Lay perceptions of collectives at the outbreak of the H1N1 epidemic: heroes, villains and victims

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Lay perceptions of collectives (e.g., groups, organizations, countries) implicated in the 2009 H1N1 outbreak were studied. Collectives serve symbolic functions to help laypersons make sense of the uncertainty involved in a disease outbreak. We argue that lay representations are dramatized, featuring characters like *heroes*, *villains* and *victims*. In interviews conducted soon after the outbreak, 47 Swiss respondents discussed the risk posed by H1N1, its origins and effects, and protective measures. Countries were the most frequent collectives mentioned. Poor, underdeveloped countries were depicted as victims, albeit ambivalently, as they were viewed as partly responsible for their own plight. Experts (physicians, researchers) and political and health authorities were depicted as heroes. Two villains emerged: the media (viewed as fear mongering or as a puppet serving powerful interests) and private corporations (e.g., the pharmaceutical industry). Laypersons' framing of disease threat diverges substantially from official perspectives.

Keywords: collectives, disease threat, epidemic, social representations, swine flu

1. Introduction

Lay perceptions of risks are dramatized on the stage of various mass media (Bauer et al., 2001), making them more concrete and thus more real. As a special class of risk, emerging infectious diseases (EIDs) are also subject to media dramatization, as has been documented in several studies (Ungar, 1998, 2008; Wallis and Nerlich, 2005). Who are the *dramatis personae* on the stage of the disease threat drama? In this article, we argue that the main actors are *collectives*, in other words large social systems that are constituted by demographic and cultural factors, or institutionalization based on shared values and norms (Brewer and Chen, 2007; Etzioni, 1968). These characteristics empower collectives to act as coherent units. Collectives may include nations, organizations, or even informal groups and other social categories.

An analysis of the social history of disease outbreaks supports the idea of collectives as actors. For example, in many cases, nations, not individuals, are depicted as being threatened by disease. Thus, disease spreads from one nation to another, much as the Black Death plague

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advanced through Europe from Asia in the Middle Ages and avian influenza advanced through Europe some years ago. Nations can seal their borders to outsiders or block imports of contaminated foreign foodstuffs, as many did with British beef in the wake of the BSE scare. Many other collectives are actors. There are political authorities, who act to contain the disease, initiate public health measures or disseminate disease-relevant information. There are private corporations like pharmaceutical companies who manufacture vaccines and drugs for a profit. And there are groups defined by ethnicity, sexual orientation and other dimensions, who are often perceived as vulnerable to disease threat or as carriers of disease. For example, in the history of AIDS, gays, intravenous drug users, prostitutes and scientists have variously shared the dubious honour of being originators or propagators of the disease in the public eye (Joffe, 1999; Kalichman, 2009). Finally, all of these collectives are orchestrated through depictions in the mass media. Although the media have classically been treated as an "invisible environment" (Glessing and White, 1976), i.e., as part of the scenery, increasing evidence suggests they are perceived by the public as key characters in the drama.

Such perceptions are not inconsequential epiphenomena, because the symbolism with which collectives are construed has cognitive, affective and behavioural consequences. Social psychological research shows that trust in institutions constitutes an important psychological buffer against anxiety caused by fear of death (Solomon, Greenberg and Pyszczynski, 1991) or loss of control (Kay et al., 2009), both feelings often associated with a sudden disease outbreak. Traumatic collective events can lead individuals to increase trust in institutions (Chanley, 2002), while individuals' distrust of institutions like health authorities is associated with various forms of risky health behaviour (e.g., Bird and Bogart, 2005). Despite the importance of collectives as actors in the drama of EIDs, little systematic attention has been devoted to their study. In this article, we investigate collectives mentioned by Swiss laypersons at the outbreak of the H1N1 ("swine flu") pandemic in May 2009 and the themes associated with them. Before describing our study, we review research on lay perceptions of disease threat and on individuals' symbolic relationship to collectives in times of crisis.

2. Lay perceptions of infectious disease threat: from public health to social representations approaches

Much existing research on how laypersons perceive the threat of infectious disease is framed according to a public health approach, which traditionally focuses, among other factors, on the public's *knowledge* of *facts* about disease prevention (Des Jarlais et al., 2006; Eurobarometer, 2006; Raude and Setbon, 2009). Public health research thus often proposes that correct knowledge is important to contain an epidemic, thus exemplifying a more general assumption about lay knowledge and attitudes that is known as the *deficit model* of public understanding of science (Sturgis and Allum, 2004; Wynne, 1991; Ziman, 1991): insufficient knowledge leads the public to develop irrational attitudes and behaviour toward scientific or technological innovations, or sudden threatening events, as in the case of EIDs. While it is important to promote correct public knowledge about disease threat, this kind of research is silent about the symbolic and functional aspects of public perceptions of infectious diseases. It is therefore important to complement public health studies with approaches that explore lay perceptions as symbolic sense-making processes (Wagner, Kronberger and Seifert, 2002).

The social representations approach (Wagner and Hayes, 2005) emphasizes the symbolic aspects of coping with disease threat through interpersonal and mass media communication.

