestic and international trade in livestock meant that this issue went unaddressed.

By the 1990s, the global health landscape had begun to change. Most critically, contrary to popular hopes, there were no new classes of antibiotics emerging. This meant that resistance was only growing—not just against single types of antibiotics but multiple drug resistant strains had emerged. At the same time, poor policy oversight had allowed antibiotic usage in livestock to expand to include so-called last-line antibiotics. The ability of AMR to cross-over between humans and animals created a multiplier effect whereby people could be exposed to resistant strains simply by eating food. Animals could be exposed to resistance through interactions with humans. Both humans and animals had also become sources of infection into local ecosystems as well.

The length of time that the threat posed by AMR has gone unaddressed has created a three-pronged challenge for global health security: (1) there is no origin country or index case to which the current threat can be traced back; (2) resistance to antibiotics occurs in as many ways as there are types of antibiotics and usage patterns in and among humans and animals; and (3) the nature of AMR for both humans and the food chain means that a singular solution is not feasible. Instead, solutions lie at the intersection of all affected populations and policy sectors. However, unlike other health insecurities, the long gestation of AMR means that securitising the threat has proved problematic.

Since the 1940s, the world has globalised. The states and populations that have benefited from access to antibiotics and improved livestock yields have similarly expanded; especially in Asia. No longer is antibiotic usage a developed world issue, and neither is antibiotic resistance. The increase in the number of actors who benefit from antibiotics has created a counter-threat narrative that when coupled with the gradual emergence of the threat has resulted in a slower than usual securitisation response (when compared with SARS, H5N1, or H1N1, for example). Equally, the globalised nature of

the threat means that a single country cannot address AMR unilaterally. What is required is a global response that draws together all states and all sectors. In other words, a macrosecuritization.

In determining if an issue has been macrosecritized, Buzan and Wæver (2009, 258) identify three dimensions. The first dimension is the level of analysis. Given the five levels (i.e. 'Individual,' 'Group,' 'Unit Level,' 'Civilizational,' 'System Level,' and 'Global') of the referent object in a securitisation, a successful case of macrosecritization should occur at the global level (Ibid). The second dimension is the degree of comprehensiveness of a securitisation. Does the securitisation cover only one specific sector/issue (a 'niche' securitisation) or does it encompass multiple sectors/issues (an 'inclusive' securitisation)? The third dimension is the degree of success the process encounters in convincing proportions of the relevant audience. In other words, 'How well has the securitization been accepted?' The first two dimensions determine whether an issue is a macrosecritization, while the third dimension determines whether the macrosecritization is a powerful one (Ibid). In reviewing responses with the first two dimensions, we will now show that AMR has been macrosecritized; although the success of this effort remains debatable.

Level of analysis

AMR is undoubtedly a global threat that aggregates several pre-existing insecurities. On the one hand, the lack of new drugs coupled with over-prescribing has led to bacteria becoming increasingly resistant to modern medicines in the past two decades. Until the late 1980s, the problem was not considered significant as new antibiotics were launched once an existing drug became inefficient. The development of new classes of antibiotics has, however, declined with only two new classes of antibiotics introduced since 1968 (Höjgård 2012). Pharmaceutical companies are reluctant to develop new antibiotics because of higher cost of research and shorter effective life span. Bringing a new drug to market requires an average investment of US\$800 million over 10 years, but most antibiotic treatments are administered in the short-term and then discontinued (Ibid). On the other hand, the overuse of antibiotics in nosocomial settings and livestock production—for therapeutic and prophylactic purposes—has been directly linked to the rampant spread of AMR around the globe. Currently, 70 percent of known bacteria have developed resistance to one or more antibiotics (Merrett 2013). Certain strains of the bacterium, *Enterococcus faecium*, are resistant to over 100 antibiotics produced to date (Shnayerson and Plotkin 2002).

