D1.5

Report on Narratives and Urban Myths

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EXECUTIVE SUMMARY

This report on 'Urban Myths and Narratives' takes many different directions in the investigation of narratives and urban myths surrounding epidemics and vaccination, so that a comprehensive framework is set to explain and better understand the public perceptions that underlie infectious disease outbreaks. **Section 1** makes some preliminary remarks and outlines the principal objectives.

The report continues to provide the theoretical context behind urban myths, contemporary legends, rumours and other forms of folk narratives, as regards their qualitative elements, purpose and importance of those narratives for the community and the individual alike. In particular, **Section 2** of the report discusses the significance of myths and legends for humans, in helping them to understand and conceptualise the complexities of the world. Extensive reference is made to the urban myths and legends, concerning the ways in which those survive in time, how they become generated and then diffused to the public. We provide detailed descriptions of the characteristics of urban myths and legends, so that these notions and terms are clearly established for the reader. This section concludes with the identification of the psychosocial functions of urban myths and legends.

In addition to the aforementioned theoretical context built around the functions of the folk narrative, in **Section 3** we explore theories of narrative discourse and rhetoric devices, that are most relevant to communication strategies and tactics employed by various actors (e.g. government officials, healthcare professionals, public etc.) during the outbreak of an infectious disease. The extensive analysis of discourse narrative and modes of persuasion and engagement, aims at creating yet another framework where the impact of the various linguistic tools used in communicating messages and symbols could be assessed. The main rhetorical tropes are also presented, namely metaphor, synecdoche, metonymy and irony, which make frequent appearance in the communication during epidemics.

In **Section 4**, we explore major pandemics in older history, namely the Black Death, the Smallpox pandemic and the 1918 influenza pandemic, highlighting popular conceptions and myths generated at the time, in order to identify recurring patterns of urban myths that still exist in our days. This retrospective approach has also been useful in understanding the societal dynamics that allow myths and legends to be incubated and sustained in collective memory for people.

The description of infectious disease outbreaks continues in **Section 5**, where the major epidemics in the 21st century are presented. This section is distinct from the previous one, as the impact, spread and communication of infectious diseases is explored under the lens of globalisation, which characterises our present. For each major epidemic, there are detailed accounts of the associated myths and conspiracy theories that emerged during the time, making some preliminary connections with the anti-vaccination movement, which has seen a considerable growth within the last few years, in connection with the development of the internet and Web 2.0. This section also draws from studies on the media discourse and conceptual metaphors that had been used during the outbreak of Foot and Mouth Disease, SARS and H5N1 influenza. Finally, following a thorough research, this section summarises and lists all the urban myths that appeared during the 2009 (H1N1) pandemic as regards the outbreak itself, as well as the preventive measures suggested by the officials. Findings suggest that many of the urban myths associated with the most recent pandemic, had also been projected in previous disease outbreaks.

Section 6 places under the microscope the anti-vaccination movement, and different strategies that are used to influence perceptions and behaviour of the general public in their final decisions. The narrative

discourse is also presented for this group, along with information about the channels of communication that are used to diffuse their messages. This section closes with a small-scale research study across four different countries, where the aim was to explore the type of information that a person can be presented with, as a first attempt to retrieve some details about an infectious disease outbreak, a virus or a vaccine. Results indicated that people who make use of search engines to retrieve information from the internet, are very likely to be presented with urban myths and legends surrounding the disease and vaccinations.

Finally, **Section 7** presents the outcomes of our research in various sources, describing further the most popular narratives and urban myths in the context of the H1N1 outbreak or pandemics in general. The different sources are assessed in terms of their narrative structure through the technique of discourse analysis, identifying implicit and explicit narrative motifs that underlie public perceptions of infectious diseases.

1. Introduction

Preliminary remarks

This report (Deliverable D1.5) is the result of the comprehensive work performed in the scope of Work Package 1 *Population behaviour during epidemics*, which aims to collect and assess evidence about population behavioural response to infectious disease outbreaks, and about how communication may change behaviours[1]. This report focuses on the urban myths and narratives surrounding epidemics and vaccination, in an effort to better crystallise existing knowledge from the field and discuss more in-depth the role of the folk narratives and rhetorical devices used in communications with the general public, and level of impact these have in shaping attitudes and behavioural responses. To achieve this, it was deemed necessary to take a multi-faceted approach, presenting a solid theoretical framework within which the different functions and elements of myths are presented and analysed, before moving to analyse current popular narratives and urban myths concerning the most recent epidemics.

The structure of this report aims at presenting key information and theoretical concepts that could find direct application in the narrative discourse around the outbreak of infectious diseases, and establish some connections between present perceptions about illness and behavioural patterns with those observed in the past, to enhance our understanding of how society and individuals can become affected by the various manifestations of folk narrative. While all different cultures in the world have had experiences in the past of infectious disease outbreaks, epidemics or pandemics, there are certain qualitative elements for each culture that produced various responses towards the disease, and such events were 'embodied' differently in the traditions of each culture.

It is critical to highlight that globalisation as experienced in our days, among other things also produces – via developments in the field of Information and Communication Technologies – hybrids of cultures that exceed geographical boundaries through synchronisation of individuals' behaviours, emotions, attitudes or even concerns that are shared in the global communities. However, this might lead to detachment from local tradition and collective experiences of the past, creating gaps that can allow for 'imported' urban myths and legends to grow inside, and conspiracies take a more global dimension.

Principal objectives

The report D1.5 *Narratives and urban myths* has the following principal objectives:

1) To provide the theoretical context behind urban myths and contemporary legends, their qualitative elements, purpose and impact for the community.
2) To draw attention to theories of narrative discourse and rhetoric devices that are most relevant to communication strategies and tactics during pandemics.
3) To investigate and report urban myths and legends that have been closely associated with different pandemics in history, and associated behaviours or attitudes by the general public at the time.
4) To collect and analyse main popular (folk) narratives in text or audiovisual format from different sources, in order to identify implicit and explicit narrative motifs that underlie public perceptions of infectious diseases.

[1] TELL ME Description of Work, *WP1 Population behaviour during epidemics*, p.5.

The Universe is made of stories, not of atoms.
Muriel Rukeyser, *The Speed of Darkness*

2. The journey from myth to the urban myth

Within the labyrinth of collective human consciousness, experiences, perceptions and realities concerning the outbreak of infectious diseases, small Minotaurs live scattered in the form of conspiracy theories, urban myths and contemporary legends. Finding one's way through this labyrinth involves navigating a tangled thread of stories and rhetorical tropes that manifest subjective realities, as unique as our fingerprints. In this first part, we shall endeavour to trace the roots and better crystallise the conception of the myth, exploring its 'anatomy' and purpose, for better creating those links with contemporary manifestations, such as urban myths and legends. The narrative has always been the vehicle which carried a myth over time and, therefore, it is the qualitative elements of the narrative that will be driving this report inside the labyrinth, for identifying communication tactics and strategies during the outbreak of an infectious disease.

2.1 Portrait of the myth

Before we start unravelling the approaches taken to explain the 'myth' as phenomenon, it is important to point out that myths are not static in narration or content. At their core, myths are stories, and, as such, they are transformed in such a way that they can perfectly adapt to and effectively match the cultural framework of the societies in which they circulate. This process of transformation is crucial in order that any story may acquire some meaning, which in turn allows people to identify themselves with certain elements of the story.

So, the question arises: what exactly is a myth? There is unfortunately no one answer to this question, despite the best efforts of scholars over the last two centuries to define what a myth is by enlisting the support of theories from various disciplines. Geoffrey S. Kirk, a classical scholar, in his book *The nature of Greek myths* (1974) attempts a distillation of different schools of thought[2], qualifying five 'monolithic' theories around myths:

- Max Müller (*Philologist*) – Myths as an allegory of natural (meteorological and cosmological) phenomena, personification of events.
- Andrew Lang (*Historian and Anthropologist*) – Myths constitute an explanatory 'proto-science', an attempt to explain the world.
- Bronislaw Malinowski (*Anthropologist*) – Myths validate social institutions, are charters of social customs and beliefs providing a "narrative resurrection of a primeval reality".
- Mircea Eliade (*Historian of Religion*) – Myths restore the power of creative origins.
- James George Frazer (*Anthropologist*) – Myths do not stand by themselves and are closely associated with rituals, a misinterpretation of magical rituals.

The function of myths also came to be examined under the lens of psychology, as manifestation or products of the psyche (Kirk, 1974). Sigmund Freud emphasized the close connection between myths and dreams, in the way these are created, based on (unfulfilled) desires, repressed emotions and ultimately the unconscious mind. While according to Freud the origins of a myth derive from personal experience, this

[2] According to earlier works by Kirk (1970), the basic truth and starting point for any theory is that 'myths are traditional stories'. This is in accordance with the etymology of the word 'myth' [in Greek, μύθος : *mythos*], used by Plato interchangeably for 'narration' or 'speech' [in Greek, λόγος: logos] to connote the telling of a story. This laconic definition that myths are basically traditional tales, summarises the versatile nature and specificities of myths.

was contested by another eminent psychologist of the 20th century, Carl Gustav Jung. For Jung, myths surface out of the collective unconscious, which aims in turn to reveal and communicate its presence to the conscious mind. Jung's theories extended to the presence of "archetypes" or symbols which are embedded in people's mythic heritage, thereby giving them a link with past experiences and thus interpret atypical experiences of the present.

These are only a few of the theories developed to explain the appearance and functions of myths, and, as Segal (2004) points out, it appears that 'myths' exist as a subset for each discipline to support their respective theories – there is no theory of 'myth as a myth'. Segal (2004) also suggests that three principal questions should be addressed by scholars of all disciplines: a) the origin (how and why myths arise), b) the function (how and why myths persist) and c) subject matter (reference to the myth – literal vs. symbolic). It should be noted that, like Kirk (1970), Robert A. Segal also defined myths as traditional stories – a simplistic, yet all-inclusive definition.

This search for what constitutes (or what defines) the myth would be incomplete without making reference to Plato, whose myths described in the *Republic* are presented as fictional accounts that convey truths – or truthful elements – lacking however reasoned judgement and dialectical argument. For Plato, myths can become a tool for persuasion as the small truths (however falsified) living inside a story much as specific styles of narrative, have the capacity to reach deeper (and take root) into people's consciousness sometimes converting the irrational into the rational. Plato also makes a division between 'major' and 'minor' myths, and pinpoints the significance of storytelling by mothers and nurses, who could adapt the myth freely according to the circumstances: "*Then we must first of all, it seems, supervise the storytellers. We'll select their stories whenever they are fine and beautiful and reject them when they aren't. And we'll persuade nurses and mothers to tell their children the ones we have selected, since they will shape their children's souls with stories much more than they will shape their bodies by handling them*." (Plato, Republic 377c).

All in all, myths are defined by one basic principle – they give meaning to otherwise incomprehensible phenomena that go beyond human experience, aiming to provide answers to the most complex questions around human existence. Therefore, the context and nature of myths vary greatly, with most prominent thematic units including cosmology, cosmogony, eschatology, aetiology, destiny and fate, eternity, and re-birth. The myth is a unique form of storytelling or narration that is passed on by word of mouth, from one generation to the next, without the creator of the myth being revealed/known[3]. It is exactly this characteristic that converts a myth into a traditional story, which is constantly changing, driven by the forces of cultural meaning (Detienne, 1986). If conditions in a society change, also the myth needs to change in order to survive (a criterion of vitality), which is the key for its transmission from one generation to the next.

Since we have shown that there are as many definitions for myth as there are theories about its origins and functions, points made above need to be taken on board in order to provide a useful framework to explain population behaviour and attitudes towards vaccination and infectious diseases. It is evident that myths and cultures have always been interconnected (cultures forming the myth or myths forming the cultures?), and this relationship is rooted deeply in humans. And so is their need for telling or listening to stories.

[3] In the words of W.H. Auden, from the poem *Archaeology*: "*Poets have learned us their myths, but just how did They take them? That's a stumper.*".