Extensive research by Joffe and colleagues has shown how disease outbreaks around the world are viewed as being caused by collective actors in the form of outgroups. This has been shown for Ebola as apprehended by the British press and laypersons (Joffe and Haarhoff, 2002), AIDS as viewed by Zambian adolescents (Joffe and Bettega, 2003), SARS in the British press (Washer, 2004) or avian influenza as viewed by Hong Kong Chinese (Joffe and Lee, 2004). Outgroups were construed as being at fault because of dirty practices or immoral behaviour (Joffe and Staerklé, 2007) or by intentionally (i.e. malevolently) plotting to disseminate disease (Joffe, 1999). Recent work from this approach emphasizes the role of institutions as central elements in representations of disease threat. For example, in British media coverage of MRSA (the "hospital superbug") the National Health Service plays a prominent role symbolizing a decaying institution and nostalgia for an earlier age of order and hygiene (Washer and Joffe, 2006). This recent work suggests that groups, institutions and other collectives feature prominently in laypersons' representations of disease. We therefore build on the social representations approach to disease to systematically focus on the role of collectives as actors.

3. Collectives as heroes, villains and victims

The Russian folklorist Propp (1968) distinguished several basic character types in folk tales. We use some results of his analysis without going into details of the similarities between traditional folklore and modern social representations (for a discussion, see Bangerter, 2008, or Moscovici, 1992). Two of Propp's types, the *hero* and the *villain*, are useful as a rough but vivid classification of collectives as actors. We define heroes as characters depicted as trustworthy and imbued with a protective function, whereas villains are depicted as untrustworthy and animated by malevolent intentions. We add a third type of character, the *victim*, a collective directly or indirectly affected by the consequences of infectious disease. In what follows, we define the main attributes of these three character types as well as the role they play in a dramatized social representation of disease.

Heroes

Heroes are collectives viewed as trustworthy protective agents or as leaders. These may include public health organizations or respected health professionals. Sometimes, charismatic individuals can be cast as heroes. For example, the political movement known as AIDS denialism propagates the belief that HIV is not the cause of AIDS. It relies heavily on claims made by a rogue scientist, Peter Duesberg (Kalichman, 2009). Duesberg has been depicted by denialists as a lone crusader for the truth against a corrupt and conspiratorial scientific establishment (Cohen, 1994), i.e., as a hero. A second example is the figure of the "matron" identified in Washer and Joffe's (2006) analysis of British press coverage of MRSA. This personification of a profession, namely a senior nursing figure of the past, symbolizes the strict hygienic standards that have purportedly slipped in modern hospitals, thereby facilitating the spread of MRSA.

These examples converge with theory and empirical research in the social sciences on charismatic leaders. In Max Weber's (1947) classical analysis, the charismatic leader emerges in a time of crisis where people feel anxious or helpless. The leader's vision and direction serve to reduce collective anxiety. This collective anxiety-reducing function of the hero is not unlike the functions institutions serve. Social psychological experiments (Kay et al., 2009)

show that individuals show increased support for governmental institutions when asked to recall experiences where they lacked personal control, suggesting that trust in (heroic, protective) institutions may help reduce collective anxiety in situations of sudden, unexpected crisis, e.g., outbreaks of infectious disease.

Villains

Villains are characters depicted as untrustworthy and animated by malevolent intentions. A prime candidate for the role of villain is often the disease itself, as when the British media personified SARS as a "killer," or a "single unified entity" (Wallis and Nerlich, 2005: 2634). Such allegories have a long cultural history. For example, in the Bible, the threat of disease is symbolized by Pestilence, one of the Four Horsemen of the Apocalypse. In many situations, though, laypersons tend to construe the origin of the disease as being due to malevolent actions of groups of humans. The narrative genre that best frames the actions of the villain character is the *conspiracy theory*, of which there are basically two kinds (Campion-Vincent, 2005; Wagner-Egger and Bangerter, 2007). The first kind (called *evil others* by Campion-Vincent, 2005) is historically very old. It depicts *outgroups* as villains, typically foreigners, stigmatized groups or other minorities (Moscovici, 1987). The classical example of an evil-other narrative is the belief that the Black Death was caused by Jews conspiring with the Devil to poison Christian wells (Kelly, 2005). Evil-other conspiracy theories are special cases of the more general narrative of blaming "others" (i.e., outgroups; Joffe, 1999) for causing disease, typically through attributions of unhygienic or immoral practices. What distinguishes them from the garden-variety other-blame narrative is precisely the malevolent intentions of the villain (Klein and Van der Linden, 2010). The second kind of conspiracy theory (called *evil elites* by Campion-Vincent, 2005) is more recent (perhaps having emerged with the Enlightenment; Campion-Vincent, 2005). It depicts powerful elites as villains. Examples abound in popular culture, for example, the widespread belief that the US government has engineered AIDS to control the Black population (Goertzel, 1994). It is unclear what kind of symbolic function villains serve, although by defining a scapegoat (Berkowitz, 1962), they may provide a relatively simple explanation for an otherwise unfathomable phenomenon. Moreover, evil-other narratives may also fulfil social identity needs, with the derogation of an outgroup.

