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## Participating in a fake catastrophe. Critique and engagement in simulations of natural disasters

Marc Elie, Frédéric Keck, Sandrine Revet

### Introduction

October 2008, in a capital city on the East coast of Africa. The National Bureau of Emergency Management in collaboration with the United Nations Office of Humanitarian Affairs (OCHA) launches an exercise simulating a disastrous cyclone. All the emergency actors – national and international – form a task group to perform real-time on-site crisis management. NGOs, United Nations agencies, Red Cross and Civil Protection workers, followed by journalists, rapidly set up a refugee camp to shelter 40 villagers – mostly women with children - recruited to play displaced persons. The plan is that they should be registered and distributed water and food. After registration, the mock displaced families are parked in tents. It's a very hot day. Meanwhile, the emergency water system is not working, and the food promised to the extras is not ready on time, because emergency workers have not managed to start the fires. A real emergency is about to materialise. People are thirsty, children start crying. The UNICEF team rushes to town to buy all the water bottles in a little grocery. Informed by phone, the national chief of the emergency bureau orders fish to be delivered to the disaster victims, beyond the rations of rice planned in the emergency scenario. “What are these people going to think about the government if we don't feed them properly?” Thinking back to the event few months later, one of the UN officials confesses: “It was a disaster, a real disaster”.<sup>1</sup>

In the last twenty years, disaster simulation has become a new technique of risk management. The official purposes of these simulations are diverse: to assess infrastructure vulnerabilities, to stimulate collaboration between emergency services, or to involve local people in security planning. A social analysis must go beyond what simulations intend to do to look at what they actually do.

When observing them from the outside, it is tempting to criticize simulations as

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<sup>1</sup> Interview with UN official, Paris, 2010. See also (Stratigos 2013).

blurring the distinction between reality and fiction. The example quoted above shows it ironically: the simulation of a fake disaster can produce a real disaster ; people don't see the real disaster happening, busy as they are at mimicking a virtual reality. Video games are typically criticised for alienating addicts from reality (Turkle 2009). However, the reality/fiction dichotomy is a too massive way of conceptualising simulation and its critiques. We argue that ethnographic analysis reveals how actors engage in exercises at different levels of relations, and that critique appears in the margins between these modes of engagement.

The anthropology of ritual performances has been an important field for our conceptual analysis. If one asks how simulation has become a powerful tool of risk management at the global level, the ethnographic method requires to look cautiously at the efficacy of the simulation of a singular disaster in a local place. Simulations of nuclear explosions have been described as rituals because they display the separation between the experts and the public through a “technopolitical worldview” and an “ideology of deterrence” (Gusterson 1996: 154 ; see also Gusterson 2001 and Masco 2006). However, the separation between the experts and the public is not that strong in the simulations of natural disasters, which take place in open stages and not in secret arenas. Following Houseman (2001), we propose to distinguish between rituals and plays. Rituals produce embodied dispositions with a coded series of actions, which is dissimulated to profanes (Houseman 2002). Plays prescribe a series of actions through the manipulation of artefacts, but they don't aim at producing dispositions in the body. Simulations of disasters are clearly “disaster plays” (Revet 2013): they don't engage ritual experts in the frame of a coherent ideology, but various actors in different registers of emotions. We propose to describe the efficacy of these performances of fake disasters. How is it that images of a coming disaster transform relations between persons and artefacts through the management of uncertainty (Strathern 2013)? And what are the differences in modes of engagement between a nuclear catastrophe and natural disasters?

However, despite a clear inspiration from social anthropology, the tools we use for our analysis are more clearly borrowed from what has been referred to as “pragmatic sociology” or “sociology of critique”. By this term, we refer to a group of researchers who showed that critique, as a distanced view of

social relationships that questions their reality, appears in the shifts between various modes of engagement. Luc Boltanski and Laurent Thévenot (1990) describe a social situation where, to account for their actions and statements, actors refer to values accepted as overarching within different convention systems. .When they shift from one convention system to another they open a space of critique : for instance, the head of a company discusses about salaries with the employees and shows a picture of his children saying “Look, I have a family too!”, thus shifting from a civic to a domestic space. Albert Piette (1996 ; forthcoming) had defined the “minor mode of action” as a distraction from the engagements of a regime of action that leads to question it without actually criticizing it. He uses this concept to describe how “God” is present in the interactions between religious practitioners without visibly appearing. It is through the distraction from the coded sequence of action that churchgoers experience this uncertain mode of presence. More recently, Boltanski (2008) has drawn on the anthropology of rituals to describe how critique questions the reality defined by institutions through a return to the uncertainties of the “lived world”.

Crossing the anthropology of rituals with the sociology of critique sheds light on what disaster simulations do. The problems raised by this new object of social analysis must be addressed at three different levels. The first is the ontological question of the reality of the disaster that is simulated, and that can be criticized by showing the dense variety of lived experiences. Historians of public health have thus ironized on its recent “vertiginous collapse into fiction”, thus leaving open the space of the uses of these fictions (Zylberman 2013: 24). The second is the political question of the hegemony of a new governmentality by disaster management. The capacity of the government of disasters to absorb the critiques it receives is very similar to that by which capitalism integrates the demands for more authenticity or sustainability (Boltanski and Chiappello 1999). How can we explain the efficacy of simulations of disasters despite critiques of its fictitious ontological claims? Does this capacity to absorb critique account for its spread in various locations and to all kinds of disasters? We propose that the answer to this question can be found, on a third level, in the ethnography of the engagement of actors in these simulations. As the ethnographer is gradually immersed in the scenarios of

disasters, the ontological and political version of the critique of simulation become expressed through the distancing of the actors themselves. We suggest that these variations in modes of engagement explain the efficacy of simulations despite the ontological uncertainties on the reality of the disaster being simulated. When actors engage in simulations of disaster, they tend to ignore more elaborate critiques of simulations; and yet they also express modes of distancing that are reelaborated by these forms of critique, or that can be absorbed by the simulation itself.