Globalisation has compounded the magnitude of the latter issue. The AMR threat attributing to the usage of antibiotics in humans and animals in the local and state levels have been transcended in the global level by the negative effect of globalisation. As Pappas, Hyder, and Akhter (2003, 92) noted that 'Owing to the ease of rapid international travel, emerging and drug-resistant infectious diseases in one country represent a threat to the health and economies of all countries.' In other words, a resistant strain carried by one person can reach anywhere else in the world within 24 h. More importantly, people can become asymptotically colonised with resistant pathogens after international travel, leading to an unintended spread of the drug-resistant microbes (Barlam and Gupta 2015). To date, resistant pathogens cause about 700,000 deaths every year. If the world fails to take the necessary action, it is estimated that 10 million people, more

than who presently die from cancer, will be killed annually by 2050 (O'Neill 2016). Given that the problem takes the physical fate of humankind as the referent object, humanity writ large is threatened by AMR. Hence, according to Buzan and Wæver's categorisation of universalism (2009, 261), AMR represents the fourth type of universalism: 'dangers that threaten humankind on a planetary scale.'⁴

As previously mentioned, macrosecuritizations, as with other securitizations, require securitising actors, appropriate speech acts, and responsive audiences. The same applies for macrosecuritization, except that it operates on a higher scale in terms of level of analysis and encompasses parallel security agendas. Regarding the securitising actors of a macrosecuritization, they should be influential, in terms of discursive, diplomatic, economic, or military power, in the international arena. In the case of AMR, while the World Health Organizations (WHO) is the *de facto* securitising actor in the health security realm, other new actors such as Food Agricultural Organization (FAO), World Organization for Animal Health (OIE), UK and US medical officers and politicians can also act as securitising actors at the global level (This point is further illustrated below).

Given that the referent objects of AMR are at global level, speech acts put forth by securitising actors should 'speak either in defense of, or against, a universalist vision, or articulate the danger from some common threat,' in order to gain the acceptance of the respective international audiences (Buzan and Wæver 2009, 268). In the case of AMR, watchwords like 'survival of humankind,' 'the dark ages of medicine,' 'antibiotic apocalypse' are highly relevant not just to developing countries but also to developed ones. Speech acts related to the global existential threat universalism posed by AMR is exemplified by the 2011 Annual Report by UK's Chief Medical Officer, Professor Dame Sally Davies, which stated that,

Antimicrobial resistance is a ticking time bomb not only for the UK but also **for the world**. We need to work with everyone to ensure the **apocalyptic scenario** of widespread antimicrobial resistance does not become a reality. This is a **threat arguably as important as climate change for the world**. (Davies 2013, emphasis added)

The President of the United Nations General Assembly likewise declared in 2016 that, 'Ultimately, the **future of humanity** will depend on our ability to respond to the challenge of antimicrobial resistance' (General Assembly of the United Nations 2016, emphasis added).

Degree of comprehensiveness

In terms of the degree of comprehensiveness, AMR is an inclusive securitisation as it draws upon securitisation logics in the wider health, food, and environment sectors. Unlike many other health challenges (i.e. HIV/AIDS, tuberculosis, malaria), AMR adversely affects animal health as well as human health, both of which are also linked with environmental health. To illustrate the connection, for example, the misuse and overuse of antibiotics in hospital settings and animal farms lead to an upsurge of drug resistance. The disposal of inadequately treated human and animal waste containing drug-resistant bacteria into the environment facilitates the spread of resistant microbes and resistance genetic material within and across the human, animal and environmental sectors. The impacts arising from AMR therefore challenge the conventional biomedical conception of health, paving way for an integrated or One Health approach to address AMR threats.