2.2 The notion of disease in myth and tradition

Man's perpetual struggle to conquer physical decay and control/counteract disease, dates back to the ancient times, an example of which would be the Archaic period in Greece, when some of the greatest poets and story-tellers lived, such as Hesiod, Homer and Aesop. This struggle for control of disease is eloquently depicted through the myth of Pandora, which appears for the first time in *Theogonia* (Θεογονία, *Theogonía)* and *Works and Days* (Έργα και Ημέραι, *Erga kai Hēmérai)*; two epic poems composed by Hesiod around the 8th century BC. According to the myth, Pandora, the first mortal woman, was offered by the Gods as a gift in marriage to Epimetheus (brother of Prometheus). In addition, Zeus gave Pandora a large and extraordinarily beautiful jar (*pithos*) – containing all the evils of the world – which she was instructed not to open under any circumstances. Pandora's curiosity finally got the better of her and so she opened the jar, unleashing all the evils upon mankind. Hesiod's verse describes the outcome of Pandora's action:

> *For ere this* [the opening of Pandora's jar] *the* ***tribes of men lived on earth remote and free from ills and hard toil and heavy sickness which bring the Fates upon men; for in misery men grow old quickly****. But the woman took off the great lid of the jar with her hands and scattered all these and her thought caused sorrow and mischief to men.* ***Only Hope remained there*** *in an unbreakable home within under the rim of the great jar, and did not fly out at the door; for ere that, the lid of the jar stopped her, by the will of Aegis – holding Zeus who gathers the clouds. But the rest, countless plagues, wander amongst men; for earth is full of evils and the sea is full.* ***Of themselves diseases come upon men continually by day and by night, bringing mischief to mortals silently; for wise Zeus took away speech from them****. So is there no way to escape the will of Zeus.*
>
> (Hesiod, Works and Days, II 90-105)

This verse, a fragment of a narrative, provides a wealth of information about how ancient societies viewed and interpreted phenomena. Though a detailed analysis of this narrative would be beyond the scope of this report, it is worth making a few observations. First, the sense of control, or the idea that diseases can be confined, by creating an image of diseases (evils) being kept securely inside a container. Another use of imagery is that of a disease moving as a 'silent assassin', making it easier for the disease to escape the control of man. Second, is the fact that Hope paradoxically was kept inside the same container with all the evils; a connotation of the dual nature of Hope, which can be simultaneously a *curse* and a *blessing*.

The great fabulist Aesop, in his fable *Zeus and the jar of good things*[4] indeed considers Hope to be a useful and good thing for humans:

> *Zeus gathered all the useful things together in a jar and put a lid on it. He then left the jar in human hands.* ***But man had no self-control and he wanted to know what was in that jar****, so he pushed the lid aside, letting those things go back to the abode of the gods. So all the good things flew away, soaring high above the earth, and Hope was the only thing left.* ***When the lid was put back on the jar, Hope was kept inside****. That is why Hope alone is still found among the people, promising that she will bestow on each of us the good things that have gone away.*

There are obvious similarities shared by the Pandora myth as described by Hesiod and the fable of Aesop. Although an important element in the narrative has changed quite significantly (evil things versus good

[4] Aesop's Fables. Translated by Laura Gibbs (2002). Oxford University Press.

things), lack of self-discipline, or curiosity, is the central moral in both stories, with Hope being placed at the epicentre. Considering that Aesop lived almost two centuries after Hesiod, the variations observed in these two stories, is a fine example of how easily myths and stories can be transformed, and how malleable their plots and narrative structures can be, depending on the period, the audience and the purpose for retelling a story, while certain key features remain unchanged.

Disease occurs in Homer's Iliad as supernatural punishment or demonic possession. What is more, the Gods do not restrict themselves to performing acts of punishment by unleashing disease, but are also responsible for ridding the populace of that same disease, thereby revealing a sense of fatalism common to people throughout time. This popular belief in divine intervention regarding the cause of and cure for disease was overturned by Hippocrates, who turned instead to pathological causes and symptoms of a disease, together with certain environmental observations

> *It is thus with regard to the disease called Sacred: It appears to me to be nowise more divine nor more sacred than other diseases, but has a natural cause from the originates like other affections.* ***Men regard its nature and cause as divine from ignorance and wonder, because it is not at all like to other diseases[5].*** *And this notion of it divinity is kept up by their inability to comprehend it, and the simplicity of the mode by which it is cured, for men are freed from it by purifications and incantations*[6].

This attempt at making sense of the world by suggesting that diseases were caused naturally and not inflicted by the Gods, challenged, of course, the religious doctrine of the time. This brings in mind also Nicolaus Copernicus, whose astronomical observations and theories displaced notions – shared by all different cultures at the time – about the Universe, and as extension to this 'new reality', new philosophical, mathematical, religious and other concepts, emerged.

Another controversial figure that lived at the time of Copernicus was Martin Luther whose teachings inspired the Protestant Reformation. There is an interesting excerpt[7] from a pamphlet that Martin Luther produced[8] in 1527, which gives an idea of how perceptions regarding an infectious disease could be shaped, and, as with the Pandora myth, there is strong use of imagery and an overall sense of fatalism for humans:

> *Now if a deadly epidemic strikes, we should stay where we are, make our preparations, and take courage in the fact that we are mutually bound together … so that we cannot desert one another or flee from one another. First,* ***we can be sure that God's punishment has come upon us, not only to chastise us for our sins but also to test our faith and love*** *– our faith in what we may see and experience how we should act toward God; our love in that we may recognise how we should act toward our neighbour. I'm of the opinion that* ***all epidemics****, like any plague, are spread among the people by* ***evil spirits*** *who* ***poison the air*** *or* ***exhale a pestilential breath****, which puts* ***a deadly poison into the flesh****.*

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[5] This is a statement of great significance today, for people in modern societies still tend to be mystified by what is hard to explain or understand. Indeed, it is the 'invisibility' and 'silence' of an infectious disease as this spreads around a community that makes it inevitable but think of the imagery produced in the myth of Pandora, as described in Hesiod's *Works and Days*.

[6] Hippocrates' *On the Sacred Disease*. Translated by Francis Adams (2009). Dodo Press.

[7] Taken from Justin K. Stearns book *Infectious ideas*, JHUP, 2011.

[8] This form of communication has been described in an Economist article as the *social media of the 16th century*, 17 December 2011, available from <http://www.economist.com/node/21541719>

As we have seen already, all humans feel this inner need to make sense of the world and find answers for things that go beyond ordinary experience. Both mythology and modern science aim to satisfy this need, each from different points of departure. However, myths and science rarely move in parallel directions, but, rather converge at certain points: the rational analysis of evidence can paradoxically make science overly complex for the general public, which in turn may trigger anxieties or fears. In such times, humans might find refuge in myths and mythological metaphors that they can relate to and connect more easily. But what happens when modern science produces an explanation for the world's mysteries, demystifying and weakening the myth?

2.3 From myth to legend: Transcendent realities vs. falsified truths (?)

While retaining the principal purpose of myths, that is, to better 'explain' the world to humans - conscious at the same time of the fact that the content of such narratives cannot be verified as it goes beyond ordinary human experience (i.e. it accepted as metaphysical reality) - as well as to teach through the moral of the story (even in the context of how diseases came to exist, as we have seen earlier in the myth of Pandora), another form of narrative or stories emerged during Medieval times, namely 'folk legends'.

According to the Merriam-Webster Dictionary[9], 'legend' can be described as any *story coming down from the past* (or popular myth of recent origin), commonly regarded as historical although not verifiable. The Online Etymology Dictionary[10] suggests that use of the term was first made in the early 14th century to denote *a narrative dealing with a happening or an event*. It is interesting to note that etymologically 'legend' derives from the Latin word *legenda*, whose literal meaning was '(things) to be read' and shares the same root with the word *legere*, meaning 'to read, to gather, to collect'. What is yet more interesting, is that we discover that the Latin word *legere* derives from the Greek word *legein* [in Greek: *λέγειν*] which means 'to speak'! This takes us back once again to Plato, and the interchangeable use of the words *mythos* and *logos* in his writings, to denote the telling of a story.

The change in meaning over the years possibly extends to the qualitative differences between myth and legend. Whereas myth is solely based on the oral tradition with major or minor variations over time depending on the audience the story is recounted to, the legend might appear also in written records, allowing the story to remain within certain boundaries of the imagination, protecting at the same time the veracity of the events described. This, perhaps, aside from the historical context from which the legend originates, provides strong grounds for the legend to be regarded as plausible, irrespective of what people's perceptions are. In addition, contrary to the metaphysical realm where most myths are born and reside, legends present a story that belongs in the realm of 'reality' or 'possibility', with identifiable features from everyday life, which also include some mysterious elements or inexplicable events.

The 'legend' entry in Wikipedia[11] specifies that "[...] *legends apply structures that reveal a moral definition of events, providing meaning that lifts them above the repetitions and constraints of average human lives, and* ***giving them a universality that makes them worth repeating over many generations***". This last sentence is important to consider in this report, as it not only explains how legends manage to survive through time as an aspect of universality, but also links explicitly to the type of communications that take place on a global scale these days, in the event of a pandemic.

[9] Merriam-Webster's Collegiate Dictionary (1996) 10th ed. Merriam-Webster Inc.
[10] Online Etymology Dictionary, Definition of *legend* <http://www.etymonline.com/index.php?term=legend>, viewed 13 May 2012.
[11] Wikipedia, Definition of *legend* <http://en.wikipedia.org/wiki/Legend>, viewed 7 June 2012.

As a conclusion, it could be argued that both myths and legends contain elements which drive collective fantasies and dreams (manifested through symbols), capable of shaping behaviours and triggering emotions in the individual. Folklore elements are present in both cases, as myth and legends are manifestations - and historical accounts in part - of the culture itself. Certainly the narrative structure plays an important part in explaining behavioural and emotional patterns (extensive analysis follows later in this report). However, in order to better understand population behaviour during the outbreak of an infectious disease and attitudes towards vaccination, more context is needed as regards the meaning of 'folklore' and 'folklore narrative'. Therefore, before closing this section, a general description of what constitutes an urban myth and a contemporary legend will be given, in an attempt to relate them to their "archetypal" forms.

2.4 Folklore, traditional oral culture and infectious diseases in history

To better contextualise urban myths and contemporary legends, and further provide the framework within which these stories emerge, we need to consider that both form part of modern folklore (in which content, style of narrative and method of communication can be significantly different compared to traditional folklore), but are at the same time deeply rooted in tradition, which is the bridge connecting people and societies of the present with their origins that might not be consciously aware of. What then does the word 'folklore' embrace?

This term (folklore) was first coined back in 1846 by the English antiquarian William Thoms, appearing on a letter that was published in The Athenaeum, a London literary and critical journal. By definition, the term 'folk-lore' refers to tradition, stories and beliefs of ordinary people (folk) that are aroused spontaneously outside of institutional channels of communication, and are spread from person to person. Broadly speaking, it comprises the everyday customs, beliefs, sayings, songs and other traditions specific to different places, times and cultures[12].

Studying folklore

Folklore studies have occupied scholars from various disciplines, such as linguistics, sociology, psychology, anthropology, literature, history and political science. As with myths, scholars have experienced great difficulties in trying to find an appropriate definition for the term 'folklore', which would embrace its diverse nature. Dan Ben-Amos, an American folklorist suggested that folklore comprises three materials; they are mobile, manipulative and trans-cultural (Ben-Amos, 1971). This would suggest that 'folklore' refers to any verbal or non-verbal expression (e.g. a song, tale, habit etc.) that can pass from one culture to another, crossing geographical boundaries and overcoming linguistic barriers, while still retaining sufficient traces of similarities across cultures. In addition, the various social and cultural contexts introduce key qualitative changes for creating a local version that will allow this material to become assimilated. According to Botkin (1994), folklore can be "*old wine in new bottle* or *new wine in an old bottle*, but rarely can it be conceived as *new wine in new bottle*".