What does the ethnographic method change to the study of disaster simulations and their critiques? These performances have mostly been studied by anthropologically-informed historians, in a way that we want to question.

Two views of disaster simulation are opposed in the recent literature. Andrew Lakoff has shown that the extension of techniques of disaster management from Civil Defence to all kinds of natural disasters (hurricanes, earthquakes, infectious diseases), could be followed through the general principle of “preparedness” (Lakoff 2008 ; see also Armstrong 2012). Reflecting on the self-criticism of a senior official of the Bush administration who said after Hurricane Katrina: “We are not prepared”, he shows that the notion of preparedness was elaborated by the Federal Emergency Management Agency (FEMA) in the United States in the 1990’s (see also Huret 2010). Preparing for the next emergency is a technique of risk management that doesn’t rely on series of numbers transcribing passed events (as in the preventive mode of insurance thinking), but in the imaginary enactment of the “worst-case scenario”, marking a historical shift from “public health” to “global health”. Lakoff combines what Paul Rabinow has called an “anthropology of the contemporary” with a “history of the present”: an uncertainty in contemporary technologies of power is traced back a longer history, that of the Cold War. However, by showing how experts transform disaster management in response to new vulnerabilities, this method doesn’t show how simulations affect those who participate them. If simulation is the productive imaginary enactment of system failure, “generating knowledge of gaps, misconnections, and unfulfilled needs”, it connects “various agencies: local and national government, public health, law enforcement, intelligence” (Lakoff 2007: 266).

On the other side, Guillaume Lachenal has inscribed simulations of

disasters in Africa in a longer colonial history of public health. The pretence of anticipating epidemics through new techniques of “global health” appears, in his view, as the most recent version of a Western mode of intervention in Africa that he describes as “nihilistic”, in the sense that it is through non-intervention that Western scientists pretend to transform the bodies of African populations. The obvious pretence and apparent absurdity of Western disaster simulations are conceptually elaborated by Lachenal in a way that gives voice to African subjects who are involved in these simulations. Lachenal quotes biologists who took part in a simulation of pandemic flu in a luxury hotel in Cameroon as a sequence of a “global health” seminar, away from public media. “The WHO (World Health Organization) wants exercises of simulation and they have a lot of money for that. So what we did is we took the money, we printed a banner, we took pictures and we sent [it to them]. When they have the pictures of the exercise, they’re happy» (Lachenal, forthcoming).

These two historical analyses of contemporary disaster simulations illustrate contrasting modes of engagement, from the explicit reflexivity of those experts who elaborate this technique of government to the explicit irony of those who are supposed to benefit from it. However, we are interested by the implicit modes of critique and reflexivity that occur between these two extreme positions. Such a contrast may be accentuated by the differences between the United States and Africa in the genealogy of simulations of disasters. We have investigated other temporalities and locations, raising the question of the continuity between civil defence for nuclear war and contemporary simulations of natural disasters. As a historian of the Soviet Union, an anthropologist of Latin America and an anthropologist of East Asia, we propose ethnographies of disaster simulations that are attentive to the various modes of engagement and critique of actors, and to the effect of the involvement of the ethnographer in these critiques. While the ethnographic method has recently been at the core of discussions between historians and anthropologists, we propose to put it at the test of the ontological question of the reality of simulation in the contemporary government of disasters.

Simulation in the nuclear age

The age of public fallout drills (the 1950s-60s) provides a case of both massive involvement in disaster rehearsal and growing discontent among the subjects of these simulations: At the turn of these two decades, protesters invested the simulation stage to disrupt the drills and delegitimize the civil defence message, leading eventually to renounce these exercises. A retrospective survey of the US and Soviet Union shows that simulation subjects hijacked the scene and scenario and redirected its message toward anti-war purposes.

Mobilizing citizens for simulation exercises had been a considerable challenge for Civil Defence authorities ever since this new form of public rehearsal took off in the 1950s. As a fundamentally civil (in contrast with military) agency, Civil Defence officials invested great efforts in circulating the ideology of survival in a nuclear war, relying on what they considered key social groups outside the state apparatus: churches, women associations, and businesses. The most massive exercises in the USA ought to imply everyone: during operation “Alert” in 1955, everyone in the streets of New York City had to take shelter. The results were impressive: In the USA and Canada, public rehearsals implied millions of citizens in the 1950s. In Britain, as much as one percent of the population—predominantly women—was trained in civil defence at the end of the decade (Davies 2007:35).

Remarkably, Civil Defence officials had growing trouble in involving civilian populations in their nuclear planning for World War III in the thermonuclear age from the middle of the 1950s onwards. In the US and other countries heavily involved in the Cold War such as both Germanies and Great Britain, Civil Defence declined quickly with the acknowledgement that Hbombs could be delivered from afar without being intercepted (Rose 2004, Henriksen 1997, Biess 2009, McEnaney 2000). In this context, preparing for Armageddon proved controversial and unpopular, with the notable exceptions of Norway and Sweden (Greiner 2009, Sørli 2009, Cronqvist 2009). Even faced with a very likely nuclear war and terrifying visions of its consequences for America’s and Europe’s cities, people were reluctant to engage massively in preparedness efforts. At the turn of the 1950s-1960s, opposition to fallout simulations culminated. In the USA and Canada, public rehearsals did not outlast the Cuban missile crisis of 1962. In Britain, public exercises were abandoned in 1968 (Davis 2007: 19-20, 33).