One Health is a new term with ancient roots (Kahn 2016). Introduced by the Wildlife Conservation Society (WCS) in 2004, the term ‘One Health’ is used in many different contexts and by people with various backgrounds, the core concept is nevertheless unequivocal and unquestionable: the health of people is connected to the health of animals and the environment. As such, One Health is a natural policy umbrella under which the macrosecuritization of AMR can be advanced. Its level is that of a global policy, designed to ensure greater health security, particularly in the areas of ‘food safety, the control of zoonoses ... and combatting antibiotic resistance’ (World Health Organization 2017). In doing so, One Health meets the test for comprehensives as it draws in ‘public health, animal health, plant health, and the environment’ actors (Ibid). As Lebov *et al.* (2017, 45) succinctly observed, by ‘looking at multiple dimensions of a problem ... researchers may discover influencing factors that they would not have otherwise seen, which can facilitate more informed intervention design.’

The notion of the interconnectedness of human, animal, plant and environmental health is observed in the public statements delivered by the Directors-General of the WHO, FAO, and OIE (UN News 2016, emphasis added), stating, ‘Antimicrobial resistance poses a fundamental threat to human health, development, and security. The commitments made today must now be translated into swift, effective, **lifesaving actions across the human, animal and environmental health sectors**’ [Dr. Margaret Chan, former Director-General of WHO]; ‘AMR is a problem **not just in our hospitals, but on our farms and in our food, too. Agriculture must shoulder its share of responsibility**’ [Dr. José Graziano da Silva, Director-General of FAO]; and also ‘Effective and accessible antibiotics are as vital for protecting **animal health and welfare and good veterinary medicine as they are for human health**’ [Dr. Monique Eloit, Director-General of OIE]. This policy convergence on the threat posed by AMR highlights the benefits of a macrosecuritization approach: not only does it structurally and discursively support what needs to happen, but it does so by equalising the four primary input sectors. This is a necessary shift in anti-AMR strategies as—absent such an approach—AMR responses default back to being perceived as a public health issue.

Degree of audience acceptance

Considering the degree of success in convincing audiences to accept AMR as a global threat, it is curious that the macrosecuritization efforts were less successful prior to 2010. Despite the fact that the WHO Member States recognised AMR as an emerging public health challenge in a 1998 WHA resolution, the rhetorical claim did not bring about a global shift to an emergency response mode. In 2000, the WHO clearly shift towards identifying AMR as a global existential threat with its report entitled *Overcoming Antimicrobial Resistance*, in which it warned of the perils of a post-antibiotic future. The report described how major infectious diseases—including tuberculosis, malaria, HIV/AIDS, pneumonia, and diarrheal diseases—were slowly becoming resistant to existing drugs (Kmietowicz 2000). In addition to the 2000 report, former WHO director-general Dr. Gro Harlem Brundtland called the rise of AMR a global crisis. However, the bioterrorism attacks after the September 11 overshadowed the 2000 discourses and the subsequent release of the *WHO Global Strategy for Containment of Antimicrobial Resistance* and its related campaigns in 2001 (Bulletin of the World Health Organization 2000). Without

gaining enough political and social resonance, these earlier rhetorical declarations failed to gain sufficient audience support and lead to emergency policy responses.

As the challenge posed by AMR has risen in the public discourse and the threat posed by bioterrorism recedes, governments and other actors have again sought to revisit the threat discourse previously put forward by the WHO. In a 2010 testimony before the US House Committee on Energy and Commerce Subcommittee on Health, Dr. Spellman from the Infectious Disease Society of America stated, ‘Antibiotic resistance is a serious public health, patient care and safety, and national security issue’ (Spellberg 2010). Other state and non-state actors around the world have similarly accepted the declaration of AMR as a threat. The science ministers attending the G8 Summit in 2013 identified AMR as the ‘major health security challenge of the twenty-first century’ (Huttner *et al.* 2013). The World Economic Forum’s Global Risks 2014 Report similarly identified ‘the impact and the probability of AMR were deemed as high as terrorism or climate change’ (World Economic Forum 2014). The strongest evidence of a collective acceptance is observed when the WHA endorsed a *Global Action Plan on Antimicrobial Resistance* in 2015, urging for countries to collaborate to slow down AMR and avoid a post-antibiotic era. Member States were also required to formulate and submit national action plans on AMR by 2017.