Folklorists usually classify the material of folklore in terms of its social context, the time depth, and the medium of transmission. Folklore is not meant to exist without or apart from a structured group. Ben-Amos (1971) believes it is possible to distinguish three types of relations between the social context and folklore: a) possession (i.e. folklore viewed as lore, erudition, knowledge shared by a group as the sum of all individual knowledge and a common property of this group), b) representation (i.e. folklore represents a particular mode of collective and spontaneous thought, expressing the particular mystique that

[12] At first instance, it would appear that folklore conceptually is placed closer to a legend rather than a myth – however this is not the case.

characterizes primitive mentality in its perception of natural and social contexts[13]) and c) communal creation/re-creation (i.e. the verbal art is the sum of creation of a whole community over time).

Furthermore, folklore can be divided into three areas of study: 1) Artefacts (material culture), 2) Describable and transmissible entities (oral tradition), 3) Culture and behaviours (rituals). Although distinct, these areas are not mutually exclusive – quite the opposite. With particular reference to the oral tradition, which is the most pertinent in this report, storytelling appears to be a culturally universal practice, common to basic and complex societies alike. As has been discussed above, different types of narrative have always fascinated and reassured people, with basic forms of oral folklore existing as soon as societies devised primal forms of verbal communication.

Folklore, mythology and anthropology

As discussed earlier, the myth is a story that pertains in the spiritual realm, touching on existential and other metaphysical issues. Religious and mythical elements are usually included in folklore, as well as concerns, anxieties and fixations present in people's everyday lives. Thus, the relationship between folklore and myth takes the characteristic of a continuum, where the 'common' and the 'esoteric' come together, creating a mixed narrative. Stith Thompson, an American folklorist, made a major attempt to index the motifs of both folklore and mythology[14]. Another distinction made on a scientific level is that between folklore and anthropology; while anthropological studies focus on specific groups of people sharing certain features, folklore studies closely focus on the meaning of culture that is transmitted within this group.

Structure and functions of the folk narrative

The basis of research into the structure of folklore texts derives from the works of Vladimir Propp, and more specifically his study entitled Morphology of the Folktale (1928), which aimed at discovering a uniform structure in Russian fairytales – another type of folk narrative that comes close to other genres, yet remains distinct in the plot structure and use of elements, such as magic. The "Morphology" provides a useful point of departure for all studies on *oicotopes* (i.e. a recurrent, predictable cultural or local variant of the tale). Propp's analysis provides also an invaluable tool for the investigation of the acquisition and transmission of folklore. His research aimed at analysing the technique by which the fairytale structure is learned by children – either as isolated text which is a matter of precise recitation, or the subconscious extrapolation of the structure of the fairytale after having heard many other fairytales. This is particularly relevant since while there have been many studies of language learning, there have been very few studies exploring the acquisition of folklore.

Folk tradition and nursery rhymes in major disease outbreaks

As an extension to the relationship between transmission of a story, linguistic structure and a child's capacity for narration, particular attention ought to be paid yet to another genre of folk (oral) tradition, which is the "nursery rhyme". For UNESCO, the cultural heritage is interwoven with oral folk traditions and linguistic expressions that accompany man over time, nursery rhymes forming an integral part of this family. It is suggested by UNESCO that "[...] oral traditions and expressions become the vehicle for passing on knowledge, cultural and social values as well as preserving a collective memory"[15]. This is an important statement, as at first it can be perceived that oral folk traditions (especially in the form of nursery rhymes)

[13] André Varagnac, *Définition du Folklore*, Paris, 1938, p.28.

[14] Antti Aarne - Stith Thompson, *The Types of the Folktale: A Classification and Bibliography*. The Finnish Academy of Science and Letters, Helsinki, 1961.

[15] United Nations Educational, Scientific and Cultural Organization, *Oral traditions and expressions including language as a vehicle of the intangible cultural heritage* <http://www.unesco.org/culture/ich/index.php?pg=00053>, viewed 22 March 2012.

can actually communicate stories and events of the past with some relevant accuracy, and secondly, can highlight the importance of collective memory in the process.

Following the patterns of post-traumatic stress disorder and/or repressed memory for painful events as experienced by an individual, it could be argued that similar effect (in analogy) can occur on a collective level, in response, for instance, to an epidemic. According to Halbwachs (1950), collective memories vanish when they cease to be relevant to the current experience, meaning that events of the past remain in the (collective) unconscious until society experiences something of the same magnitude. In the last 700 years, Europe has been subject to a number of pandemics , such as the Black Death (1348), the Great Plague (1665) and the Influenza Pandemic or Spanish Flu (1918). These pandemics have been particularly feared as these diseases bring on painful death. At present, there is a somewhat selective recollection of these events, though as an assembled whole, these major pandemics have survived time and stayed in the collective memory not only through historical records, but as a function of the oral tradition as well.

The simple structure and linguistic/phonetic principles which form nursery rhymes, together with the key element of (the ease of) repetition, ensure the vitality of tradition, and therefore the collective memory. Nursery rhymes are apparently trivial and on many occasions contain violent themes, but are presented in such a way that children do not need to understand the meaning of the words, but rather to memorise their sequence.

There are two well-known nursery rhymes associated with pandemics in history: one appeared at the time of the Great Plague when London was struck in 1665, while the other appeared and spread rapidly during the 1918 influenza pandemic (Table 1).

Table 1: Examples of nursery rhymes that emerged during pandemics

Bubonic Plague (Great Plague)	**1918 Influenza Pandemic** (Spanish Flu)
Ring around the rosie, *a pocketful of posies.* *"Ashes, Ashes"* *We all fall down!* *OR* *Ring a ring o'roses,* *a pocketful of posies.* *A-tishoo! A-tishoo!* *We all fall down.*	*I had a little bird,* *its name was Enza.* *I opened the window,* *and in-flew-Enza.*[16] *AND* *A flea and a fly had the 'flu* *They neither were sure what to do* *"Let us fly," said the flea* *"Let us flee," said the fly* *So they flew through a flaw in the flue.*[17]

Nursery rhymes might not be characterised by a dense narrative, yet numerous elements – shared with myths and legends – are contained, making extensive use of imagery. The simplicity of these rhymes makes it possible for the messages conveyed to become established in one's consciousness. The reality of death that emerges through the innocence of these verses is quite remarkable, and could even be considered as a

[16] Richard Crawford, *"The Spanish Flu" stranger than fiction: Vignettes of San Diego history*, California: San Diego Historical Society; 1995.

[17] Rhyme in the Canora Advertiser, as quoted in Eileen Pettigrew, *The Silent Enemy Canada and the Deadly Flu of 1918,* 1983, Saskatoon: Western Producer Prairie Books.

type of defence mechanism for societies. Nursery rhymes have also been thought as a way of 'nutshelling' or reporting a traumatic event. Although different types of discourse and figurative language are discussed in later sections of this report, it is worth commenting on the rich use of analogies to describe the disease, as well as the didactical tone and motif behind these songs (especially in the case of the "in-flew-Enza"). This is another example of how close related folk narratives and oral traditions are to myths, as regards their function and specific elements.

Another interesting observation to bear in mind is the references made to tactics then used to 'fight' the disease. For instance, pockets and pouches filled with sweet smelling herbs (or posies) were carried because it was believed that the disease (i.e. bubonic plague) was transmitted by bad smells[18]. This notion of warding off a disease by making use of specific odours and other home remedies was also popular during the 1918 influenza pandemic. However, the adoption of such tactics would be largely disclaimed by modern science, perhaps carrying the label of an 'urban myth'.

At this stage, we ought to take a step back and consider once again the three elements that comprise folklore (Ben-Amos, 1971). In particular, we shall focus on the way in which tradition can cross geographical boundaries, given the linguistic barriers and restrictions that exist. With reference to perhaps the most persistent global epidemic of our times, HIV/AIDS, an interesting observation is made by folklorist Diane Goldstein in her book *Once Upon A Virus*. Goldstein (2004) suggests that children's fascination with body parts, secretions and anything that escapes the ordinary, which could spark off curiosity and/or fear, makes them want to integrate it in their play – possibly as a primal approach towards demystification. There is an example of an AIDS-related children's game, not associated with some narrative (making cross-cultural communication easier), which came to be presented by Bronner (1990) at a time when reported infections had been on the rise. However, Goldstein (2004) brings into focus another game that children have been playing for decades, or perhaps centuries, that is passed on from generation to generation, across different cultures around the world, called 'Tag, you're it'. This game makes an implicit reference to contagion and immunity against disease, and its universality can be attributed to the fact that the symbolic language used can find easier the way inside children's consciousness; the symbolic notion of the game that everyone can be exposed to disease and become aware of how easily it could be spread by symbolically touching the other on the shoulder, as well as the need for taking measures to protect oneself against that disease by symbolically crossing the fingers to shield against the 'disease'.

Rumours as another expression of folk narrative

Another manifestation of the oral folk narrative are 'rumours'. The function of rumours has been studied through the lens of different disciplines, ranging from psychology and sociology to folklore, and as a result a number of theories emerged. Back in the 1940s, Knapp (1944) defined three types of rumour: a) 'Pipe dream' (incorporating the hopes of individuals), b) 'Anxiety rumour' (causing unease due to its fear-fuelled nature) and c) 'Corrosive or aggressive rumour' (aiming to divide groups or negatively affect interpersonal relationships). A fourth one was proposed some years later by Allport and Postman (1947), the 'Anticipatory rumour', to refer to rumours arising from ambiguous situations. The 'anxiety' and 'anticipatory' types of rumour would seem to be the most relevant in epidemics and vaccination, in which occasion the rumours could escalate into formation of conspiracy theories.

In terms of theoretical frameworks about rumours, Allport and Postman (1947) suggested that rumours were spread by people following a filtering process, where these were evaluated as per their importance

[18] Online resource *Nursery rhymes: Lyrics, origins and history* <http://www.rhymes.org.uk/ring_around_the_rosy.htm>, viewed 28 March 2012.

and/or ambiguity. Based on this evaluation, and the inherent need for people to find meaning in things and events, the rumour is modified considering different cultural and personal variables, to the extent that can be communicated more effectively. The theory developed by Rosnow (1991) shares the ideas by Allport and Postman, but goes a step further that rumours have also a therapeutic function for the story-teller, as it helps to reduce associated anxiety about an event.

Another perspective on rumours was taken by Shibutani (1966), suggesting that principal function of a rumour can be regarded as collective problem-solving, instead of taking the form of 'catharsis' for the story-teller. In his words rumour, is a form of communication "through which men caught together in an ambiguous situation attempt to construct a meaningful interpretation of it by pooling their intellectual resources" (Shibutani, 1966; p.17). In a more recent theory expressed by Guerin and Miyazaki (2006), it is argued that rumours are told by people ('mongers') to entertain or keep the listener's attention, thereby enhancing social relationships. An analysis of conversational properties for rumours, urban legends, gossip and 'serious' knowledge, suggests that in all cases a story is characterised by the following social properties: a) be of interest and consequence to the listener, b) be difficult to dismiss immediately but also credible, c) be attention-grabbing or novel (Guerin & Miyazaki, 2006; p.26). Another crucial characteristic for rumours is the involvement of persons known to the speaker or listener, and is of personal consequence and interest to listeners. These last characteristics are particularly important in explaining the impact rumours have on perceptions and attitudes towards health-related issues, especially with regard to preventive measures such as vaccination or immunisation against vaccine-preventable diseases.

Another theory relevant to the function of rumours, points to the significance of being the first to tell *that* story, which is described to have great 'conversational cash value' for the story-teller (Guerin, 2003). Rumours have the capacity to be transmitted rapidly, especially nowadays through various modes of communication, such as the new social media, networking sites, mobile phones/text messaging and the internet, which is also an infinite reserve (alongside the mass media) of stories that could capture the attention of listeners. At the same time, all these modes of communication make possible for many to claim 'fatherhood' of a story, and every time a major event occurs these days is usually followed by an unprecedented flood of rumours (circulating worldwide).

2.5 Urban myths and contemporary legends

Following the preliminary remarks on myths, legends, folklore and oral traditions, we now introduce the concept of urban myths and contemporary legends, linking them up with specific features that can improve our understanding of the way urban myths and contemporary legends are formed and their principal functions within the framework of contemporary society.