Thus, paradoxically, at the time of the greatest nuclear danger, as both the USA and the USSR had the capacity to launch thermonuclear warheads at one another across the oceans, fallout simulations designed to get people prepared for this great danger found little support among the broad population, and civil defence quickly lost its Cold War significance as the 1960s wore on. In the USA, the rise of the anti-nuclear movement accounts mainly for this paradox. As Tracy Davis has shown, preparation exercises encountered growing protests in the decade of massive drills of the 1950s. In New York City during the 1955 “OPAL” exercise, a few people from the War Resisters League, Peacemakers, and Catholic Worker Movement refused to behave according to the simulation scenario: when the sirens rung, the activists did not take shelter and ignored police notification to do so. Sitting in City Hall Park, they claimed that Civil Defence propagated fear and infringed on “traditional American freedom” (Davis 2007:52). The activists were using the stage of the simulation to convey their pacifist message. They could have remained off-stage by staying home. But rather than avoiding the scene, they chose to disrupt the simulation. They were acting participants in the drills: after all, experience had shown that in the event of a real nuclear attack, many might not take the sirens seriously; a thorough preparation should include the police convincing people to take shelter. At the same time, however, they distanced themselves from the exercise purpose and interrupted the continuity of the rehearsal. Against the end of the decade, parents with children joined these activists in their demonstrative disobedience to shelter orders during simulation exercises (Davis 2007:53). These protests took place in a context of growing peace activism at the turn of the 1950s-60s oriented against nuclear tests and the arms race (Boyer 1998:109).

Protesters were increasingly using the stage not only to disobey, but to organise counter-performances. In 1959 and 1962, during the exercises named “Operation Spade Fork”, anti-nuclear activists called for collective marches from the simulated ground zero, following the fallout cloud. In a planned “10-Megaton March”, protesters proposed to relay-walk to the localities downwind of the zone of total destruction, to alert the public to the fallout problem (Davis 2007: 54). During the “euro-missile” crisis of the beginning of the 1980s, British authorities had to cancel mass drill (operation “Hard Rock”, 1982) for



fear of subversive counter-performances on the stage. Protesters proposed to dress up as Soviet invaders, to stage death and funerals, and to panic-buy items, among other provocations. As Davis put it: “In a sense, protest theatre trumped civil defence rehearsal.” (Davis 2007: 55). The public theatricalization of the drills, that was one of the points of contention of Civil Defence (Davis 2007: 51), was aptly used by the protesters both to ridicule the simulations and to trumpet their message.

Civil Defence officials lamented “fatalism” and “apathy” among the populace. In fact, as the 1950s wore on, it became clear to most that a thermonuclear war would render life unbearable for the survivors, whereas Civil Defence planning was based on the belief that it was possible to reconstruct the country after a nuclear attack. Planning for the time after the attack was widely denounced as an illusion in the Thermonuclear Age. However, Margot Henriksen and Kenneth Rose rightly reject the view that disinterest and scepticism accounted for the failure of Civil Defence: it drew not only considerable detachment, but outright protest on the simulation stage. If the anti-nuclear movement succeeded at the turn of the 1950s-1960s, this was because the mood had changed radically in the US population, not because it had turned pacifist. In fact, most Americans did support Kennedy’s nuclear deterrent and hawkish stance in the political face-off with Nikita Khrushchev in the Berlin and Cuba crises (Rose 2004: 210). Opinion polls showed that they were ready to fight a nuclear war if they had to, but they took no steps to get prepared for receiving the blow. How was this “enigma of Civil Defence” (Lapp, quoted by Rose 2004: 207) to be explained?

US historians argue that the public refused to enter the morally unacceptable deal offered by Civil Defence specialists (Rose 2004, Henriksen 1997). Henriksen sees a “moral awakening”, even a “cultural and moral revolution” against “the consensus of the bomb” during the conflicts of the beginning of the 1960s. For Rose, the moral dilemma of survival in a thermonuclear war persuaded many US Americans to reject civil defence. If survival meant burying into the earth, was such a life worth living? There was a tension between “too serious not to get prepared” and “too serious to be prepared for”, palpable in the reception of the famous OCD brochure “Fallout Protection: What To Know And Do About Nuclear Attack”. Furthermore,

people were reluctant to become part of the “nuclear deterrent system” (Lapp quoted by Rose, 2004: 205) by submitting their bodies to the requirements of nuclear planning. This change in mood and attitude is certainly a victory for the anti-nuclear movement: their slogan had entered the mainstream discourse. Even President Reagan’s “Star Wars” plan and a strong wave of nuclear fascination and fear in pop culture in the 1980s could not render civil defence desirable: his reactivation of nuclear civil defence under the newly created FEMA had no result (Rose 2004: 223).