Victims

Victims are collectives (sometimes personified as individuals) depicted as directly or indirectly affected by disease. Victims have ambivalent status. They are to be pitied for their plight but are also dangerous because they can potentially carry the disease (Wallis and Nerlich, 2005; Washer, 2010). Victims also often need to be protected or helped, because they are unable to cope with disease themselves. The other-blame narrative (Joffe, 1999) operates here again. Indeed, British media reports of the Ebola outbreak depicted Africans as passive victims of the virus who were unable to control it themselves. Western medical science, however, was able to contain it (Joffe and Haarhoff, 2002). As we will see in our study, developing nations are sometimes depicted in such a role. The ambivalent and potentially blameworthy nature of the victim character converges with social psychological research on victim blame and the belief that the world is a just place (Furnham, 2003) where individuals get what they deserve, suggesting that victims may also serve collective coping functions.

4. Aims of the study

The previous sections suggest that dramatized representations of collectives may fulfil important symbolic functions in coping with the threat of a new EID. Thus, the aim of this study was to document the range of collectives salient for laypersons soon after the outbreak of an EID. More specifically, we sought to ascertain whether any collectives do indeed correspond to the characters of hero, villain and victim, by exploring the themes mentioned in relation with each collective. We chose to focus on individuals and not on media because laypersons may draw on representations elaborated in the course of the recent history of EIDs to anchor perceptions of H1N1 (Joffe, 1999), representations which may not be present in current media reports.

We explored these questions by interviewing French-speaking Swiss laypersons in the context of the H1N1 outbreak of 2009. H1N1 is a new strain of the influenza virus that causes influenza in humans. H1N1 is a novel disease for laypersons, but has emerged upon the backdrop of earlier recent outbreaks of similar diseases like SARS in 2003 and especially avian influenza (H5N1) in 2005–2006. H1N1 emerged late April 2009 in Mexico and spread quickly, first within North America and then globally, arriving in Europe within days. On June 11, the World Health Organization (WHO) officially declared H1N1 the first pandemic of the 21st century. One characteristic of H1N1 is that its symptoms turned out to be very mild. Thus, the official declaration of a pandemic (based on criteria of sustained human-to-human transmission) does not necessarily correspond to the popular idea of a highly virulent "killer" akin to SARS or Ebola (Wallis and Nerlich, 2005; Washer, 2004). This state of affairs is reflected in the results of an analysis[1] we conducted of French-language Swiss print media coverage of swine flu. Figure 1 depicts the timeline of media coverage between 26 April and 15 June. Media coverage peaks around the time of the outbreak and then declines sharply. Also depicted are mentions of Switzerland and Mexico in articles about swine flu. Coverage remains visibly low, and even the June 11 declaration of the pandemic status of H1N1 does not elicit more coverage than a slight bump.

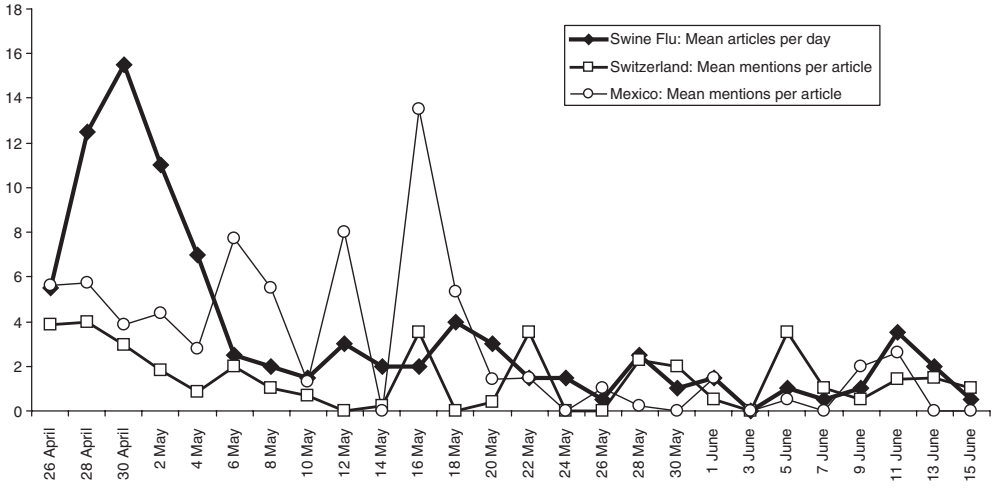

Figure 1. Media coverage of swine flu, 26 April to 15 June 2009.

To investigate lay perceptions of H1N1, we used an open-ended methodology (described in Joffe and Yardley, 2003) that is suited for initial explorations into social representations. We thus conducted semi-structured interviews and detailed qualitative content analysis and thematic analysis, using the transcripts to code the collectives that participants mentioned, as well as describe how they talked about those collectives. After an initial free-association-type question (Joffe and Lee, 2004), questions focused on participants' perceptions of the origins of the virus, of worrying about the disease, about the risk for Switzerland, as well as protective measures and comparisons with other "new" diseases.

5. Method

Participants

Forty-seven participants from French-speaking Switzerland were interviewed by three different interviewers, at their homes or in public places. Most interviews took place in May and June 2009. We used a convenience sampling scheme (already used for studying social representations of diseases, e.g., by Joffe and Haarhoff, 2002) designed to ensure a wide range of age groups, professions and approximately equal gender representation. The sample was composed of 25 men (53%) and 22 women. The following age groups were approximately equally represented: 18–29 years, 30–44 years, 45–59 years and 60–75 years. The participants' professions ranged from semi-skilled labour (e.g., railway worker) to liberal professions (e.g., geologist) and also included students, teachers, and retirees.