However, the renewed vigour towards AMR at the global level and from the world’s leading economies is less well-observed in developing or lesser-developed countries. Here the priority of addressing AMR is relatively lower despite the threat posed due to the greater priority afforded other health insecurities, such as the need to treat malaria or cholera, or gain access to effective and affordable antibiotics (Laxminarayan and Chaudhury 2016). As such, the macrosecuritization of AMR is weakened when countries are simultaneously facing other pressing middle-level securitizations. The decision by these states to accept the securitisation logic thus suggests an underlying motivation beyond addressing the existential threat. Interview responses in multiple countries suggested that such motivations ranged from a willingness to be perceived as a good international actor to using the policy to enforce other health-related agendas to seeking to gain access to additional resources (financial, medical, or technical), or a mix of these.

Below the state level, the threat identification of AMR can have a contra-effect. While the use of security threat language serves as a call to immediate action, the domestic audience can respond to this move fatalistically, perceiving any action will either come too late and/or be ineffective, so there is no point in changing their behaviours or practices (Viens and Littmann 2015). In addition to the usage of security language, the temporal effect of the AMR macrosecuritization likewise influences the level of audience acceptance. Drawing on the ‘burn-out’ effect of HIV/AIDS securitisation in recent years (Lo 2015), in the longer-term the audience can become desensitised to the threat posed by AMR problems and no longer be willing to commit to its resolution.

One health, AMR, and Asia

The origin of the concept of health security is found in the Constitution of the WHO in 1946, wherein it states that ‘The **health of all peoples** is fundamental to the attainment of peace and **security**’ (World Health Organization 1946, emphasis added). The health-

security linkage was, however, left largely unsecuritized until publication of the United Nations Development Program's (UNDP) *Human Development Report* in 1994. The confluence of global securitising logics from these two sources meant that health security was conceptually anthropocentric, privileging human over non-human health.

In the case of AMR, the existing anthropocentric health security is problematic because the concept ignores the fact that AMR emerges—and is reinforced from—human and non-human sources, which is then exacerbated by environmental or vegetative factors. On the one hand, drug resistance arises through the misuse of medicines by humans Thomas and Depledge (2015, 82). suggest that such misuse can occur in a variety of ways: 'polypharmacy, over- and unnecessary use of medicines (particularly antibiotics), prescribing outside of clinical guidelines and inappropriate self-medication and non-adherence to prescribed regimens by patients.' On the other hand, antimicrobials are administered to livestock animals worldwide to treat and prevent infections as well as to serve as growth promoter to cater for the increasing demand of protein-based dietary in developing countries. The environment where these treatments is provided is subsequently contaminated when untreated drug-resistant bacteria and genes are discharged via hospital and farm sewage systems. In this respect, human origins of AMR are only one part of a wider array of threat sources. As such, the macrosecuritization of AMR necessitates a comprehensive response that incorporates multiple sectors but the human-centric legacy of health security (and the parallel sidelining on non-human focused sectors) creates a policy tension that needs to be overcome.

By 2017, most regional states had submitted their national AMR responses plans to the WHO. These plans inter alia included an overview of the current situation, current and new policies to deal with the threat posed by AMR, timeframes for the implementation of new programs, as well as evaluative and/or monitoring mechanisms. Within these countries, the formulation of the National Action Plans had required a higher degree of inter-ministry and bureau cooperation. By these measures, it would be possible to conclude that there was a successful macrosecuritization effort: a global level threat and response, a comprehensive degree of actor inclusion, and audience acceptance (in these cases, the regional governments and their component bureaucracies). However, in interrogating the underlying dynamics of this process, a very different conclusion emerges; one where—at an operational level—AMR policies remain human-centric, dominated by politics and access to resource issues. At a theoretical level, the prioritisation struggle between AMR and other prevalent health insecurities further raises the question as to what extent AMR—while potentially serious—is considered an existential threat to regional states and societies. As noted earlier, problems for audience acceptance can feedback into both the degree of comprehensiveness and the success of macrosecuritization.