The Chief of the US Office of Civil Defense asked desperately: “... why this nation, unlike the Soviets, finds Civil Defense – protection of people at home and at work – a controversial and unappetizing undertaking”? (Rose 2004: 207). The assertion of Cold War experts that a super-militarised Soviet Union was training its citizen-soldiers by the hundreds of millions for the upcoming nuclear Armageddon was meant to force Western societies to react with greater involvement in civil defence. However, Civil Defence in the Soviet Union (MPVO) failed like its US counterpart to gather support in the population (Geist, 2013).. After an ambitious initial plan in 1954 to train the entire population, Soviet Civil Defence quickly receded after the 1962-1963 watershed, although it kept an ambitious shelter program (Geist, 2012: 26).. In the 1960s, it was clear to RAND experts that Soviet civil defence was a heavily staffed and bureaucratised system to which the “majority are relatively apathetic”. When the effect of a thermonuclear strike became widely known at the turn of the 1950s-1960s, many Soviet citizen felt that “there is no place to hide” from such an explosion. The still vivid memory of WWII's ruins did not motivate the population to prepare to fight on the home front (Gouré 1986: 20, 58-61). In their writings, Soviet Civil Defence experts did not engage in the philosophy of Civil Defence, but presented preparedness simply as a means to reduce casualties in the event of a nuclear strike (Egorov, Alabin, Shliakhov 1970:13-14). Thus, Civil Defence training was widely considered as just one more requirement to fulfil by blue and white collars. If open protests in the fashion of the US anti-nuclear movement was unthinkable under repressive socialism, it seems that many Soviet citizens took nuclear preparedness for a tedious penum.

Civil defence began turning to peacetime disasters when its role in the

Cold War diminished. In the 1960s, leading US strategist Robert McNamara shifted from the idea of a “limited nuclear war”, for which survival and preparedness were possible, to “mutually assured destruction”, for which civil defence had lost its significance (Rose 2004: 205). With the natural disasters of the 1960s (Hurricane Betsy in 1965), civil defence operated its first engagements in peacetime disaster reaction and management. Similarly in the USSR, Civil Defence turned to preparedness for natural disasters after the “taming of the Cold war” (Zubok and Pleshakov, 1996: 236): in Soviet Kazakhstan, the Civil Defence Department trained in the summers of 1964 and 1965 to be prepared if a disastrous debris flow from the near-by mountains struck the capital Alma-Ata. Anxious that hotter summers and melting glaciers were bringing the disaster closer, the city authorities embraced preparedness exercises as an expedient in their desperation to ever get proper protection for the city. These Civil Defence exercises were modelled on traditional war emergency exercises. Organised at the city district level, they did not involve the population. Rather, they enrolled officials in reacting to a massive debris flow event, testing communication between agencies and shortening response times. An alarm signal would be dispatched over the phone to the district Mudflow Commission, local police, bus and taxi companies, and the district hospital. Civil Defence officials would observe how quickly officials, police personnel and drivers would mobilise to reach the assembly places. If anything, these exercises showed the city administration that it was not properly prepared: means of communication were so poor that it was impossible to reach every important actor. Worse, whole agencies would not receive the alarm signal. Afraid to panic the population and even more itself, the city council never got the population involved in debris flow preparedness.

The public fallout simulations of the Cold War proved impossible to sustain against a subversive mode of engagement of actors. In mass drills, the stage was open enough to permit alternative and subversive enterprises that demonstrated the inanity of the disaster scenario. Simulation actors could turn out to be masked protesters trying to overwhelm the medical facilities with mock-wounded or fake Soviet invaders. A few hundreds activists could thus ridicule the work of thousands of conscientious rehearsal actors. The acknowledgement that the scene could not be controlled on the scale of the

destruction zone of an H-bomb effectively terminated the practice of simulating such detonations.

Can it be considered, then, that the shift from nuclear simulation to allhazards planning was caused by the critiques of the former ? Or should it rather be estimated that the transfer of techniques of preparedness to natural disasters was the sign of the capacity of disaster governmentality to absorb its own critiques ? An ethnography of a contemporary simulation may provide elements of reply, also showing different modes of engagement between adhesion and skepticism.

### Natural disaster simulations in Latin America

Natural disasters are nowadays at the centre of an important set of international policies and programmes aiming at the reduction of the impact of such events (Revet 2012). Simulation exercises were widely developed during the last decade, as it is one of the techniques of preparedness that spread worldwide. Simulations are different from drills, in which the population is supposed to participate, to table-top exercises, mostly organized for experts and emergency professionals. Simulations take place at different scales, from a neighbourhood or a district to cities or even national level. They follow diverse purposes: rehearsal of national or international protocols where the coordination is one of the most important problems addressed, rehearsal of technical gestures such as triage of the affected population, information and participation of the population, public demonstration of the authorities' preparedness capacities... Depending on all these factors, access to simulations as a field of observation can be very easy –when the public is conveyed and medias are expected to publicise the exercises - or more difficult, when the simulation access is limited to emergency experts. What is at stake in the access given to the observation of such exercises is the question of the possibility for engagement of the different actors and for a critique to emerge within the simulation. The efficacy of simulations can therefore be understood in relation with the different form of engagement and critique that take place during the performance.

In Venezuela, such exercises were organized in 2006 and 2007, after

the recent occurrence of two important floods provoked by mudflows in 1999 and 2005 in the northern littoral Vargas State. National authorities started organizing drills involving the population and all the actors to participate in a big evacuation and emergency operation in case of another disaster. The scenario was always starting with an important rain episode causing both floods and mudflows, based on the passed disasters occurred in the region. The 2007 drill<sup>2</sup> consisted in the evacuation of 200 people from their houses on the coast to a big military boat moored a few miles away, using the fishermen little embarkations in order to reach the big marine boat. The drill was not observed directly by Sandrine Revet, but as it happened on the field where she had made her doctoral research from 2000 to 2005, it was told to her on her next trip on the field by both inhabitants and professional involved in it. Moreover, a documentary film maker well known from the anthropologist had made a film about the exercise, as part of a pedagogical program on disaster risk reduction held in the region with children after the 1999 mudflows<sup>3</sup>. A screening of the film with the film maker, some firemen and inhabitants of the district had been organized by the anthropologist in order to collect their comments.