Procedure

Participants were asked 13 questions in a semi-structured interview:

(1) For several days, we have heard a lot about swine flu in the media. What does swine flu evoke for you? (hereafter *Representation*)
(2) Does swine flu worry you personally? (hereafter *Worry*)
(3) Is swine flu a threat to Switzerland? (hereafter *Threat to Switzerland*)
(4) According to you, how did the virus emerge? (hereafter *Emergence*)
(5) If a pandemic is declared, what consequences could it have on the current economic crisis? (hereafter *Economic Crisis*)
(6) Some people doubt the official explanations given by the authorities of the rapid occurrence of this disease. What do you think about this? (hereafter *Conspiracy*)
(7) What can one do as an individual to protect oneself against infection in case of a pandemic? (hereafter *Individual Protection*)
(8) What can Switzerland do in order to protect its residents against infection? (hereafter *National Protection*)
(9) During the past years, new infectious diseases have emerged worldwide. Have you heard about such diseases? If so, which ones? Can you describe them? (hereafter *EID Descriptions*)
(10) Where do these diseases come from? (hereafter *EID Origins*)
(11) Do these diseases worry you? What worries you specifically? (hereafter *EID Worry*)
(12) Who is responsible for combating such diseases? (hereafter *Responsible for Combat*)
(13) Is there a relation between swine flu and avian flu in your opinion? (hereafter *Swine-Avian Flu Relation*).

Data preparation and coding

Interviews lasted 15 minutes on average. They were audio-recorded and transcribed word-for-word. Transcripts were on average 1697 words in length. Transcripts were coded using a set of predefined rules to identify all instances of collectives mentioned. These included countries (e.g., *China*, *Mexico*), geographical regions (e.g., *North America*, *Africa*), groups of countries (e.g., *poor countries*, *the civilized world*), international organizations (e.g., *WHO*), national organizations (*the health system*, *the authorities*), professional groups (e.g., *physicians*, *media*, *politicians*, *farmers*), private companies (e.g., *Roche*), vaguely described institutionalized groups (e.g., *people in high places*), or individuals mentioned in a metonymic role (e.g., *Bush* as president of the United States). Not coded were references to generic groups or elliptic references (e.g., *avoiding crowds*, *coming from elsewhere*) or mentions of geographical regions not related to a collective (e.g., *Easter Island*). Because we are interested in how salient collectives are, repeated mentions of the same collectives by a participant were coded multiple times (e.g., repeated mentions of *Mexico* within the same interview), except when mentioned as instantiations of the same basic category within a phrase (e.g., *what we hear on the radio, in the news and on TV* was not coded multiple times).

Application of this procedure yielded a total of 770 collectives (participants mentioned on average 16.3 collectives). We checked interrater agreement of identification of collectives by double-coding three transcripts by two raters. Each transcript was segmented into sentences. Each sentence was coded as either featuring a mention of a collective or not. The two raters agreed for 96% of sentences, which corresponds to a Cohen's kappa coefficient of .84, indicating excellent agreement (Fleiss, 1973).

In a second step, the sentence or phrase in which each collective was mentioned was analyzed to ascertain the theme(s) associated with it. In a third and final step, the list of collectives identified was condensed to a list of 26 categories constituted by similar mentions (e.g., *scientists*, *biologists*, *experts*, *veterinarians*, *sociologists* and *university laboratories* were all grouped as *Researchers*). Ten categories with fewer than 20 mentions were removed from the analysis, which resulted in 679 mentions coded in 16 categories.

6. Results

Table 1 shows the different categories of collectives. The categories can themselves be grouped into nations and geographical areas, political and international authorities, experts and the media, and private corporations.

Because participants' discourse was produced in response to specific interview questions, we examined the association between questions and the categories of collectives that were mentioned. We created a contingency table composed of the cross-tabulation of the 16 categories and the 13 questions. To obtain a rough indicator of the strength of the relationship between each question and each category, we then computed the chi-square contribution of each cell of the contingency table. A chi-square contribution of zero means that the observed frequency is exactly equal to the expected value given the row and column frequencies. The higher the chi-square contribution, the greater the departure from expected values, in other words the stronger the association between a particular question and a particular category of collectives. We also computed the percentage of mentions of a particular category produced for a given question. This is another indication of how strongly a collective is associated with a question. Results are shown in Table 2. In what follows, we describe the discourse associated with each category of collective as well as the questions they are associated with.

Table 1. Categories of collectives mentioned in relation with the H1N1 outbreak (example mentions in parentheses), frequencies and percentage of total mentions