In all the regional countries where we conducted interviews as well as in Geneva, it was striking how structural divisions at the global level were subsequently replicated at the state level. Before exploring the replication, it is necessary to first examine the global level. As noted above, the three main IHOs (the WHO, FAO, and OIE) have jointly called for action against AMR but—as we also observed—the WHO has, historically and politically, been the dominant agency in this area. Former WHO director-general Dr. Gro Harlem Brundtland attempted to securitise AMR in 2000, framing the rise of AMR as a global crisis, but the security-framing was not successful at that time in

calling for urgent global responses and budget allocation in dealing with the threats posed by AMR owing to the precedence of bioterrorism after the September 11 attacks. It was not until in 2015 the WHO re-introduced the securitisation of AMR when the former WHO director-general Margaret Chan claimed,

Antimicrobial resistance is a **crisis that must be managed with the utmost urgency**. As the world enters the ambitious new era of sustainable development, we cannot allow hard-won gains for health to be eroded by the failure of our mainstay medicines. (World Health Organization 2015, emphasis added)

WHO Regional Director for South-East Asia Dr. Poonam Khetrapal Singh likewise stated, 'Antimicrobial resistance is a **threat to global security and economic stability**. It is a **looming health and economic crisis** that requires both global and local solutions' (World Health Organization 2016, emphasis added).

In addition to the universal-threat claim, the organisation incorporates the 'One Health' approach in the Global Action Plan on AMR, incorporating the human health, animal health and environmental health agendas into the overarching AMR securitisation (World Health Organization 2015) Buzan and Wæver (2009, 268). mention the potential rewards of securitizers in constructing a macrosecuritization, stating the WHO 'can define, demonstrate and legitimate leadership. It can support claims to exceptionalism and special rights. It can facilitate and sustain alliance formation.' In other words, acting as the key securitising actor of AMR reinforces the WHO (and, thus, public health) as the key international health agency and also fortifies its role in the constellation of different actors.

Having said that the WHO has served as the primary securitising actor of the AMR macrosecuritization, it is nevertheless argued that AMR has opened a global policy space for a redistribution of power. Incorporating Zakeria's concept of 'the rise of the rest,' in the case of AMR, this is not the decline of the WHO hegemonic leadership but rather the rise of other actors such as the FAO and the OIE (The Economist 2008). The WHO retains a key position in managing the AMR macrosecuritization, at the same time acknowledging both the diversification of global health leadership and the need to act together (Hoffman 2010). However, this *primus inter pares* structure means that public health remains the central concern in the fight against AMR, rather than simply one aspect of the problem. This further suggests that even as the macrosecuritization of AMR has led to a higher degree of comprehensiveness at the global level, the resulting power structure needs to be fully understood before a successful case can be established.

While the transnational non-health and non-state actors, such as FAO and OIE, are co-serving as securitising actors, multilateral state actors have simultaneously been serving the role of both securitizers and audiences, in the AMR macrosecuritization. The role of the G20 as both securitising actor and audience is a case in point. The individual G20 member states were the audience for the security claims uttered by the WHO, but member states were acting as securitising actor collectively in the 2016 Summit, stating, 'AMR poses a serious threat to public health, growth and global economic stability' (Ministry of Foreign Affairs of the People's Republic of China 2016). The United Nations General Assembly is another example to illustrate the overlap of 'actors' and 'audience.' Given that AMR was the fourth health issue being taken up by the UN General Assembly (the others were HIV/AIDS, non-communicable diseases, and Ebola), the member state delegates were simultaneously securitising actors and audiences. This shows that the

identity of ‘securitizing actor’ and ‘audience’ can overlap, either sequentially or simultaneously, at different stages of the macrosecuritization process (Hindmarch 2016).