At 7 in the morning, sirens of the Civil Protection and firemen started to ring in the neighbourhood, inviting inhabitants to get out from their houses and join tents installed next to the beach. People went out from their house in a slow but serious way. It was clear that there was no “real” emergency, but the participants were following the protocol as they had been told. In the Red Cross tents, volunteers and medical professionals were expecting them to give them first emergency care. After that, people were directed to other tents where they were counted and given a victim (*damnificados*) number and card. This card would provide then access to the fishermen boats that would carry them to the huge marine boat. During all the exercise, military helicopters were flying over the scene and monitoring the transfer of emergency material and food on the coast. The sounds of helicopters, the presence of the huge army boat, the heat and the boat trip on the sea all contributed to create a sensation

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<sup>2</sup> Simulacro in Spanish, marking the difference with table exercises called simulación.

<sup>3</sup> Film « Epa tu ! » réalisé par Jean Charles L'Ami, Production 35 Quai du soleil, 2008.

of emergency and gravity, forcing the engagement of the inhabitants.

What strikes here is the important emotional implication of the population involved. Usually very inclined to adopt a critical or humoristic attitude concerning the prevention programs organized after the recent disasters –based on the disputes and negotiations of risk during the reconstruction process after the 1999 disaster (Revet 2006) and on the commonly shared idea that the inhabitants did know better their environment and local risks than the experts- in this case, people seemed fully engaged. Women who had survived the 1999 disaster shared their feelings with the anthropologist: « Me emocio » (I was moved) « Vivi, lloré, lo recordé (I lived it, I cried, I remembered it)... “me maree, me paso por la mente lo del 99 » (I felt sick and I thought about what happened in 1999).

Here, we can talk about an important level of engagement in the drill, linked to the previous experience of a similar event and to the use of artefacts that link physically people to their previous feelings. Feeling sick on the boat, being scared by the helicopter sounds, and being afraid to accost the big army boat: these had already been experimented by the participants. The simulation here recreates the sensations felt during the real disaster, and people engage in it through an emotional experience. The simulation, thus, does not evoke as much a future event than a past one. The engagement in the exercise constitutes both a rehearsal and a reiteration of a former experience. Although the role of victim is active in an emotional way, the protocol of their rescue only considers them as quite passive. Their identities are transformed -from inhabitants to victims and to affected- through their walking from their house to the tents and from the tents to the boat. However, when they recall the drill, they remember an important engagement and participation.

Another mode of engagement has been observed in Peru in 2010 by Sandrine Revet. Here, the exercise has been organized in the city of Lima and in the Callao region, next to the capital, by the Humanitarian Office of the European Community (ECHO) and the United Nations Development Programme (UNDP). The three-day exercise was intended to prepare Peruvian relief professionals and Lima's population for the occurrence of a major earthquake and tsunami in the capital region. The exercise had emerged after the 2007 Pisco earthquake which killed hundreds of people and destroyed a

large number of buildings in a southern region of the country –not in Lima or Callao. It took place after the two earthquakes occurred in 2010 in Haiti and in Chile. International assistance was called upon to help Peru face and cope with this major disaster. After the Pisco earthquake which required international intervention, a quite negative evaluation of Peru's crisis management had been made by international organisations<sup>2</sup> who focussed on improving Peru's preparedness. “Day 1” involved a staged communication exercise with local crisis coordination centres at several levels (city, district and national). “Day 2” was devoted to evacuation exercises in various locations in the city. On “Day 3”, a simulated search for bodies in a collapsed building took place. We will focus here on the evacuation exercises organized on Day2, closed to what had been observed in Venezuela.

For the chief of the national Civil Protection agency, the participation of the population was one of the important goals pursued with the organization of such drills : “lo importante es que la población participe, es lo que realmente se necesita<sup>3</sup>”. (The most important is that the population participates, it’s what we really need). The access to the drill had been obtained by Sandrine Revet through the Geneva OCHA office who had taken care to consult the national Civil Protection chief. The ethnographer shared with other international observers a special position in the exercise. “International observer” is a role given to those who must observe, note, analyze and then share their appreciation of the exercise with the organizers. The access to the scene is then quite easy, but implies a silent position during the drill and no communication with the actors. The context of the observation was quite different from the Venezuelan case. Here, the ethnographer could observe the exercise, but without knowing the participants. The observation of their engagement is thus based on a direct but not informed knowledge of the scene.

The second day, evacuation exercise was held in several sectors of the city. In one of the poorer sectors, women participating in an NGO's risk reduction programme and school children had been recruited to play victims. Every professional sector possibly involved in emergency rescuing situations was playing its own part: the Peruvian and German Red Cross, the national Civil Protection, the health sector represented by the nearest hospital, the municipal police, international and local NGOs working with the population,

etc. Before the simulation started, women were made-up with theatrical blood by volunteers from an international NGO to increase the realistic effect and to “motivate participants”. As the responsible of the international NGO who had organized the recruitment and the make up of the victims put it “: it (was) like a show”. Neither the women nor the kids, playing next to their injured mothers and laughing at their strange and alarming aspect, seemed affected by the drill. They were participating, but with a certain distance marked by humour and jokes. One of the woman explained that an earthquake was not the kind of disasters they were afraid of, and that their engagement would have been different if they would have rehearsed fires, which regularly destroyed houses in the poor district. When the siren ringed out, the simulation started. Kids went running out of the school, some of them on stretchers carried out by other kids or teachers. The injured women stained with fake blood were transported to a park, where professional male rescuers wearing their official uniforms were installing emergency tents. They examined the wounded, asked them how they feel and issued cards that summarized their symptoms: from green (low) to red (severe), in order to organise the triage. Walkie-talkies were crackling around, mixing information related to the simulated emergency –“12 injured persons arrived at the hospital”- and information relating to the real situation “tell the Red Cross official he has to move his car, because the ambulance can’t park!”.