Distinguishing between phraseologies

For the purposes of ensuring accuracy and clarity in our research at a later stage – vis-à-vis the implicit and explicit narrative motifs that underlie public perceptions of infectious disease outbreaks – we shall place under the microscope the type of phraseology used to describe manifestations of modern folklore, or *folk narratives*, which at core are apocryphal and second-hand stories that emerge spontaneously in the community and can rarely be traced to a single point of origin. These are most commonly known as urban myths, urban legends, or contemporary legends. Of course, folk narratives exist in various other forms such as rumours, riddles, gossip, children's rhymes and life-cycle rituals, all sharing common attributes with urban myths/urban legends. It is usually during infectious disease outbreaks when such folk narratives start (re)appearing, evoking as they do feelings of uncertainty, anxiety, panic and fear among the general public, and occasionally giving rise to conspiracy theories. But which term corresponds more accurately to those

stories circulating among people / members of a community, or to the stories disseminated by the mass media, concerning infectious diseases and vaccines or vaccination?

Starting from the adjectival component, the term 'urban' is used to differentiate (or distantiate) modern tales or stories (post-industrial times) from traditional folklore (pre-industrial times). What is relevant, then, is the period in time when a story takes place without necessarily originating or being strictly placed within an urban context. The term 'urban' is more obsolete among folklorists, as they prefer to use the term 'contemporary' instead, which is a more accurate term. For the general public, the term 'urban' combined with 'myth' or 'legend' is still perhaps the more appropriate one to use, as far as conception of the phrase is concerned, mainly due to its widespread use by the mass media.

The differences between a myth and a legend have been already discussed to some extent. Finding the most appropriate term would require another discussion on semantics, which is beyond the scope this report. This indeed might not be necessary as the meanings of 'urban myths' and 'urban legends' would appear to converge, and are, at least in the eyes of the general public, largely interchangeable. The qualitative difference between the two, is that 'urban legend' more closely approaches the origin of its root (i.e. the legend), referring generally to stories that are presented as facts, with certain elements that makes them plausible enough to be perceived as real (or 'true'), with the biologist Richard Dawkins (1976) suggesting that their 'success' is determined by their usefulness or relevance as a story for the society[19]. In contrast, 'myths' would refer to stories that are widely accepted to be untrue (notwithstanding the actual use of 'urban myth' in today's societies).

There is some distancing however in the definitions of urban myths and urban legends. For instance, Kipfer (2008) suggests that "urban myths are folkloric and often sensational tales about modern life that are repeated in the media and by other means, making them more believable to some". On the other hand, Jan Harold Brunvand, a distinguished American folklorist whose writings popularised the term 'urban legends'[20], explains that these are "stories told with some conviction as if they were true, attributed to a friend of a friend (FOAF) that are too coincidental or bizarre to be literally true"[21].

Nowadays, one of the main characteristic of urban legends, especially with reference to infectious diseases and vaccination, is the absence of verification (or scientific support) and not the level of a story's veracity per se. With reference to the urban myths or legends presented online, scientifically unsubstantiated stories or statements are convincingly presented to the audience by employing the FOAF tactic or claiming 'insider knowledge' that people are inclined to accept as true. With regard to the question why people *continue* to believe urban legends, Brunvand cites the face-to-face dimension, explaining that this happens because these stories are heard from credible sources, such as family members, co-workers, neighbours etc.[22]

Following these descriptions and given that these terms are not mutually exclusive, we shall continue using both terms for the purposes of this report, urban myths and urban legends; the former to describe people's

[19] Richard Dawkins introduced the key concept of *meme*, that is described as a "unit" for carrying cultural ideas (the *meme* is the cultural analogue of *gene*), and helps to explain how ideas and cultural phenomena are spread

[20] The term 'urban legend' became widely known to the scientific community in the early 1980s, after this was included in Brunvand's book "The vanishing hitchhiker: American urban legends and their meanings" , published in 1981. However, the use of 'urban legend' as a term dates back to the 1920s, referring to recurring beliefs or assumptions about urban life, urban affairs and urbanisation. *Information retrieved from* <http://www.folklore.ee/FOAFtale/ftn63.pdf>.

[21] Jan Brunvand interview on CNN.com (Chat Books), 22 September 1999, available from <http://edition.cnn.com/COMMUNITY/transcripts/jan.harold.brunvand.html>

[22] *Ibid.*

popular beliefs, opinions, attitudes or views about infectious diseases and vaccination, the latter to describe generally this type of folk narrative, which is more commonly used in texts and cultures, as well as to refer to folk stories that have a structured narrative concerning the abovementioned themes.

Origins and diffusion of urban myths and legends

Whether they be called 'urban myths' or 'urban legends', these are stories that emerge spontaneously, most commonly transmitted by word of mouth (verbal) and chain letters or emails (written), the print media, new social media and other online sources, as well as more indirectly through visual arts, such as theatre, films, photography and painting.

American folklorists first started collecting 'urban belief tales' in the 1940s – '50s (e.g. Baughman, 1945; Dorson, 1959; Reavek, 1952) and careful categorisations of stories in the form of 'urban legends' in the late 1960s[23]. Brunvand's (2002) 'Encyclopedia of Urban Legends' analyses the urban legends based on four steps: 1) interpretation, 2) classification, 3) performance, and 4) style. In this context, Brunvand (2002) also demonstrates that legends are not exclusive to the traditions of primitive societies, placing emphasis on the potential to learn much more about modern culture through systematic study of the structure and content of modern tales.

Identifying the source of the legend is one of the most fascinating problems for scholars. As has already been pointed out, the origins of a legend are lost in the mists of time, usually associated with some old custom or an ancient tradition. The unique source of the origin could be considered as the society as a whole, however this does not provide a satisfactory answer. Urban legends can be perceived as the product of a shared feeling, a set of emotions or stereotypes, permeating the body politic, without that society itself being conscious of it. It is widely accepted that during times of crisis, people are prompted to search for meanings or points of reference to connect with past experiences. This is fertile ground for urban myths and legends to be born and spread among the members of a community[24]. It is important to note that the content of such narratives carries substantial significance for the people, and this is what motivates communities to preserve and propagate these stories.

A defining characteristic of urban legends is the rapidity at which they are disseminated, and which is very pertinent to the Information and Communication Technologies revolution and the cultural homogenization in modern societies, allowing as they do for greater penetration of urban legends to a wider audience on a global scale. Some very interesting remarks are made on this issue by Brednich (2001), who argues that urban (or *contemporary*) legends belong to a new stratum of oral tradition with a worldwide distribution, escaping from the confines of the narrative culture of a single nation. This can be attributed to the increasing mobility afforded by modern society, tourism and unlimited communication and networks – all under the umbrella of globalisation. Brednich (2001) continues to suggest that "*through these channels the stories about strange and curious events and mishaps are easily transmitted from continent to continent and become again a part of oral circulation and dissemination. Contemporary legends can be regarded as*

[23] For more information, see collections of urban legends by Jan Harold Brunvand, in a series of books such as *The Vanishing Hitchhiker: American Urban Legends* (1981), *The Baby Train* (1993), *Too Good to be true: The Colossal Book of Urban Legends* (2001).

[24] The Encyclopaedia of Urban Legends (2002) by Jan Brunvand highlights that also *rumours* become especially common during periods of crisis, such as wars, epidemics, natural disasters, political destabilisation and so on. Although outside the scope of this report, it should be noted that rumours are considered by scholars to have the same weight (or possible impact on perceptions and behaviour) as urban legends although they lack endurance over time, mainly due to the absence of a clear plot. Miller (2005) suggests four points - common denominators between a rumours and an urban legend: 1) they are "told as if the events or threats depicted are current or recent", 2) "they are presented as news or objective facts", 3) they suggest that a problem "calls for urgent attention", and 4) "implicit in the narrative context is an attempt to gain control over the situation".

an indication of a world-wide society living in a global village which, at least partly, shares the same wishes, longings, values and anxieties".

It is true that advancements in ICT and social media place them in the driving seat for the diffusion of contemporary folklore. This phenomenon of stories presented online has even received a label, called "Net-lore", making reference mostly to chain letters and 'internetic' urban legends (i.e. a traditional urban legend accompanied by audiovisual material). Net-lore includes both traditional urban legends that have been transcribed into text (e.g. emails, forums, blogs etc.) as well as more contemporary ones (e.g. the 9/11 story of the person having his photo taken on the roof of one of the Twin Towers, just a few seconds before the plane ploughed into it). It is evident that urban legends transcribed and circulated in this way tend to become literal warnings or alerts rather than personal anecdotes or cautionary tales. They also tend to exhibit fewer variations for the obvious reason that text is usually forwarded intact, without any modifications. During an online interview for CNN, Jan Brunvand observes that the use of internet[25] has significantly increased the speed at which some of the stories are transmitted and circulated. However, the urban myths and legends that circulate online lack one crucial element: visual cues. The face-to-face transmission of stories involves facial expressions, gestures, reactions from the audience and context, all providing hints as to the credibility of the story. In the absence of these visual cues, it is reasonable to assume that users of online communication channels (making also use of audiovisual means), such as discussion forums, blogs, social networking websites and other forms of social media, rely heavily on rhetorical devices (including gestures, tone of voice etc.) to successfully convey their messages to the public.

Overall, it could be argued that a short decline is observed concerning the oral tradition of urban legends, however their commercialization through traditional mass media channels (e.g. newspapers, TV broadcasts) and circulation across the World Wide Web (e.g. emails, social media, blogs), has opened up a new field of modern folklore research. Especially in the case of the latter, another question that is posed concerns the persistence in time of urban myths and legends, after the initial stages of diffusion, as the Web becomes the mask of each person who wants to assume the role of a story-teller, for attracting a (much) wider audience.

The psychosocial dimension on the diffusion of urban myths and legends

A considerable number of psychologists, sociologists and ethnographers have also tried to explain the rationale behind the widespread diffusion of urban myths and legends. Fine et al. (2005) supported the idea that an urban myth or legend (rarely presented as such) goes through a filtering process by each person (a form of assessment), and, who, based on some specific criteria, will evaluate the plausibility of the story and judge whether it deserves to be passed on. Another key factor in the proliferation of urban legends is their emotional impact. Heath et al. (2001, p. 1029) propose that urban legends – as other *memes* – are retained because "[…] they evoke an emotional reaction that is shared across people". In fact, Heath et al. (2001) found that the more repulsive a version of an urban legend is, the more likely it is that the story would be passed on.

There are specific social functions that could help to explain why urban myths and legends are diffused and circulated for long periods of time. In essence, urban myths and legends usually make reference to:

- Concerns or worries of people that need to be communicated and shared with the community for protection (i.e. the moral/cautionary function of a tale, for instance, the kidnapping of children).

[25] This interview took place in 1999, so the new social media had not been around at the time.

- The need to give meaning and explain some dramatic event in order to be better prepared against potential new threats.
- The need to provide an insightful social commentary on the cultural or economic context of society.
- To support the social mechanism of building trust towards the other, by sharing everyday stories (Kapferer, 1990).

It is commonly acknowledged that an urban legend, an urban myth, a rumour can have a great impact on economic, social, and cultural level for the society. Most frequently, an urban legend is regarded as merely an amusing tale, with no real impact for society. However, there are examples of rumours or urban legends spreading to such an extent, only to be established as the absolute truth in people's consciousness, with serious repercussions for the community.

From a cognitive point of view, it would be worth to making a brief reference to a research study conducted by Skurnik et al. (2005), which reported that telling people that some claim is false can make them misremember it as true (i.e. the illusion of truth). Extending these findings to public awareness campaigns organised by competent authorities, where the aim is to discredit erroneous or misleading information circulating in the form of an urban legend or rumour, the repetition of this information creates a sense of familiarity for people, and if this erroneous information is heard some days after it could be accepted as true.

3. The narrative discourse and the art of rhetoric

The previous section had as main objectives to set up the frame within which urban myths and legends become generated, to present the various elements comprising folk narratives, and explore their social functions and ways these are diffused to the public, with particular attention paid to the World Wide Web and its role in the circulation of stories. This section takes a closer look at the narrative discourse, as well as the various linguistic features and narrative structures more commonly used in story-telling.