However, states are not unitary actors. It is necessary to also consider intra-state positions on AMR in order to assess the success of the macrosecuritizing move. What our fieldwork uncovered was that the structural divides at the global level—between public health and other sectors—is replicated at the state level. In regional states these divides are exacerbated by scarcer resources for new policy initiatives are scarcer and more competing insecurities. This policy environment limits the securitising effect. An example of this can be seen in the case of India, which has submitted its National Action Plan. As one Indian interviewee stated,

The multi-sectoral response is coordinated by the Ministry of Health and Family Welfare ... but Ministry of Agriculture and Farmers Welfare does not believe that AMR is a problem. The National Plan should have been submitted [to the WHO] earlier, however officials of Ministry of Agriculture and Farmers Welfare at the central level were absent in the multi-sectoral meeting, therefore the meeting was postponed in order to consult the officials before the submission of the National Plan.⁵

The policy environment can also create false positives. As an IHO representative in Vietnam observed, Vietnam was paying attention to AMR only because ‘of the global attention and the increase in technical and monetary resources.’⁶ Yet, even there, the threat perception was driven by public health—rather than One Health—agendas.

These difficulties also limit the degree of comprehensiveness. In Asian countries, the cooperation between the human and animal sides on AMR has been by far minimal and ad-hoc. This problem was highlighted by a regional director of an IHO in Manila, who stated that the

Ministry of Health and Ministry of Agriculture do not share information; the cooperation was minimal ... Another problem is once again the sustainability of the cooperation ... Despite a multi-sectoral response, sectors do their own activities; health sector is the key actor to implement the national action plan. But how the health sector engages with the non-health sector is the issue we have to look into.⁷

Indeed, even when the two sides cooperate on paper, their interactions are not necessarily cooperative in practice. A team leader of an IHO in Jakarta highlighted the conflict encountered in AMR responses underneath the Global Health Security Agenda (GHSA) concluded that,

In responding to the GHSA, it is difficult to coordinate the work between Ministry of Health and Ministry of Agriculture. Ministry of Agriculture sent people working on food security but not those working on AMR to attend the GHSA meeting. In addition, the Ministry of Agriculture has overemphasized food self-sufficiency and the idea of food sovereignty ... Agricultural minister constantly pushes for the food security agenda.⁸

Indeed, based on our interviews conducted in the seven selected countries, it can be concluded that the most serious obstacle to successfully macrosecuritizing AMR is the continued supremacy of the public health sector over animal sector in the policy responses. Health ministries have been consistently occupying the leadership role in the multi-sectoral coordination on AMR responses in many Asian countries, with an attendant flow of resources and power.

What our fieldwork did suggest is that so long as there is a sustained global effort to tackle AMR, it is more likely that regional states will devote attention to the problem. Partly this is due to the increased resources that flow into these countries as a result of their cooperation. Indeed, even when those these resources are monopolised by the public health sector, there are still additional resources provided to other sectors. In this respect, so long as a threat perception exists, there is a window of opportunity to address AMR. A regional director of an IHO aptly likened this problem to the difference between peacetime and war.

No one invests in peacetime; people rather invest in emergencies. It is always not easy to convince the government, especially financing department, to allocate money for disease surveillance. As a Chinese saying goes ‘God of Wealth follows God of Plague’ (*caishen genzhe wenshen zou*). It is believed that budgets follow epidemics; therefore, people do not see the need to invest money when there is no disease outbreak.⁹

In other words, multi-sectoral cooperation is largely anticipated in times of emergency; once the outbreak subsides, sectors separately work on their own business. The challenge for the global community is to keep the threat of AMR active given that it is a gradual rather than an episodic threat.