After the first moments when an emergency feeling seems to have been shared by the participants, one can observe something like a relaxation of the initial tension. At the centre of the park, kids stayed together for quite a long moment, as rescue professionals were acting. Teachers started to organize games and songs to keep them occupied. Some of the injured victims, instead of staying lying on the floor, stand up or sit down on benches. One was calling a friend and laughing on the phone -“guess where I am?”-, others took pictures; kids sang songs and ran around... While giving them the cards that describe their symptoms, the rescuers also laughed with the injured women. One woman asked, “Is it bad, doctor?” The man looked at the red sign on the card and grinned. They both laughed. All around, journalists were taking pictures and interviewing the chief of Civil Protection and other officials present at the scene. The local representative of the health ministry was raging on the phone



against the legal medical institute team that had just arrived on site wearing their uniforms and carrying flags as if they were participating in an official parade.

Here, all the actors required for the simulation were on the scene, following the protocol, but marking clearly a distance with the disaster simulated. Although props make up and sounds are used to build a more realistic effect, people performed the simulation with a minor engagement, oftentimes humour,,producing a distance with the performance. Various levels of engagement coexisted in the simulation. Nobody believed that the disaster had occurred or that there was any danger around. But some of the actors -most of them- believed it could be useful to rehearse in order to prepare, in case a real disaster does occur. Paradoxically, the public's participation, held to be one of the most important points to justify the simulation, at least for the national authority in charge, was reduced in this case to a very passive attitude of injured victims and crying children taken care of by professional rescuers.

#### An epidemic simulation in Hong Kong

The question of the efficacy of simulations of epidemics was met in the course of a research on the transformations of human/animal relationships by the surveillance of the “animal reservoir” of epidemics (Keck 2010 ; 2014). If it was easy to access places where animal surveillance is regularly practiced – live poultry markets and wild bird reserves in East Asia, considered as the sites of transmission of Avian Influenza to humans – it was more difficult to access simulations of epidemics in hospitals, as they concern the management of human patients by the government. Frédéric Keck presented himself as a member of the French Consulate in Hong Kong to participate to the simulation as an “observer”, and his presence was noted in the media report the following day. It is only because a place was carved for foreign observers in the simulation itself that an ethnographic observation was possible.

In Hong Kong, simulations of epidemics have been regularly held since the SARS outbreak in 2003, which was a major crisis for public institutions: around 1,000 persons had been infected with a new virus coming from South

China, lethal in 10% of cases, most of the infections occurred in hospitals emergency rooms, and the deadly virus spread to several countries in Asia and Canada through air flights (Abraham 2007). After the crisis, the Department of Health was reorganized: the Hospital Authority, in charge of ordinary management of public health, was separated from the Centre for Health Protection, whose role was to anticipate outbreaks similar to SARS through active surveillance and communication. Within this Centre, the Emergency Response Branch, headed by a police officer, was in charge of writing scenarios and organizing simulations. Twice a year, a field exercise was held in Hong Kong, with observers from China and overseas. In 2007, a desktop exercise took place between Beijing and Hong Kong with the name code “Great Wall”, to simulate the management of a patient carrying flu in different provinces of mainland China. The mix of health and security concerns was characteristic of the position of Hong Kong as a “sentinel” for emerging infectious disease: because of its proximity to China and its high economic resources, it was a model for global health techniques of preparedness. The involvement of Chinese officials as observers or co-organizers was also a way to downplay their reluctance to collaborate during the SARS crisis.

In January 2009, “Exercise Redwood” took place in the clinic of Shau Kei Wan, located in the working-class district of Hong Kong island. All field exercises bore names of natural phenomena – Maple, Cypress, Chestnut, Redwood, Eagle, Hua Shan ( a famous sacred mountain)... - as if to show that diseases were part of the natural ecosystem of the territory. The following scenario was distributed to the participants, and posted in major public buildings. Confirmed cases of Avian Influenza with human infection had been reported in Hong Kong's neighbouring countries, as well as a rising trend in patient attendance with influenza-like illness in Hong Kong hospitals. Avian Influenza was found on live poultry in Hong Kong's markets, and culled in farms and markets; a member of the staff participating in the culling was reported with H5N1 virus, as well as an eight-year-old boy who had played with live poultry. Four clinics were designated in Hong Kong to provide triage of patients with influenza-like illness and send patients with H5N1 to emergency departments.

Only the final part of the scenario was held in Shau Kei Wan. But the

first part was meant to provide a plausible context. After SARS, H5N1 was considered a candidate for the next emerging pandemic in Hong Kong. The culling of live poultry was practised regularly every time Avian Influenza was found in a market. H5N1 has jumped regularly from birds to humans since 1997 with a high fatality rate, but has never succeeded in passing from humans to humans – despite its spread as an epizootic on several continents. SARS succeeded once in jumping from animals to human and then between humans, but never reappeared in Hong Kong after 2003. The fiction of the scenario was to apply the narrative of a SARS-outbreak to H5N1, which, due to its lethality, could be worse than the actual SARS crisis. This scenario was based on the fact that SARS and H5N1 present the same symptoms in humans: coughing and respiratory distress.