3.1 The narrative as theory

According to Bal (1997), a narrative is anything that 'tells a story'. It could be a text, an image, an event or a cultural artefact – this report focuses mostly on the narrative text, as a source of telling a story. The corpus of texts consists of novels, short stories, fairy tales, newspaper articles etc., all sharing the 'capacity of concealing' urban myths and legends inside. What makes a narrative so distinct is the fact that there are selective events or pieces of information that intentionally are emphasised or left out, based on the purpose these serve for the audience.

Bal (1997) bases his theory on narrative makes a sequence of connections (and three-layer distinction in a narrative) between *narrative text*, *story* and *fabula*. These layers of narrative (and their inter-connections) have been defined by Bal (1997; p. 5) as follows: "*a **narrative text** is a text in which an agent or subject conveys to an addressee ('tells' the reader) a story in a particular medium, such as language, imagery, sound, buildings or a combination thereof. A **story** is the content of that text, and produces a particular manifestation, inflection and 'colouring' of a fabula; the fabula is presented in a certain manner. A **fabula** is a series of logically and chronologically related events that are caused or experienced by actors*". As actors are understood agents that perform actions, not always of human substance. Overall, it seems almost as a deductive reasoning process, with narrative text incarnated into re-acting an event.

With reference to urban myths, and more generally the folk narrative, and public health issues, there are some important features that merit our attention, across the three different layers of narrative described earlier.

Text

The narrative text is a story that is told in a medium, with the narrator being the most central concept in the analysis of texts. What is important to note in this primary layer of narrative, is the distinction made between narration in first-person (character-bound character) and third-person (external narrator). In terms of degree of influence and messages conveying a 'truthful' meaning, it is the narrative in first-person that reaches deeper in the audience consciousness, as some autobiography is implied in such type of narration. For instance, personal stories about the negative outcomes or side-effects of a vaccine, could have more people connecting with (and accepting as true) the autobiographical 'drama' of an affected person, whereas the (emotional) impact may be lesser in the case of story told in third-person. Another view comes from Denzin (1989), where the (auto)biographical truth is understood as the agreement within a community of minds with events believed to have occurred and with how these events were experienced by interacting individuals. This is particular interest if we consider what constitutes a community of minds in the modern era, with the developments of ICT.

Story

The story, which is found in the middle of the three layers of narrative, is closely associated with the *way in which* a sequence of events is presented – not necessarily in a chronological sequence as in well-constructed stories (or fabulas). This layer can explain the reason why the narrative of the same urban myth or legend appears as convincing when presented by one story-teller, and fabricated when presented by another. Once again, with reference to issues surrounding an epidemic or vaccination, there are similar stories that circulate usually through the Web or appearing on the mass media, but not every story is interpreted the same by the general public. There are certain aspects in a story, especially use of common language and common knowledge, as well as extensive use of rhetorical devices, that not only makes the narrative more pleasant for the reader, but attributes also some level of veracity to the story.

Fabula

The fabula represents the final layer in the construction of a narrative, and comes the closest to signify a traditional (or folk) tale, with a structured narrative plot (i.e. beginning – middle – end). Fabula comprises different properties, such as events, actors, time and places, which constitute the frame in which a series of episodes are retold in a logical and chronological order, allowing the audience to accurately interpret the story. According to Bal (1997), most relevant elements in a fabula are the events and the actors, as they interact constantly with each other in a narrative. There is no universal model however, as there is a clear dichotomisation between what people (as actors) do in reality and what they do in fabulas in achieving the transition from one state to the other (as event), either through change of the condition (Barthes, 1977), or choice made by the actor. Perhaps most relevant to urban myths and legends in general, is the 'truth value', which is used to refer to the 'reality' of the actant[26] within the actantial structure (Bal, 1997). The various categories of actors (e.g. liars, master figures, false heroes, invisible fairies, truth-tellers etc.) are formed as a result of the 'false' image they are presented with in the beginning, which instigate the subject

[26] *Actants have a kind of phonemic rather than a phonetic role: they operate on the level of function, rather than content. That is, an actant may embody itself in a particular character (termed an acteur) or it may reside in the function of more than one character in respect of their common role in the story's underlying 'oppositional' structure. In short, the deep structure of the narrative generates and defines its actants at a level beyond that of the story's surface content.* - Terence Hawkes, *Structuralism and Semiotics* (Berkeley: University of California Press, 1977), p. 89

to take wrong decisions. According to Bal (1997; p. 212), "[…] 'Truth' exists in the coincidence of existence and appearance, of the identity and qualities of an actor on the one hand, and the impression s/he makes, his or her claims, on the other".

In all, narration is not a one-dimensional process but rather comprises different layers whose production is the 'narrating' (act or situation of uttering the narrative) through 'fabulation', 'storying' and 'textualisation' (Davis, 1992). The narrating transpires in the scene of representation, the time and place of producing particular representations that make sense in a series of pro- and retrospective references, repetitions, revisions, and refusals (Davis, 1992; p. 242). The theories of narrative discourse are not limited here of course; what has been presented here should provide yet another framework to understand the power of narrative, and its possible relevance to events of pandemics where various communication sources are used, from public health authorities to different societal groups or individuals.

3.2 Modes of persuasion and engagement

Narration, as an act or a process, classifies as a main rhetoric mode, together with 'description' (recount of stories versus accurate descriptions). The art of rhetoric and narrative are firmly interconnected, as rhetorical tropes (or figures of speech) determine to a great extent the way a message or story is communicated to an audience, which is particularly relevant in modern rhetoric used by the mass media for public health related issues. In order to understand better the architecture of the narrative and its components, which are key in the construction of stories in the form of urban myths and legends, it would be much useful to underline first the rules that govern the art of rhetoric, and then discuss briefly the rhetorical tropes that are more relevant as tools for the construction of a folk narrative.

According to the Merriam-Webster's Dictionary[27], rhetoric is "the art of speaking or writing effectively". The use of the word 'effectively' is key in this definition, as implicitly expresses the notion of persuasion for the audience, as if the audience is exposed to the "only truth". This becomes more evident in Aristotle's *Rhetoric*, where the following definition is provided: "*Rhetoric is the faculty of observing in any given case the available means of persuasion*"[28]. This overall idea that rhetoric equals persuasion has been emphasised by many scholars in the field (particularly in the Western world). Many forms for persuasion have been devised, either in the form of conceptual schemes (figures of thought) or turns of phrases (figures of discourse).

Another approach is that rhetoric is understood as the "conscious intent to change others" (Foss and Griffin, 1995; p.2). This would not be a false assumption to make, since humans inherently have an interest in changing others (Gearhart, 1979). This could be observed in everyday life, even among friends or families. Another observation made with reference to rhetoric, is that speakers assume a 'paternalistic' role when addressing the audience (Scott, 1991). The paternalistic (or rather 'parentalistic') role is quite relevant, as this role can be assumed by the State to protect (or better prepare) its people from the outbreak of an infectious disease. Hence, compliance with preventive measures against a disease can rely both on the rhetoric used by competent authorities, feelings of the general public as being protected by the State, which in turn shows genuine care and interest to protect its citizens.

[27] Merriam-Webster's Collegiate Dictionary (1996) 10th ed. Merriam-Webster Inc.
[28] Aristotle, *The Art of Rhetoric* (I.ii)

The art of rhetoric according to Aristotle, is defined by the ability to see what the possible means of persuasion are in a given case, with the means (or modes) of persuasion being categorised into the use of a) reason (logos), b) feeling/emotion (pathos) or c) the invocation of the speaker's character (ethos)[29].

Table 2: The three modes of persuasion and description of principal characteristics.

Mode of persuasion	Persuasive appeal	Main characteristics
Logos	Appeal to reason	Emphasis on logical/valid arguments and justification by use of facts
Ethos	Appeal to one's character	Emphasis on the credibility of the source – Character perceived as knowledgeable and moral
Pathos	Appeal to emotion	Emphasis on the expression and emotion – arousing stimuli – Use of colourful and vivid language to induce emotions

Since the ancient times, it was believed that *pathos* is the rhetoric mode with the most powerful persuasive appeal, due to its immediacy and the fact that emotion-induced engagement is easier (or faster) for the speaker to achieve. The communication technique of 'pathos' is most commonly used in political rhetoric to extend level of influence. An illustration of this would be the speeches delivered by US President Barack Obama; whose rhetoric was once reported to have caused mass hysteria in the crowd[30]. The appeal to emotion as a rhetoric tool has also been evident in the last few decades in advertisements[31] and news reported by the mass media, with examples of dramatic music also being used in the background as the journalist narrative unfolds, or added emphasis on specific words. The same could also be said about other forms of visual arts using pathos as principal mode of persuasion, most prominent of which would be the theatre, films and TV broadcasts.

Another characteristic of 'pathos' is the fact that as mode of persuasion it can reach various demographic groups, as the emotions are universal with few cultural variations[32]. On the contrary, 'logos' and 'ethos' are more specific or relevant to particular groups within a society, meaning that the audience needs to be on the same grounds as the speaker – or have common representations of the past – in order for messages to effectively come across[33]. With reference to people disseminating stories through the Web (e.g. in the form of emails, comments or social media), where anonymity takes away the 'ethos' as mode of persuasion, it could be claimed that many times also appeal to reason (logos) is made from speakers/writers, where much information is presented with the certainty of facts. In such cases of concise narratives that take the form of an anecdotal story, the combined use of both 'logos' and 'pathos' may achieve the desired outcome for the story-teller, persuading the audience about the truthfulness of a story.

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[29] Aristotle, *The Art of Rhetoric* (I.ii.1-3; 1355b).

[30] The Jakarta Post – Setiono Sugiharto Opinion, 20 November 2010, available from <http://www.thejakartapost.com/news/2010/11/20/the-ethos-pathos-and-logos-obama%E2%80%99s-speech.html>

[31] There is much scepticism about the rhetoric used in TV advertisements, where 'ethos' is also used at times as mode of persuasion. In such cases, a product is advertised by a person identified from the general public as a role model, moral and trustworthy, leading the viewer to think positively about the product. This has more implications, especially with reference to pseudoscience.

[32] The cultural variations are more relevant to the orator's ability to understand the qualitative level and capacities of the audience, as well as the dynamics that are formed during communication. These may vary with cultures.

[33] It goes without saying that among an orator's skills, would be to create those connections with the audience based on the reactions or other implicit messages received.

Earlier in the report was highlighted the role and importance of 'imagery' in the narration of myths and legends, as well as their more contemporary manifestations contained inside the folk narrative. In the following section, we proceed with reflecting on the main linguistic tools that are used in rhetoric, vehicles of the imagery in narration of a story – these are commonly described as 'rhetorical tropes'.

3.3 The wider frame and role of rhetorical tropes

The foundations of rhetoric are laid on the division between *what* is communicated through language and *how* this is communicated. The use of tropes or figurative speech relates to *how* things are represented rather than to *what* is represented, thus creating small parallel realities, framed within systems of analogy. These analogies in rhetoric create communication channels which are more effective in conveying messages and communicating meaning to the audience (Jakobson & Halle, 1956), allowing access to greater depths in human consciousness. Gideon Burton[34] provides the following definition for trope: "An artful deviation from the ordinary or principal signification of a word".

Tropes are not only expressed verbally, but could also be represented visually, same as visual rhetoric exists to emphasise images as sensory expressions of cultural meaning[35]. With the latest advancements in Information and Communication Technologies and potential offered by computer software for graphic designers, visual (or non-verbal) tropes also have a strong presence these days, especially in advertisement.

In the next paragraphs is discussed the use of rhetorical tropes in illness, infectious disease outbreaks and science in general, for effective communication of meaning. In order to create the appropriate framework for later discussion, it would be useful to focus on and provide the definitions of specific tropes that are most commonly used or found in narratives, including those which relate to issues on public health. From the wider spectrum of tropes that have been identified by linguists, four major kinds of tropes stand out (i.e. metaphor, metonymy, synecdoche, irony), which have been described by Burke (1969) as the four 'master tropes' (see Table 3).