Category	*N*	%
Nations		
Switzerland	109	16.1
Mexico (Mexicans, Mexican farms)	101	14.9
Countries (poor countries, developing countries, every country, risky countries, disciplined countries, border countries, the South, rich countries)	44	6.5
Asia and Asian countries (Asia, China, Japan, India, Vietnam, Bangladesh)	36	5.3
United States of America (America, Americans, Bush, North America, poor Americans, American laboratories)	33	4.9
Africa and African countries (North Africa, Sub-Saharan Africa, Burkina, Egypt, South Africa, Angola, Congo, Egyptians)	31	4.6
Europe and European countries (England, France, Paris, Spain, Hungary, Yugoslavia)	26	3.8
Political and international authorities		
Authorities (government, political authorities, the state, politicians, politics)	77	11.3
International organizations (WHO, UN, international authorities, IMF, countries, associations, Red Cross)	35	5.2
Health authorities (hospitals, health system, health services, health sector, health department, health insurances, Health Office)	21	3.1
States (governments, state leaders, nations, important persons in the world, people above us, national presidents, ministers, persons in high office)	20	2.9
Private corporations		
Pharmaceutical companies (Roche, Novartis, health industries)	26	3.8
Private industry (big industry, international companies, tobacco industry, food industry, petroleum magnates, bankers, aviation companies, tourism)	23	3.4
Experts and the media		
Media (the press, reporters, newspapers)	41	6.0
Researchers (scientists, biologists, specialists, experts, research, veterinarian, professors, sociologists, university laboratories)	32	4.7
Physicians	24	3.5
Total	679	100

Whenever possible, we reproduce actual quotations of participants' discourse which we have punctuated and translated into colloquial English.

Nations and geographical areas

The category *Switzerland* was the most often mentioned, mainly in response to Questions 3 (*Threat to Switzerland*) and 8 (*National Protection*). The analysis of the themes related to Switzerland revealed that about half of all mentions expressed an absence of danger, whereas about a third expressed danger. Participants cited some reassuring features of Switzerland that could mitigate the threat of the disease, such as the affluent standard of living (*Switzerland has money, and Switzerland produces Tamiflu*), hygiene (*The reason why I would not worry too much relates to the hygiene here in Switzerland*), the good health system (*Here in Switzerland we have the privilege to have a system where the health system and hospitals are of exceptional quality, with extremely competent physicians*) and the presence of the pharmaceutical industry on Swiss soil (*It's less of a threat for Switzerland than for other countries, Switzerland is a rich country, she has the means to defend herself, and there are big pharmaceutical labs that are present*). Another (albeit less frequently mentioned) reason not to worry in Switzerland was the presence of discipline (*And the second advantage of the Swiss people is that it is a disciplined society*), education (*Switzerland is a rather educated society*) and individual responsibility (*[in Switzerland] It is the responsibility of individuals*).

Table 2. Categories of collectives, questions in response to which they are mentioned, percentage of the total number of mentions for a category and chi-square contributions

Category	Question	% of mentions	Chi-square contribution
Nations			
Switzerland	3) Threat to Switzerland	39	92.77
	8) National Protection	16	7.71
Mexico	4) Emergence	33	38.05
	5) Economic Crisis	15	6.81
Countries	9) EID Descriptions	18	15.65
Asia and Asian countries	9) EID Descriptions	28	38.06
	10) EID Origins	22	17.17
United States of America	2) Worry	21	14.88
	1) Representation	15	5.07
	3) Threat to Switzerland	15	.86
Africa and African countries	10) EID Origins	29	29.50
	5) Economic Crisis	19	5.53
	4) Emergence	16	.52
Europe and European countries	10) EID Origins	15	4.25
Political and international authorities			
Authorities	12) Responsible for Combat	61	48.50
	6) Conspiracy	18	10.23
International organizations	12) Responsible for Combat	77	44.66
States	12) Responsible for Combat	65	15.36
Health authorities	12) Responsible for Combat	57	6.17
Private corporations			
Pharmaceutical companies	5) Economic Crisis	30	17.00
Private industry	12) Responsible for Combat	48	10.66
	5) Economic Crisis	17	1.20
Experts and the media			
Media	6) Conspiracy	28	19.35
	1) Representation	20	14.88
Researchers	12) Responsible for Combat	44	6.00
	8) National Protection	19	4.55
Physicians	12) Responsible for Combat	67	19.92

Reasons mentioned for being less optimistic included the indiscriminate nature of the virus (*Viruses do not have any borders*), international travel (*Because a lot of foreigners come to Switzerland, and a lot of Swiss people travel*), and the impossibility to isolate Switzerland from other, contiguous countries (*If two countries are threatened, I don't see why Switzerland shouldn't be*). To cope with danger coming from foreign countries, some participants suggested (sometimes tongue-in-cheek) closing real and even imaginary borders (*I don't know, put a big glass bubble over Switzerland*), or to monitor people entering Switzerland (*In an extreme case, I think making people coming from Mexico undergo medical examinations before they enter Switzerland*).

The second most cited category was *Mexico*, notably regarding the emergence of the pandemic (Question 4), and less markedly the impact of the pandemic on the economic crisis (Question 5). Question 4 led to mentions of pig farms (*As I said, in Mexico, in pig farms*), the transmission of the virus from pigs to humans (*Is it a virus that comes from pigs which mutated to human flu*), the lack of hygiene (*Since it has started there, perhaps they eat on the ground a lot, then there are viruses in the food they eat*) and Patient Zero in Mexico (*They even showed the picture of the poor little boy who apparently is the source of the disease*). The closing of public buildings such as theatres, restaurants and schools was the main theme associated with the economic consequences of the pandemic (*In Mexico they*

had a hard recession during two weeks, they had to close public buildings). Closing of borders was also mentioned for Mexico as a precautionary measure that should be taken in order to preserve other countries (*To really diminish or avoid flights to Mexico could be something to be required*).