Another underlying problem is the conflict of commercial interests versus animal welfare in addressing the overuse of antibiotics in animal husbandry. For example, the livestock export trade is a key source of employment and revenue in countries such as China, Thailand, Indonesia, and Vietnam. The previous and ongoing outbreaks of zoonotic infectious diseases, such as H5N1 and H7N9 have prompted farmers to administer antibiotics to prevent subsequent outbreaks in their farms, hence making the ban of antibiotic use in the breeding industry impractical and unpopular. At the same time, there is a dominant view in the livestock industry that antibiotics are essential for growth promotion. For these reasons, the animal health bureaucracies are resistant to securitising AMR because to do so would create new economic and social insecurities. As Heymann and Dar (2014) note, the success in less-developed regions is often hindered by the lack of financial means. While the One Health approach in the macrosecuritizing practice of AMR is desirable, the fieldwork data suggests that such a strategy is further complicated by tensions between middle-level securitizations (health, food, economic, and social securities). This renders the macrosecuritization of AMR vulnerable to suboptimal implementation of emergency responses.

Concluding remarks

AMR is not a new phenomenon. Its threat potential has been known for as long as its benefits. AMR has nevertheless been a low priority issue in most developing and many developed countries, where misuse and overuse of antibiotics in human and animal sectors have been common. In seeking to understand contemporary responses to the threat posed by AMR, this article revisits Buzan and Wæver’s concept of macrosecuritization which highlights the larger social formation in which lower-level securitizations are incorporated and coordinated. Based on a surface review of the three dimensions of macrosecuritization, it could be concluded that AMR is a successful example of this approach.

However, this conclusion is tempered by the findings from our fieldwork in Asia, which suggest that the operationalisation of all three dimensions is imperfect. In terms of audience acceptance, we found that just because states accepted the threat posed by AMR at the global level, this did not automatically translate into a threat perception within the state. Macrosecuritization assumes that the audience is unitary, our research suggests otherwise. A limitation on our data is that we are not in a position to assess to what extent a state needs to be unified in order to accept the macrosecuritization move. That said, given the necessity of a One Health approach to AMR, we would propose that the four key sectors—public health, animal health, plant health, and the environment—would, at least, need to accept the reality of the threat if the state could be considered to support macrosecuritizing agendas.

The fractured nature of audience acceptance feeds into the degree by which a comprehensive effort can be launched to address AMR. As our research highlighted, one of the key problems in this area is the domination of the AMR agenda—at the global and state levels—by the public health sector. This creates a self-reinforcing circle, whereby the dominance of public health results in more resources flowing into it, which further institutionalises its dominance. Without a more evenly distributed policy environment, successfully implementing a macrosecuritization strategy is problematic. Audience acceptance and the degree of comprehensiveness also impact on the global level efforts to address AMR. While, rhetorically, there is a clear global commitment to combat the AMR threat, the fact that both the audience and the component sectors remain fragmented limits the efficacy of the securitisation move at the global level. As such, even though the case of AMR fulfils the basic format for a macrosecuritization, to assess its likelihood of long-term success requires a more systematic examination. This suggests that a deeper interrogation of the policy structures and relationships that underpin macrosecuritization is necessary.

Notes

1. All interviews were conducted under Chatham House rules.
2. It is noted that securitisation language mostly applies to highly contagious infectious diseases rather than the broader category of communicable and incommunicable diseases. See Davies (2009).
3. ‘Niche’ securitisation refers to issues (such as environmental threats, epidemic diseases, organised crime, and drugs that get onto the agenda as accepted threat) but do not rise to the top of priority lists (Buzan and Wæver 2009).
4. The theorists identified four types of universalism: inclusive universalisms, exclusive universalisms, existing order universalisms, and physical threat universalisms.
5. Interview with program manager of research centre, New Delhi, March 2, 2017.
6. Interview with an IHO representative, Hanoi, May 22, 2017.
7. Interview with a regional director of UN organisation, Manila, March 28, 2017.
8. Interview with a team leader of UN organisation, Jakarta, April 2017.
9. Interviewed with a regional director of UN agency, Manila, March 2017.

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