A side effect of this fiction is that animals, which play a large role in the actual scenarios of epidemic outbreaks, are left outside the simulation. It must be noted that in Singapore, where no Avian Influenza has been found in live poultry, exercises are organized to simulate the cull of supposedly-infected poultry: workers of slaughterhouse wear protective equipment and receive Tamiflu before killing the poultry by electricity<sup>4</sup>. But the perspective of poultry on this fake outbreak is difficult to take: while in animal surveillance it is only metaphorically said that animals “act” – for example when it is said that they “revenge against humans by sending pathogens” – in simulations of epidemics, it is possible to see how actors “react »<sup>4</sup>. In Hong Kong, by contrast, culling of infected poultry is a real practice – it has occurred almost every year since the emergence of H5N1 in 1997 – and the spread of Avian Influenza to humans is simulated. The ethnography of simulation should therefore inquire into the relation between physicians and patients in the hospital, by contrast with the relation between slaughterhouse workers and live poultry. If the regular culling of poultry is criticized as a violent intervention of the government in the management of zoonotic diseases, how is this criticism expressed in the

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<sup>4</sup> It cannot be concluded, however, that only humans are actors in the simulations of epidemics. In exercises for the evacuation of residential buildings in Hong Kong, some actors are accompanied by pets who are handled with care by the Agriculture Department. The frame of the simulation draws a sharp distinction between poultry, considered as commodities that must be destroyed, and pets, humanised in the scenario.

simulation of epidemics?

The official purpose of the simulation was to coordinate hospital services in the management of patients with influenza-like illness. Eighty actors playing patients came in through the front door of the hospital and were sent to different departments depending on their symptoms (pulmonary conditions, tuberculosis, etc.). Twenty “players” treated them in the services, and two “simulators” communicated with other hospitals on a hotline. Those who were diagnosed with H5N1 were evacuated by ambulance through the back door of the hospital, where the media took pictures. The head of the Department of Health gave a press conference after visiting the hospital, but the journalists asked him about a new bacteria found in a private jacuzzi and not about the exercise itself. It seemed that the success of the exercise was not questioned: it was successful because it had been held. The scenario was written in such a way that no surprising event could happen.

All actors were young and relaxed. They arrived with blue caps that made them look even younger. Their symptoms were described on a tag they wore around their necks, indicating also their name, address, sex and age. These were accessories that allowed them to present themselves on the stage of simulation, in the sense of Davis 2007. They didn’t have to fake illness: their only role was to move to the designated departments. In the evacuation of a plane, those who sat next to the spreader received a red tag and those who sat at a good distance received a yellow tag: the red colour indicated the danger, saving the actor from acting out the symptoms. Those who were diagnosed with H5N1 were also obedient, going swiftly to the ambulance. In other exercises held by the CHP, in airports or residential buildings, the scenario had planned the role of the recalcitrant patient, who refused to be evacuated, forcing the medical staff to show patience and pedagogy. But in Exercise Redwood, there was no anxiety in the behaviour of the medical staff: although triage is considered an ethical issue when a rising attendance of patients is met with limited resources (Lachenal et al. 2014), triage during Redwood only separated symptomatic and asymptomatic patients to avoid the spread of the disease, and did not classify them according to their chance of survival in an overwhelmed medical environment. The tension of the situation – who will be considered a spreader? who will receive treatment first? – was delegated to

objects: tags and caps. The exercise was considered, in the words of the police officers who organized them, as “learning experience in the management of mass casualties”.

The actors were not taken randomly from the general public, as would have been the case in an exercise aiming at broadening participation in pandemic preparedness. They came from a humanitarian association, the Auxiliary Medical Service (AMS), created in 1950 to deal with the influx of Chinese refugees, and registered in 1983 under the Security Department of the Hong Kong government. Its 4,000 members are trained for disaster management in Hong Kong and outside. One of them describes it as an “afterwork entertainment”, “a place to find the other half”: it is one of those elite associations where similar people express and share moral values. During their own exercises, performed every month, they train how to rescue victims of car accidents or fires. They simulate heartbeats on dummies with fake hearts. “Patients cannot fake the heart rate or the respiratory rhythm,” said the organiser, “so they have tags.” Tags have an indirect real effect, while dummies can actually simulate the heartbeat of an injured victim.

When they play the patients in a simulation of epidemics, members of the AMS literally act as dummies. There is a sharp difference between regular exercises of accident rescue performed by the association and extraordinary coordinated exercises of epidemic evacuation involving several departments. If members of the AMS are seriously engaged in their own exercises, as significant moments in the life of the association, they remained frustrated by Exercise Redwood. One of the actors says he felt “passive”, playing on the ambivalence of the term:

“As we had experienced SARS in 2003, we all can forecast how we would behave in another similar situation, like Avian Flu. Being a citizen, we are quite passive; I believe that we should follow the guidelines and the Government’s advice so as to prevent ourselves from getting affected. As in the exercise, we were being passive”. Whereas citizens are passive when they don’t know how to behave in an epidemic situation, actors who follow the scenario of the exercise are passive in the sense that they have no initiative. This change in the mode of engagement reveals the closure of the simulation on itself. If the simulation had

involved the public, it would have introduced an unpredictable element; but since the actors in the simulation were usually active in regular exercises, they could agree to be disengaged from the action in extraordinary exercises. The asymmetry between actors and players was acceptable because it can be reversed in other exercises. Actors played on different modes of engagement because they took different perspectives on the scenario (Houseman 2002). “All actors are from the AMS because they can feel the whole process and give their own comments”, said the organiser.