The third most cited category, *Countries*, occurred mostly in response to Question 9 *EID Descriptions*, featuring the inequality of rich and poor countries in the face of the epidemic, the latter being far more threatened by the outbreak (*These are diseases that don't have a high impact here, that we hear about in the newspapers, but which have an impact each time in countries where they have less means to care for themselves*). Third World countries were also cited as origins of past EIDs (*So of course these are each time diseases that come from the Third World*) when this topic was tackled in the interview (Questions 9 and 10). The theme of discipline that appeared in relation to mentions of Switzerland was enlarged here to "disciplined countries" (*behaviour and discipline to wear a mask even here in disciplined countries*), and contrasted with mentions of the "lack of culture" of poor countries (*I think however it began in very poor countries which have a lack of culture*; recall that Switzerland was also considered as an "educated" nation).

Our participants cited the category *Asia and Asian countries* in response to Questions 9 (*EID Descriptions*) and 10 (*EID Origins*), with specific mentions of avian flu and SARS (*SARS, the respiratory syndrome, I don't really remember, particularly affected Asia*). Lack of hygiene and poverty were also associated with this category (*We spoke about avian flu that came from China, you've got people living with chickens in the kitchen, I mean it's a question of hygiene, of lifestyle*).

The *United States of America* was mostly mentioned as the second origin of the epidemic when participants discussed their personal worries (Question 2, *Worry*), and their general representation of the epidemic (Question 1, *Representation*) (*I know it affected the United States afterwards and also a bit Japan I think*). Some participants were suspicious of the existence of American conspiracies about H1N1 (*Another American conspiratorial manipulation*), while others stressed the precarious US health system (*In the US where the health system is horrible, I mean they let people die in waiting rooms, people don't even have the possibility of having insurance*). The issue of closing borders to protect Switzerland also was mentioned (*Put all Mexican and American citizens in a bunker*).

Africa and African countries were primarily associated with the question of the origins of EIDs (Question 10). Several diseases were mentioned as having originated in Africa, like AIDS and malaria (*I'm not an expert either, but I believe AIDS for example originally was a test that had gotten out of hand deep in Africa and later on, well there were cases and then it propagated in the whole world*). Mentions of lack of hygiene were infrequent (*But it's clear that when hygiene conditions are not the best, like in Africa, well I think that can generate viruses even without human factors*).

Participants cited *Europe and European countries* in response to Question 10 (*EID Origins*), mentioning diseases like Spanish Flu, cholera, AIDS, tuberculosis or mad cow disease. (*There are typical [diseases] for each continent for each climate, here as well, in Europe we have diseases like tuberculosis, we are the ones who have spread it to countries like Africa, North America and South America.*)

Taken together, nations and geographical regions are the most frequent collectives mentioned. Switzerland is mainly perceived as not at risk and several of its national attributes are responsible for this (wealth, proximity of the pharmaceutical industry, national character). Reasons for perceiving risk also are related to attributes of Switzerland, particularly its small size and central geographic location, as well as its attractiveness for foreigners and the propensity of its citizens to travel.

Clearly, many nations and geographical regions are perceived using the victim character, be it because of the current pandemic (*Mexico*, *United States of America*) or past EIDs (*Countries*, *Asia and Asian countries*, *Africa and African countries*, *Europe and European countries*). The ambiguity of the victim character is palpable, as some countries are attributed a lack of hygiene (*Mexico*, *Asia and Asian countries*, *Africa and African countries*), and contrasted with rich, well-educated and disciplined *Switzerland*. Dramatization of nations through the figure of responsible victim may be one way by which the belief in a just world (Furnham, 2003) may operate. Interestingly, whereas *Asia and Asian countries* and *Europe and European countries* are also mentioned in the question of the origins of past EIDs, *Africa and African countries* are more strongly related to this question (as revealed by the chi-square contributions in Table 2). This is an instance of other-blame narrative (Joffe, 1999; Joffe and Staerklé, 2007): some outgroups are more blamed than others. Victims are ambiguous in a second way: they may transmit pathogens to the ingroup. Thus, numerous mentions of closing borders are present in the interviews. The permeability of national borders for diseases in the modern world, owing to the ease of travel, led some respondents to mention imaginary scenarios, such as a big glass bubble or putting immigrants in bunkers.

Political and international authorities

The category *Authorities* was mainly related to Question 12 (*Responsible for Combat*) and Question 6 (*Conspiracy*). In the context of Question 12, there were numerous mentions of official action on the part of authorities (*Authorities in each country have to take measures, organize prevention campaigns and campaigns of measures to combat the propagation of the disease*). This potential action is seen as either positive (*Even if we were to be threatened, I'm sure the measures taken by the State would be more than drastic*), or ineffective due to insufficient financial means (*The state is the administration that must control, but that doesn't have the means to do so*). There were also a few mentions of money, either to fight the disease (*The state that must free up money for hospitals and medicine*) or to profit from it (*The majority of politicians and the doctors who advise them, the large majority is looking for profit because behind them are the pharmaceutical factories*). Participants expressed a fair level of distrust in authorities, mainly in the context of Question 6 (*In my opinion, the authorities want, I mean tell us what they want to tell us, and I don't think we are aware of everything and maybe they aggravate the situation or conversely they minimize the situation I don't know*).