Table 3: Definitions of the four master tropes[36].

Master tropes	Description
Metaphor	A figure of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy between them.
Metonymy	A figure of speech consisting of the use of a name of one thing for that of another of which it is an attribute or with which it is associated.
Synecdoche	A figure of speech by which a part is put for the whole, the whole for a part, the species for the genus, the genus for the species, or the name of the material for the thing made.
Irony	The use of words to express something other than and especially the opposite of the literal meaning.

[34] From the Forest of Rhetoric (*Silva Rhetoricae)*, <http://rhetoric.byu.edu/default.htm>, viewed 11 April 2012.
[35] Wikipedia – Visual Rhetoric, <http://en.wikipedia.org/wiki/Visual_rhetoric>, viewed 14 April 2012.
[36] All definitions have been taken from the Merriam-Webster's Collegiate Dictionary (1996) 10th ed. Merriam-Webster Inc.

These four master tropes could also be seen in a psychoanalytical dimension, following the metaphor of the 'mental iceberg' that was introduced by Sigmund Freud. This is relevant to population behaviour during a crisis (e.g. a pandemic), when hysterical symptoms do not seem to have conscious causes (Thornton, 2005). According to the 'mental iceberg' theory, the human mind comprises three levels: the unconscious, the preconscious and the conscious. We could consider three specific elements as relevant in the event of an epidemic. There elements are a) fears (unconscious level), b) memories (preconscious level) and c) perceptions (conscious level). The analogy made with the rhetorical tropes is that metaphor and metonymy formulate the unconscious (Lacan, 1957 cited in Grigg, 2008), with metaphor used for suppression, while metonymy used for combination. We could consider the example of the mass media using metaphors and metonymies to stimulate the public in view of an epidemic. This could have the result of triggering the emotion of fear, especially if combined with memories in the preconscious level. Perceptions about the gravity of the outbreak and compliance with recommendations made by the public health authorities, will depend on the depths of the unconscious level that one source (the mass media in this example) has reached.

From the four master tropes, it is the *metaphor* that is used most commonly by most people, since it can reach at the deepest levels of symbolism. A whole theoretical framework was constructed by Lakoff and Johnson (1980) around the conceptual use of metaphor in their book Metaphors we live by. The authors claim that a metaphor is a matter of ordinary, everyday language rather than a figure of speech used in poetry and rhetoric, and furthermore, that "*our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature*" (Lakoff & Johnson, 1980; p.3). Additionally, they contend that metaphors have the persuasive power "to define reality [...] through a coherent network of entailments that highlight some features of reality and hide others" (p. 157). Lakoff (1992) went on to classify metaphors into subcategories, one of which are 'structural metaphors'. This type of metaphors "*allow us to use one highly structured and clearly delineated concept to structure another*" (Lakoff, 1992; p.61). As we shall see later in this report, this conceptualisation of metaphor is much relevant in analysing the media coverage of an infectious disease outbreak, and visual representations made for the public.

In addition to the four master tropes, there are numerous other tropes – divided into groups – that appear often in written or oral narrative. Considering what has already been discussed in Section 1 about the characteristics of urban myths and legends and the impact of repetition of specific words (or even songs) in communication of meaning, it would be useful also to keep a focus on the figurative language used in repetition (Table 4).

Table 4: Figures of repetition and definitions.

Figures of Repetition	Description
Anadiplosis	The repetition of the last word (or phrase) from the previous line, clause, or sentence at the beginning of the next. Often combined with climax.
Epanodos	Repeating the main terms of an argument in the course of presenting it.
Epistrophe	Ending a series of lines, phrases, clauses, or sentences with the same word or words.
Exergasia	The repetition of the same idea, changing either its words, its delivery, or the general treatment it is given. A method for amplification, variation, and explanation.

For instance, in the narrative discourse of healthcare professionals in the event of an epidemic or measures about vaccination, the repetition tropes would be used for emphasis on particular words that would possibly stimulate listeners' emotion, such as 'risk', 'threat', 'protection' and so on. Rhetoric through use of figurative speech, alongside with the structure of a narrative, determine to a great extent the level of impact one story will have upon the audience. There are qualitative elements which decide not only how much an urban legend or a rumour will be diffused, but also how much will reach or affect, attitudes and behaviour of those who listen to the story.

It is quite common the appearance of rhetorical tropes in science, particularly in communicating messages for the public with regard to health-related issues. As we have seen already from the analysis on the functions of the narrative and modes of persuasion, there are certain linguistic "ingredients" that can produce the desired outcome or effect for the general public. Analogies and figurative speech allows health experts and professionals to communicate the messages more effectively, as a function of imagery and repetition. However, these tropes also need the appropriate context (besides the linguistic one) that determines the flow of discourse and overall impact – such determinants would be the physical environment, social setting and the cultural context (Kövecses, 2010), which would explain variations in the behaviour of the general public on toward infectious disease, and urban myths surrounding vaccination.

With reference to the use of metaphors for instance, Max Black suggests that "recognition and interpretation of a metaphor may require attention to the particular circumstance of its utterance" (Black, 1981; p.67), meaning that criticality of a situation can be perceived in its entirety by first drawing someone's attention to the linguistic analogy that is made. The cultural context of a metaphor in such a case is crucial, as the analogy made needs to be identified and understood quite easily by the wider audience.

Another trope that is frequently used by healthcare professionals is that of 'synecdoche'[37]. The use of synecdoche in the narrative allowed professionals to be more expansive in their recommendations by use of imagination, for better informing their methods and get messages across to the public. The creation of a representational mapping made possible through synecdoche, assisted in taking a step beyond metaphors, whose habitual use – also in the context of infectious diseases – can turn them into 'dead metaphors' (Barnes & Duncan, 1991), meaning that the audience is so accustomed to an analogy that no longer has an effect.

3.4 Application of the theoretical framework into practice

Hitherto, we have presented and discussed extensively qualitative elements of folk narratives, from myths and legends, to urban myths, contemporary legends and rumours. A number of examples was provided as well as associations made to infectious disease outbreaks in order to contextualise more effectively the impact of culture, society and tradition on issues related to health, and science as an extension. The need for people to tell, listen and generally share stories is deeply rooted in all cultures, and this need becomes greater when people find themselves in 'unfamiliar grounds' or situations that escape the common, everyday experience.

We have seen also discussed the function of rhetoric in persuading the audience about the truth in the content of a story, even if the content is made of 'fabricated truths' for making the story more attractive to

[37] Synecdoche as word also appears in the 2008 Charlie Kaufman film "Synecdoche, New York", with many references to illness throughout the film.

the audience. Another issue that has been touched was that of the diffusion of urban myths and stories, the effectiveness and speed that a story about an infectious disease can travel and spread – even before that same disease actually has reached the community!

It has been also within our objectives to construct the theoretical framework by taking into account the different layers of a narrative discourse, as well as to make a first introduction to rhetorical tropes and other linguistic tools that are used for successfully communicating messages to the public, or keeping the audience engaged as a function of the qualitative elements that comprise a narrative. The utilisation of rhetoric devices can – and does – play a significant role on how public perceptions and behaviours are shaped, when the most appropriate words or expressions are used. Specific reference and examples of such words and expressions are provided in later sections of this report.

This theoretical framework is paramount in the analyses that follow, with regard to infectious disease outbreaks, their narratives and urban myths that inhabit the numerous modes of communication available today, from the literature and documentaries to traditional and new social media. Nevertheless, before we examine more in-depth those cases where folkloric elements and/or content is found in medical and health-related narratives – covering the whole spectrum of sources of communication – we take a close look at some of the most famous pandemics in the world history in conjunction with public perceptions and urban myths that had been evident at that time.

4. Pandemics in history, popular conceptions and associated myths

Since the beginning of human civilisation, plagues, epidemics and pandemics, have played a role in history and folklore. The Book of Exodus tells us how Moses used the threat and reality of plague and disease in an effort to convince the Pharaoh to let the Israelites go free. In the Book of Revelation of the New Testament, we are introduced to Pestilence (also appearing as Conquest), one of the Four Horsemen of the Apocalypse[38], accompanied by strong use of imagery. When the Plague of Athens struck in the 5th century BC, people looked to the heavens for explanation. Others sought to blame the Spartans, with whom the Athenians were at war during the outbreak. So it goes throughout history, where pestilence and outbreaks of infectious diseases shape major events and inspire works of art and literature. Boccaccio's *Decameron*, one of the most influential early Italian texts, frames its narrative around the Black Death and a group of travellers attempting to escape from it and *Canterbury Tales*, Chaucer's opus also draws heavily from the plague.

The indiscriminate nature of disease and illness has been, and remains to this day, a source of fear for populations the world over. Over time, people have moved from seeking explanations in the movements of stars and to the favours of God or gods, to putting faith in science and technology to interpret and protect against outbreaks, as we have seen already in Section 1 of this report. However, throughout these changes, myths, legend and rumours have remained constant in their presence.

This section briefly presents an account of how legends, myths and suspicion grew around three pandemics in older history, namely the Great Plague (1348-50), Smallpox (1870-74), Spanish Influenza (1918-19).

[38] D. Leeming, *The Oxford Companion to World Mythology.* Oxford University Press, 2005.

4.1 The Black Death

In the mid 14th century, Europe was struck with a plague that would eventually claim around a third of the population at the time. The 'Black Death' struck at a time when there was little understanding of medicine and physiology. As a result, many people of the era looked to religion or superstition for answers and cures. While this led to the rise of many myths and legends surrounding the sickness, due in part to texts such as Boccaccio's *Decameron* and striking imagery such as Venetian plague doctors (Figure 1), the Black Death has managed to endure in the social conscious (and collective memory) for many centuries, overshadowing other major epidemics before and since.

Today we know that the plague was spread in Europe by fleas carried by black rats, believed to have arrived through merchant ships returning from Asia. Contemporary explanations however, were varied and often deeply embedded in religious explanations. Although today, each of the three manifestations of the disease can be treated or cured with antibiotics and modern medicine, cures for the Black Death in the 14th century were as varied as explanations for the cause. Unsurprisingly, many of these 'cures' had little effect, though some, either through a fortuitous coincidence or a rudimentary understanding transmission of infection, succeeded in saving lives or even, whole communities.

When the Black Death took hold and began to spread through Europe, many at the time believed it was the wrath of God striking down sinners. In response, some (in particular the Moors in Spain) argued that they should accept their punishment and endure, as to do otherwise would be blasphemy, which is also in line and manifested through the words of Martin Luther presented in Section 1. In a similar vein, others became wandering penitents, travelling throughout Europe calling on others to do likewise.

Figure 1: Venetian Plague Doctor

Not everyone viewed the Black Death as God's wrath manifest however. In many cases, groups or individuals became scapegoats (leading to what we would call today 'stigmatisation', 'prejudice' and 'discrimination'), while in others the blame was laid at some demons. Witchcraft was sometimes blamed, while anti-Semitism, took on a new dimension as Jews were blamed for deliberately spreading the illness (Foa, 2000). Some rumours even claimed they had been paid by the king of Granada (a Moor) to do so[39]. There was a rumour circulating that Jews were either immune or resistant to the infection, as they didn't seem to die in great numbers like the rest of the (Christian) population. There are few explanations for this however. The first is that many Jews' burials were not recorded, their bodies interred outside of graveyards. It may also have been that their ostracising from the larger community also saved many from coming in contact with the infection, though by that token they may also have carried the infection from town to town as they were forced out, further contributing to the rumours surrounding them. Perhaps the most sound explanation would be the fact that Jews followed generally hygienic lifestyles and healthy diet, as regards the consumption of foods (Ziegler, 1969).