Simulations of epidemics rely on these inversions between reality and fiction. In another exercise called “Jadeite”, members of the Emergency Response Branch were simulating the evacuation of a residential building, and the scenario specified that they had to evacuate the simulation room to a fallback room. As those who were conducting the evacuation were themselves evacuated, the modes of engagement could vary from distance to involvement. The construction of the Emergency Response Branch includes a “fallback room” to introduce a sense of reality into the simulation. The police officer who described this exercise said it was “more fun than a movie”. This confirms that simulation belongs to the domain of play or performance, rather than ritual: no bodily disposition is properly constructed during the simulation, but there is a suspension from the ordinary constraints that allows people to experiment with social interactions.

A more recent exercise indicates a link between epidemics and nuclear disasters and carves another place for actors. In May 2012, members of AMS participated in an exercise in Tung Ping Chau, the island of Hong Kong SAR closest to the Daya Bay nuclear plant in Guangdong. The scenario started from a radioactive leak in the plant and planned the evacuation of tourists by helicopter after decontamination in a water pool. Actors were members of the AMS, students and local residents: they played both evacuated visitors and rescue staff. According to the AMS, their members enjoyed the exercise because “the weather was very hot and they could take a shower or fly on the helicopter”. The engagement of actors varies with the accessories of the simulation: water and helicopters are more enticing than caps and tags. Another element of the scenario must be stressed: Greenpeace activists (Choy 2011) complained that they had not been invited to the exercise, and that the zone of evacuation was

too small. As was the case for infected poultry in Exercise Redwood, the simulation produces participation of actors in the different perspectives on the scenario, but also excludes some potential actors from having any perspective at all. Simulations of epidemics thus play on a series of contradictory relations (between humans and animals, between patients and actors, between the real and the virtual) that explain its efficacy but also leave a space for critique, or at least lack of engagement. This may be due to the fact that epidemics have the double effect of infecting all bodies equally and yet producing new distinctions between the normal and the pathological: simulation would then replay this ambiguous process with efficacy.

#### Conclusion: scales of critique of simulations

How, we asked, does disaster simulation leave space for the critique of its fictionality, and how does its governmentality absorb its critique? We have tested the historical hypothesis of a transfer of techniques of simulation from nuclear war to natural disasters by comparing three ethnographies: civil defence in the USA and Soviet Union, prevention of flood and earthquake in South America, epidemic control in south China. We have examined how the imperative for the population to participate to the exercise was met with different modes of engagement and detachment. In civil defence, it was often outright criticism that was expressed by participants who contested the reality of a nuclear war. In natural disasters, the realism of the scenography led to comments ranging between irony and scepticism. The question of the reality of the disaster was solved from a focus on being prepared for a global war that could threaten all existing life on earth to rehearsing local disasters for which there was a form of memory.

The ethnographic method allowed us to capture this change as it brings critique in different perspectives. First, it asks about the condition of entrance of the ethnographer on the field : the possibility to integrate observers defines simulation as a space open for critique, as the observer represents a figure of the public that is more detached than the actors involved. Second, an attention to the scenography reveals that bodily interactions are mediated by the use of accessories, which relieve from the charge of affective involvement. Another

form of critique then becomes possible in the detachment from the scenario, opening for modes of distraction. Third, the ethnographic method is attentive to the closure of simulation on itself, as it constructs a figure of the public to erase other forms of criticism. Simulation relies on forms of reflexivity that blur the distinction between fiction and reality, and play on different kinds of relations between actors involved. Then, as the ethnography of disasters also shows (Revet and Langumier 2011), fascination with the disaster can give way to other dimensions also present during both disasters and simulations: political tensions, gender and generational interactions, other social relationships and settings, etc.

To describe how simulations of disaster really act, we have looked at the ways they can be criticized. This was a way to pluralize the modes of engagement in the simulation, that don't appear if the scenario is the only material of research. The distinction between table-top exercise and drill appears central, as the involvement of the population bring other forms of emotional investment and expressed scepticism than those of experts. Actors of the public bring collective forms of memory and regular modes of socialisation that influence their engagement in the simulation, while experts are more engaged in the technique of preparedness as a way to anticipate the future. Preparedness as a technique of rationality must thus be compared to other forms of anticipation of the future to describe how different actors engage critically in a simulation.

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Abstract : While simulations of disasters proliferate as a technique of risk management, most of the debates in social sciences have focused on their genealogy from the cold war to contemporary natural catastrophes, and on the confusion they operate between reality and fiction. We propose to take these simulations as objects of ethnographic enquiry by looking at the mode of engagement of actors in collective performances and at the position of the ethnographer in these performances. We give three instances of such

ethnographies : civil defense in the US, natural disasters simulations in Venezuela and Peru, epidemic simulation in Hong Kong.

Résumé : Alors que les simulations de catastrophes se multiplient dans les techniques de gestion des risques, la plupart des débats en sciences sociales ont porté sur leur généalogie de la guerre froide aux désastres naturels contemporains, et sur la confusion qu'elles opèrent entre la réalité et la fiction. Nous proposons de prendre des simulations comme objets ethnographiques en étudiant les différents modes d'engagement des acteurs dans des performances collectives et la position de l'ethnographe dans ces performances. Nous donnons trois exemples d'ethnographie : la défense civile aux Etats-Unis, la simulation de catastrophes naturelles au Venezuela et au Pérou, la simulation d'épidémies à Hong Kong.