International organizations were seen as one of the main actors (together with *Authorities*) responsible for fighting the disease (Question 12) (*The WHO is a strong central element that declares the levels of, I mean that declares the pandemic*). Participants are equally divided between those who see the action of *International organizations* as useful (*At the worst, generally, the WHO puts enough things into place on a global scale so that epidemics are quickly suppressed*), and those who expressed distrust in them (*The WHO, I don't know this organization but whose puppet are they. Always, always doubt, always*).

The category *Health authorities* featured mentions of trust in the context of Question 12 (*Responsible for Combat*) (*The health services of the state, in the sense that in many countries there is a cell of doctors that takes care of this kind of problem but in partnerships with politicians*), and some mentions of a rise of health costs (*And so the health insurances, they will suffer*).

Participants mentioned *States* ambivalently in the context of Question 12, associating both trust (*States, nations, countries that have to protect their citizens, feed them, so they made laws for that*) and distrust (*I think at the end the media are manipulated by the states*) with them.

Taken together, the categories of political and international authorities are viewed with a mixture of trust and distrust. They are trusted because they are viewed as responsible for the fight against disease. At the same time, various remarks highlight their potential ineffectiveness or allude to their potential implication in conspiracies. Political and international authorities are ambivalent figures that could emerge either as heroes or as villains in a full blown drama. Interestingly, this result suggests that in real anxiety-provoking situations like disease outbreaks, trust in institutions is not a universal coping strategy to buffer against anxiety (as shown in laboratory research, Kay et al., 2009; Solomon et al., 1991). Rather, such situations may increase both trust and distrust in institutions. A question for further research would be to study on which basis (such as ideological preferences) trust and distrust develop.

Private corporations

Pharmaceutical companies were negatively depicted in the interviews, mainly being associated with economic profit by about two-thirds of the participants mentioning them (*But it's clear there'll always be losers, that is, people who will be infected, but I mean that could be a benefit for the health industries*), especially in the context of Question 5 (*Economic Crisis*), by contrast to other economic domains. Some participants nevertheless emphasized the utility of pharmaceutical companies (*One can say that these laboratories are not good guys, but they still have developed good medicine*), while others suspected on the contrary an economic conspiracy (*I think that the fact that the media are talking a lot about it is also related to the pharmaceutical [companies]*).

In the same vein, distrust and conspiracy as well as power were attributed to *Private industry* in fighting the disease (*The states cannot do much anymore, the industries are the ones who control their business* or *The industries always have the last word*). A minority of participants even suggested that private corporations may have created diseases for profit (*Several unproved accusations on previous cases have been established, [the cause] would be rather of a commercial nature on the part of companies concerned by the apparition of the virus*).

Taken together, private corporations are clearly viewed as villains. Their power, their circumstantial association with disease (in the case of the pharmaceutical industry) and their less-than-charitable intentions make them the target of evil-elite conspiracy narratives.

Experts and the media

The *Media* were mainly associated with Question 6 (*Conspiracy*). Mentions of distrust were frequent (about one quarter of mentions), for example that the media hide part of the truth (*And we are completely, how shall I say, influenced by the media and finally one doesn't know what is true and what is not, I mean one must really weigh the pros and cons and put things in perspective, have one's own opinion and try to think a bit further than what we are shown, it's maybe the surface of the iceberg but underneath I don't dare imagine what there is*). Another reason for distrust is that they might be controlled by the authorities (*Well, maybe, I think at the end the media are manipulated by the states*), the powerful (*I mean, the media are in any case controlled by the most powerful*), or the pharmaceutical industry (*Very often with the media there is also a whole financial interest behind relative to pharmaceutical laboratories who encourage people to consume more, also to take certain medicine*). On the other hand, there were some positive mentions of the informational role of the media (about one quarter of mentions) (*And the newspapers do their job well*). In the context of Question

1 (*Representation*), participants accused the media of exaggerating the facts (*And then in my view, it was strongly picked up by the media. They like "pandemic" because it's global tragedy that's good*) and noted that media reports often amplify fear in the population (*The media talk about it, so everyone is worried*).

Participants judged the category of *Researchers* as responsible for acting against the epidemic (Question 12, *Responsible for Combat*) (*I don't know scientific researchers, doctors, people who do research in chemistry to find antibodies, antiviruses all that*), in order to protect Switzerland from contamination (Question 8, *National Protection*) (*Let the experts of the country do their job, veterinarians, doctors, chemists, biologists, put into place an organization, a crisis management. At that level. Give them total trust, give them the budget they need*).

Physicians were also trusted to combat the disease (Question 12, *Responsible for Combat*) (*So of course the doctors specialized in epidemics, it's clear they are the best they are the ones who know the most*). Expressions of distrust (*People are, politicians, even doctors, not all but many doctors are out for gain*) were rare. Participants also advocated allocating them financial means (*So have resources, the doctors, the hospital, structures must not be taken by surprise*).

All in all, the media emerge, perhaps surprisingly, as a clear villain of the disease outbreak drama. We are far from the traditional view of the media as being an "invisible environment" (Glessing and White, 1976) or an independent source of information. Rather, the media are viewed either as being a puppet of powerful interests like the State or shadowy private corporations, or as following their own agenda of fear mongering. This theme is consistent with a generalized increase of scepticism in the media (Gronke and Cook, 2007). However, experts like researchers and physicians are trusted and viewed as heroes, so much in fact that several participants advocated giving them unlimited resources. They thus clearly correspond to the hero character.