Legends of 'vampyres' also grew out of the Black Death, with claims that the disease either attracted them, or led to their creation. Vampyres were said to stalk the living and became synonymous with death, though

[39] Stéphane Barry and Norbert Gualde, *La plus grande épidémie de l'histoire* ("The greatest epidemics in history"), in *L'Histoire* magazine, 310, June 2006, p.47.

it would be several centuries before writers would transform these creatures of fear and folklore into castle dwelling, aristocratic lords of the night. The original legends developed out of stories that exhumed bodies had longer teeth and long, pointed fingernails. While today we know this to be the result of desiccation and rigor mortis, during the 14th century, this was attributed to an improper burial or a failure to administer the sacraments.

Cures for the plague varied greatly. Under Islamic doctrine, the plague (being God's wrath), was simply to be endured, while the aforementioned Christian penitents traversed the land. Other cures were based not on established religious beliefs, but on local folklore or traditional cures. Potions laced with mercury and arsenic, substances we know today to be toxic, were prescribed, as were ground horn, vinegar and urine. Lancing the sores was also a treatment, as was bleeding. Pomanders of different herbs were also hung around houses and the sick, as the smell was believed to ward off the illness. Although at the time, there was only limited understanding of medicine and anatomy, some of the cures offered were more successful than others. Isolation was used to prevent infections entering the more controlled areas, such as some Italian city states. The term quarantine originates from a Venetian law from 1348 that turned ships away, holding them in isolation for a period of 40 days so as to be sure they were free of infection.[40] However, although it would have limited success, eventually even Venice succumbed to the plague.

The Black Death, the bubonic plague of the 14th century resulted in sweeping changes across the European continent. Its effect was such that even today, seven centuries later, it is still commonly known and often referred to in the media alongside more recent pandemics, such as the Spanish Influenza of 1918. Although much has changed in the intervening years, the proliferation of myths, legends, cures and rumoured causes is a feature that has remained consistent throughout history, right up into modern day.

4.2 The Smallpox pandemic

With regard to myths and legends, smallpox is unique in that it has *two* very distinct eras that have become the subject of focus, both tied into vaccination. Smallpox is distinct the being the illness that inspired Edward Jenner's (1749-1823, physician and scientist) work on vaccines. Its eradication from the wild is also arguably the greatest victory for vaccination since the process began. Both of these incidents are of great importance to the narrative of vaccinations and pandemics and it is unsurprising that both those that support vaccination and those opposed to it offer to dispel the 'myths' surrounding the disease and its connection to vaccination.

The origin of vaccination itself stems from a piece of folklore that Jenner came across while living in Gloucestershire. Milkmaids were traditionally thought to be protected from smallpox by 'some force of nature., as they rarely seemed to bear the scars left by the illness[41]. However, Jenner reasoned that it was their exposure to cowpox (harmless to humans) which conferred specific immunity to smallpox (Riedel, 2005). Drawing on an earlier practice known as variolation, whereby the patient had some pus from smallpox mixed into their blood, giving them a mild form of the illness, Jenner exposed a young boy with cowpox and let the mild illness run its course before infecting him with smallpox. After fighting off cowpox, the boy's body had built up immunity to smallpox as well and it never took hold (Willis, 1997).

The above is the accepted origin of vaccination, though even those who are supportive of vaccines agree that some of Jenner's actions have been debateable on ethical grounds. However, for those opposed to

[40] Information retrieved from the British Science Museum <http://www.sciencemuseum.org.uk/broughttolife/themes/publichealth/blackdeath.aspx>, viewed 25 June 2012.
[41] BBC – From myth to legend <http://www.bbc.co.uk/legacies/myths_legends/england/gloucestershire/article_2.shtml>, last viewed 4 July 2012.

vaccination, Jenner has been recast as a 'boogie man' figure, responsible for sidelining anyone who opposed his vision and propagating the myth of 'Germ Theory, as espoused by Pasteur, suggesting that specific microscopic organisms are the cause of specific diseases (Geison, 1995).

As part of the battle for the narrative of vaccination, the stories and legends surrounding smallpox have become key. Two of the most vocal opponents of the above account are Dr. Sheri Tenpenny and Eleanor McBean. Published in 1957, McBean's book *The Poisoned Needle* has become a foundational text for many 'vaccine aware' groups, especially in the United States. The book has chapters focusing on the history of vaccination, diseases it claims can be caused by vaccination (including syphilis and cancer), vaccination deaths and the dangers involved with the polio vaccine. However, the first two chapters deal specifically with the 'cult' of Jenner and the ineffectiveness of the smallpox vaccine. McBean cites figures that show how smallpox was in decline *prior* to the introduction of vaccination[42]. Following the table, she includes quotes from officials and physicians that visited hospitals during the 1800's including Sir Thomas Chambers, Q.C.M.P., recorder of the city of London who said: "I find that of the 155 persons admitted to the Smallpox Hospital in the Parish of St. James, Piccadilly, 145 had been vaccinated".

[43]One element of the Smallpox story that McBean and those that are not opposed to vaccination agree on, is that not everyone in Jenner's time accepted that vaccination was effective or safe. Although they differ on their depiction and appraisal of the character and treatment of Jenner as a person, there is little argument that there was resistance against the process of vaccination, with numerous cartoons published in satirical magazines and arguments against its safety and efficacy (Figure 2).

The *Poisoned Needle* ties the narrative of vaccinations into the story of smallpox, claiming that it was improved sanitation, rather than the advent of a new medical practice that brought about its decline. However, the book was written some twenty years before the World Health Organisation (WHO) declared Smallpox to be eradicated and so is concerned primarily with the first era of smallpox myths and legends. However, the announcement of its eradication and subsequent heralding as vaccination's greatest success (as well as proof of its effectiveness), led to a new wave of claims that the 'true' story of smallpox had been ignored or suppressed. Both sides have attempted to expose the "myths" of the other, offering their own versions as the sole accurate account of the demise of smallpox.

Figure 2: "The Cow Pock" by James Gillray, showing people developing cow-like appendages following vaccination.

In 2002, Dr. Sherri Tenpenny, a physician, published *Vaccination & Smallpox*, which laid out explicitly the 'accepted facts' about smallpox and then

[42] More information about the association between smallpox and vaccination according to McBean, can be found here: <http://www.whale.to/a/mcbean.html#CHART SHOWING DECREASE IN SMALLPOX DEATHS AFTER DECLINE OF VACCINATION>, last viewed 4 May 2012.

[43] Shuswap News – *Drug busting: Proof that vaccination doesn't work*, 17 October 2009, available from <http://shuswapnews.com/2009/10/17/drug-busting-proof-that-vaccination-doesnt-work/>

proceeded to demonstrate how they were, in fact, 'myths'. The accepted facts as laid out were[44]:

1. Smallpox is highly contagious and could spread rapidly, killing millions
2. Smallpox can be spread by casual contact with an infected person
3. The death rate from smallpox is thought to be 30%
4. There is no treatment for smallpox
5. The smallpox vaccine will protect a person from getting the disease

Tenpenny then makes the distinction between 'accepted facts' and 'real facts'. Many of the arguments laid out by Tenpenny are representative of the most common urban legends surrounding smallpox today. The main reason for the decline of smallpox, they argue, is not vaccination, but improved sanitation and other public health measures[45].

Although smallpox has all but disappeared from the wild, it has remained prominent in discussions surrounding pandemics both for its ties to the history of vaccines and claims made by former US president George W. Bush that it may be used by terrorist groups in the future, prompting calls for and against administration of a vaccine.[46] Both sides will continue to argue over who possess the 'true' narrative of smallpox and its eradication however. While those opposed to vaccine continue to argue against crediting vaccination with its disappearance, WHO and those in favour will continue to offer smallpox as proof of the effectiveness of mass vaccination and immunisation. In the words of Dr. Donald Henderson, distinguished physician and epidemiologist, and one of the leaders of the vaccination drive against smallpox:

> *The most important legacy of smallpox eradication was its demonstration of how many people could be protected through vaccination, so rapidly and inexpensively with a well planned programme and quality-control monitoring. This is what led us to organize the first meeting that would propose an Expanded Programme on Immunization and which, in turn, led to the polio eradication campaign and a rapidly growing global interest in immunization as a highly cost-effective programme worthy of investment by every country.*[47]

4.3 The Spanish Influenza (1918 pandemic)

The influenza pandemic of 1918-1919 was the most devastating pandemic in recent memory, leaving almost no corner of the world untouched. There is still debate as to where it originated, but recent studies on a preserved flu victim revealed that it was a particularly virulent strain of H1N1.[48] Ultimately, it would claim the lives of more American soldiers than the war itself. The outbreak hit at the end of the First World War and so was the subject of a media blackout, enacted by both sides in the war. As a result, very little official information was made available, so stories and legends grew up to explain its virulence and offer potential cures. Even the name it is most commonly referred to today, 'The Spanish Influenza', has been attributed by some to the fact that Spain – neutral during the First World War – was one of the few countries that provided wide scale coverage of the pandemic, giving the impression that it was more

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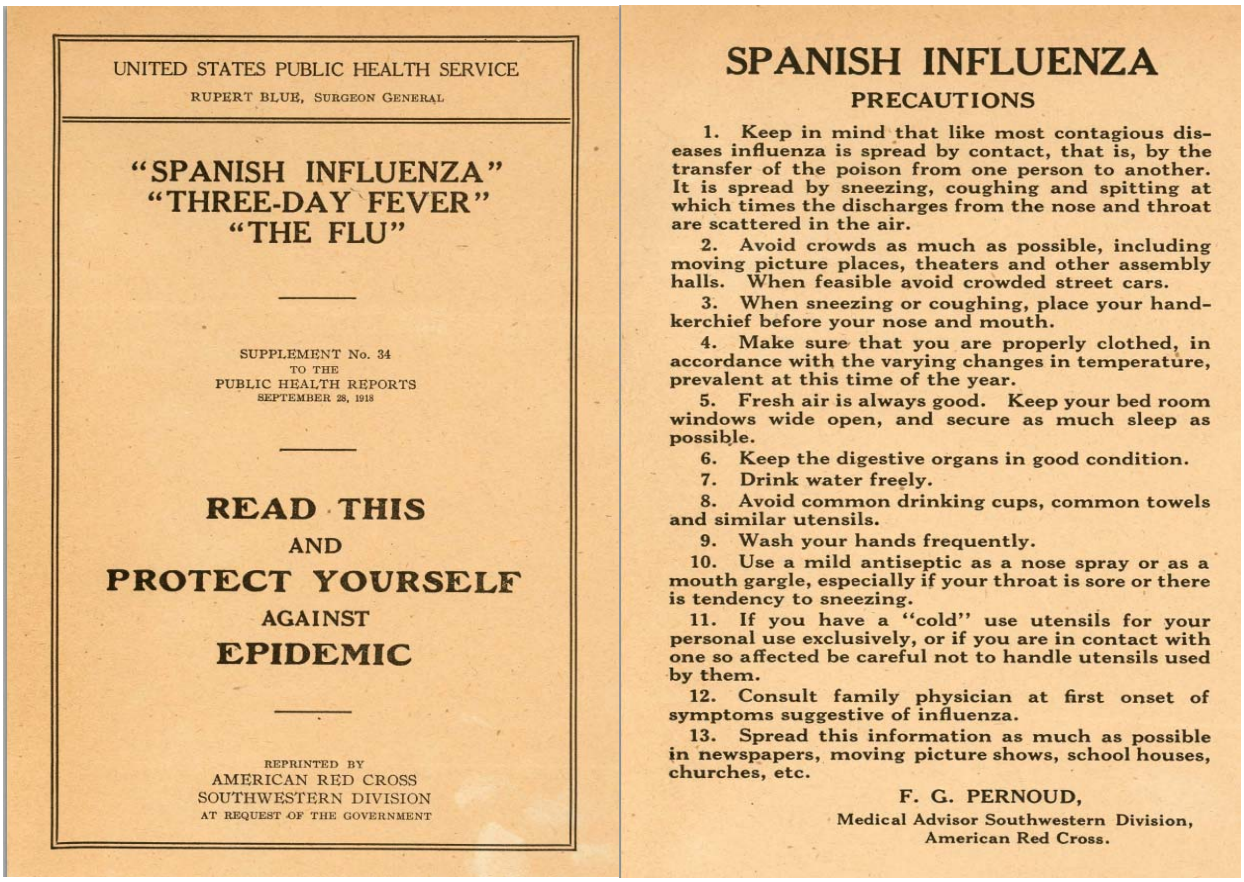
[44] S. Tenpenny, *Vaccinations & Smallpox*, 2 October 2002, <http://educate-yourself.org/vcd/vaccinationsandsmallpox11nov02.shtml>, last viewed 30 June 2012.
[45] G. Krasner, *The dangers of smallpox vaccination*, NaturoDoc, <http://www.naturodoc.com/library/public_health/truth_re_smallpox_vaccine.htm>, last viewed 19 June 2012.
[46] The Smallpox Vaccination Program, National Academies Press, 2005, available from <http://www.nap.edu/openbook.php?record_id=11240&page=9>
[47] World Health Organisation Bulletin, Smallpox: Dispelling the myths, Volume 86, Number 12, 909-988, 2008, available from <http://www.who.int/bulletin/volumes/86/12/08-041208/en/index.html>
[48] Popular Mechanics – Spanish flu pandemic of 1918, 31 July 2007, available from <http://www.popularmechanics.com/science/environment/natural-disasters/4219884-3>

prevalent there than anywhere else. However, in a public health report published September 28, 1918, by the US Public Health Service, is highlighted that "[...] although the present epidemic is called 'Spanish Influenza', there is no reason to believe that it originated in Spain"[49]. Another point that merits our attention in the 'Precautions' section of this report (Figure 3), is the inducement and responsibility given to people for spreading these precautionary measures among the wider community (Para. 13). By assigning the general public with such a responsible role of informing others, it could have a positive impact in the accuracy of information that was shared, suppressing to some extent, the generation and spread of rumours.