7. Discussion

Collectives have been identified in social psychological research as fulfilling important symbolic functions in coping with suddenly emerging threats like disease outbreaks. This qualitative study aimed at exploring lay perceptions of the collectives involved in the H1N1 influenza outbreak in Switzerland, by detailed qualitative content analysis and thematic analysis of semi-structured interviews.

We drew upon a dramaturgical framework (Propp, 1968), distinguishing three main characters that can frame perceptions of collectives: heroes, victims and villains. We can conclude that the heroes of the disease threat drama of the 2009 H1N1 outbreak are primarily experts like physicians or researchers. It is in them that the public placed initial trust. Health authorities are also viewed positively, as well as political authorities and states to a lesser extent, although the latter were also perceived ambivalently, e.g., as partly ineffective.

The villains of the H1N1 drama are on the one hand clearly the media – akin to poor players that strut and fret their hour upon the stage in fear mongering, or even worse, puppets manipulated by hidden forces, as an instance of the evil-elite conspiracies (Campion-Vincent, 2005) we described in the introduction. On the other hand, private corporations like the pharmaceutical industry also emerge as villains, which is perhaps not surprising, given these corporations' drive towards profit, that may inspire mitigated feelings in the population about their care for people's health (without speaking of the responsibility of financial companies in the 2009 economic crisis, which may have increased feelings of distrust).

The victims in the H1N1 outbreak drama are poor and less developed countries, e.g., Mexico and African and Asian countries. However, there seem to be no innocent victims in the play: these countries are also singled out for their lack of hygiene, discipline or culture as the origin of many EIDs (this is especially true for Africa). This is consistent with earlier work on other-blame (e.g., Joffe, 1999); what is novel here is the ambivalent status of victims.

Finally, the main character, Switzerland, is left to its destiny, most people seeing safety whereas others apprehend danger in its encounter with the disease. However, it owns some good weapons for its fight: it is rich, its citizens are educated and disciplined, and it has good medicine to cope with the chaotic surrounding world, full of sound and fury. Interestingly, participants' mentions of Switzerland reflect aspects of Swiss national identity and self-understanding. In particular, historically, Swiss national identity has been characterized by a dilemma between *integration* with (and dependence on) surrounding countries and *isolation* (or independence) (Bergier, 1992). On the one hand, Switzerland is integrated with and dependent upon its neighbours. Unlike many other modern European nations, Switzerland is not distinguishable from surrounding countries by territorial, linguistic or cultural factors. Moreover, Switzerland's geographical situation has made it historically a crossroads of Europe. On the other hand, Swiss self-understandings have always emphasized independence and even isolation in the founding of the Swiss nation by a series of alliances between its original cantons, as in the legend of William Tell or in the mythical construction of the 1291 federal pact (Froidevaux, 1997). A modern expression of Switzerland's yearning for isolation and independence is its well-known policy of political neutrality, or the espoused "hedgehog" military strategy during the Second World War and the Cold War, which entailed sealing off Switzerland's borders to all outsiders and withdrawing its army to the Alps in case of foreign invasion. The dilemma between integration and isolation is expressed in participants' mentions, e.g., when describing the lack of frontiers of the virus (integration) or when suggesting putting a glass bubble over Switzerland to keep the virus out (isolation).

Taken together, our results illuminate some of the characteristics by which various collectives are perceived during a disease outbreak. These characteristics may serve to construct a symbolic representation that enables laypersons to make sense (Wagner et al., 2002) of the conflicting and discordant pieces of information circulating in the media and in everyday conversations in the context of a disease outbreak. At the same time, such symbolic representations may enable psychological functions like belief in a just world and victim blame (Furnham, 2003), other-blame (Joffe, 1999) and buffering against loss of control (Kay et al., 2009) and fear of death (Solomon et al., 1991).

The present study has limitations. First, our sample is rather small. Thus, we do not claim that the discursive patterns we have described are representative of the public as a whole. However, this was not the purpose of the study. Rather, our qualitative perspective enabled us to map certain patterns; it is likely that these represent varieties of discourses that may be endorsed to different extents depending on the ideological preferences of individuals and the groups they belong to. A second limitation is that we have only studied laypersons' perceptions. We have not analyzed whether mass media depictions of disease threat like the H1N1 outbreak also feature the hero, victim and villain characters (indeed, whether they transmit them to the public). Subsequent studies might address this issue.

Despite these limitations, our findings have an important implication for understanding how laypersons view EIDs. Given that media coverage of novel, risky events often is sensationalistic and dramatized (Bauer et al., 2001; Dudo, Dahlstrom and Brossard, 2007), our results suggest that such a dramaturgical frame is adopted by laypersons. Such a frame is at odds with the scientific way of framing disease threat, i.e., as an abstract risk. At least some of the misunderstandings of science attributed to laypersons may be due to these potentially

incommensurable frames, rather than to deficits in understanding. At the same time, it is important to recognize these differing frames because public health authorities are not perceived by laypersons as neutral, objective sources of information, but rather as actors within the disease threat drama.

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Note

1 We counted the number of articles per day featuring the key word *swine flu* (*grippe porcine*) in two leading French-language Swiss newspapers (*Le Temps*, *Le Matin*). For each article, we also counted the number of mentions of Switzerland and Mexico. Data depicted in Figure 1 were averaged over two days.

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