UNITED STATES PUBLIC HEALTH SERVICE
RUPERT BLUE, SURGEON GENERAL

"SPANISH INFLUENZA"
"THREE-DAY FEVER"
"THE FLU"

SUPPLEMENT No. 34
TO THE
PUBLIC HEALTH REPORTS
SEPTEMBER 28, 1918

READ THIS
AND
PROTECT YOURSELF
AGAINST
EPIDEMIC

REPRINTED BY
AMERICAN RED CROSS
SOUTHWESTERN DIVISION
AT REQUEST OF THE GOVERNMENT

SPANISH INFLUENZA
PRECAUTIONS

1. Keep in mind that like most contagious diseases influenza is spread by contact, that is, by the transfer of the poison from one person to another. It is spread by sneezing, coughing and spitting at which times the discharges from the nose and throat are scattered in the air.
2. Avoid crowds as much as possible, including moving picture places, theaters and other assembly halls. When feasible avoid crowded street cars.
3. When sneezing or coughing, place your handkerchief before your nose and mouth.
4. Make sure that you are properly clothed, in accordance with the varying changes in temperature, prevalent at this time of the year.
5. Fresh air is always good. Keep your bed room windows wide open, and secure as much sleep as possible.
6. Keep the digestive organs in good condition.
7. Drink water freely.
8. Avoid common drinking cups, common towels and similar utensils.
9. Wash your hands frequently.
10. Use a mild antiseptic as a nose spray or as a mouth gargle, especially if your throat is sore or there is tendency to sneezing.
11. If you have a "cold" use utensils for your personal use exclusively, or if you are in contact with one so affected be careful not to handle utensils used by them.
12. Consult family physician at first onset of symptoms suggestive of influenza.
13. Spread this information as much as possible in newspapers, moving picture shows, school houses, churches, etc.

F. G. PERNOUD,
Medical Advisor Southwestern Division,
American Red Cross.

Figure 3: Report published by the US Public Health Service, as a response to the 1918 Infuenza pandemic.

The myths and legends that grew around the flu spread through news papers and, much like the disease itself, were carried by the thousands of soldiers returning from the front lines. Stories of healthy people getting on trams, only to die before they reached their stop, or waking up healthy but dying before night fell abounded and as a result, it initially was known as the 'Three (or Five) Day Fever' or simply 'The Flu'. In both the Americas and Europe, as well as parts of Asia, wearing a gauze mask it soon became mandatory to use public transport and, in some cases, to go outside. As with nursery rhymes that tend to make an appearance during the course of (or very soon after) an infectious disease outbreak, the same was evident of rhyming jingles, which were made in such a way that would be easy to memorise. The jingles were

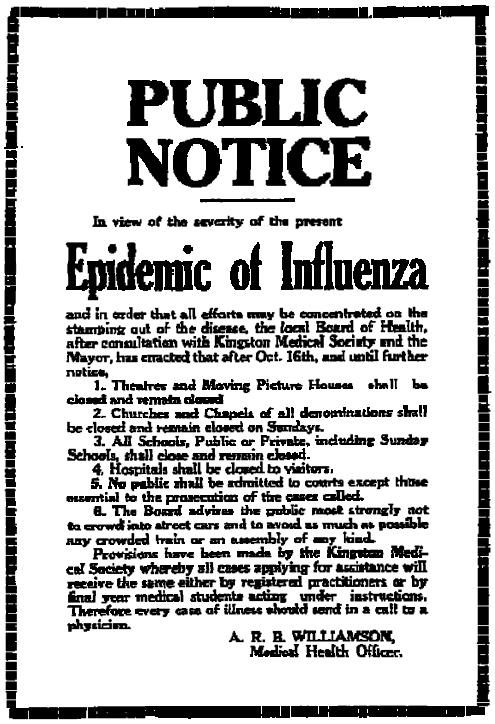
[49] US Public Health Service – Public Health Report on Spanish Influenza, available from <http://www.odl.state.ok.us/oar/governors/documents/span-flu.pdf>

produced and circulated among the community, encouraging people to be more proactive towards the disease. Some examples would be:

Obey the laws,
and wear the gauze,
protect your jaws,
from septic paws

Cover up
each cough and sneeze,
If you don't
you'll spread disease

While today, even though the origin of the outbreak has not been identified, the virus strain has. At the onset of the pandemic, numerous theories arose as to the cause of the sickness. At first, it was rumoured to be German weapon[50]. Other theories suggested it was the result of miasma- side effects of the widespread use of mustard gas and fumes[51]. One of the primary reasons for confusion was that, unlike most flu outbreaks, it hit the hardest those between the ages of 20 and 40, while children and the elderly had a better chance of survival. It has since been discovered that the flu caused the body's immune system to drastically overreact, which meant that those with the strongest immune systems were most at risk.



PUBLIC NOTICE

In view of the severity of the present

Epidemic of Influenza

and in order that all efforts may be concentrated on the stamping out of the disease, the local Board of Health, after consultation with Kingston Medical Society and the Mayor, has enacted that after Oct. 16th, and until further notice,

1. Theatres and Moving Picture Houses shall be closed and remain closed
2. Churches and Chapels of all denominations shall be closed and remain closed on Sundays.
3. All Schools, Public or Private, including Sunday Schools, shall close and remain closed.
4. Hospitals shall be closed to visitors.
5. No public shall be admitted to courts except those essential to the prosecution of the cases called.
6. The Board advises the public most strongly not to crowd into street cars and to avoid as much as possible any crowded train or an assembly of any kind.

Provisions have been made by the Kingston Medical Society whereby all cases applying for assistance will receive the same either by registered practitioners or by final year medical students acting under instructions. Therefore every case of illness should send in a call to a physician.

A. R. B. WILLIAMSON,
Medical Health Officer.

Figure 4: Notice cancelling public gatherings in an attempt to curb the spread of Spanish Influenza.

As with any outbreak of disease, many potential cures arose in an attempt to suppress the pandemic. Distilled spirits were used to 'sweat' out the sickness, though in areas of North America, where prohibition was in effect, this proved a problematic solution, even leading to those that supported the alcohol ban approaching known speakeasies and black-market dealers. Another cure involved soaking cloths in hot water and turpentine, before wringing them out and placing them on the back and chest of the infected. Other cures involved using sulphur or other elements[52].

Modern explanations of the influenza (1918) pandemic vary from the traditionally accepted virus cause, to the bacterial infections. However, two human produced factors have also been under the microscope. The first is vaccination. Opponents of modern vaccination programs, such as Eleanor McBean, claim that the influenza (1918) pandemic was caused, not by a particularly virulent strain of influenza, but rather an over-reaction to a mild flu, which led to mass vaccination programmes whereby thousands were 'infected' with unsafe vaccines and died as a result.[53] They reject the claim that the virus struck quickly, instead insisting that it worked unnoticed for days before the infection, and only proved fatal when people's immune systems were compromised following vaccination. However, mass vaccination was not

[50] The Influenza Pandemic of 1918, Stanford University, <http://virus.stanford.edu/uda/>, viewed 28 June 2012.
[51] T. Jefferson and E. Ferroni, *The Spanish Flu through the BMJ's eyes*, BMJ: 339, 1397-1399, 2009, <http://graduateinstitute.ch/webdav/site/developpement/shared/developpement/cours/E728/textes/spanish%20flu.pdf>, viewed 12 June 2012.
[52] CBC Digital Archives – *Surviving the 'Spanish Lady'*, available from, <http://www.cbc.ca/archives/categories/health/disease/influenza-battling-the-last-great-virus/surviving-the-spanish-lady.html>
[53] Swine flu expose – Chapter 2: *The Spanish Influenza Epidemic of 1918 was caused by vaccinations*, available from <http://www.whale.to/vaccine/sf1.html>

the most commonly used form of protection against the pandemic, rather quarantine and isolation was pursued in an attempt to create a fire break and stymie the spread of infection[54]. Gatherings were banned, including church services, sporting events and fairs. Vaccinations were employed, but not on a scale necessary to cause the pandemic. However, while it may be a stretch to claim that the majority of deaths can be attributed to vaccination, there are a number of urban legends and reports of people collapsing immediately after receiving their injections, which may account for the initial spread of the rumour.

Another claim lays the blame at the feet of aspirin. According to a blog addressing various issues with skepticism[55]:

> "In 1918, the convergence of a toxic drug, massive corporate advertising, and government, military and medical pressure to use the drug, led to tens of millions of deaths."

The claims that aspirin caused a significant number of deaths associated with the 1918 pandemic stem from a paper published in 2009 by Karen M. Starko. This paper posits that the over-prescription and dangerously high doses of aspirin led to cases of pulmonary oedema in those whose immune systems had been compromised (Starko, 2009). Variations in mortality rates between areas and age groups is linked to the availability of different forms of aspirin and different medication habits.

The influenza pandemic of 1918-19 spread across the world and is still referred to in the media today when a new virus or disease appears that may threaten to strike with similar consequences. As a result, it has become somewhat cliché in its use. However, many of the contemporary legends and urban myths that exist surrounding pandemics today (e.g. Big Pharma, immunization etc.) can trace their roots back to the flu that swept across the globe in the wake of the First World War.

5. An account of infectious disease outbreaks in the 21st century and the media discourse

Throughout history, the emergence and impact of major pandemics has always been associated with movement of people, as much as it has been for climatic factors. Great 'accomplices' in people movement have been the vast Empires, which always supported activities related to trade, opening new routes and possibilities for merhcants. For instance, it is believed that the fleas and rats carrying the disease of Black Death, made their way along such a route – the Silk Road, stretching from Europe all the way to China[56]. Mass movements of populations during the First World War, especially soldiers travelling for days in the sea to reach the eastern coasts of the United States or mass, has been yet another cause – except trade – for the spread of an infectious disease within weeks. The gloabalisation of illness had arrived much earlier than the conceptualisation of 'globalisation' itself.

The continuous flow of people, ideas and commodities across borders is what characterises modern societies, resulting in a greater entrenchment of globalisation. Key ingredient that contributes significantly to the propagation of globalisation is the ease of transfer. The technological advances and the 21st century revolution in telecommunications, including mass media, social media and the World Wide Web, paved the

[54] The Influenza Pandemic of 1918, Stanford University, <http://virus.stanford.edu/uda/>, viewed 28 June 2012.
[55] FoodFreedomGroup.com – Bayer and death: Vaccines and CDC's myth of a 1918 virus, 11 July 2011, available from <http://foodfreedom.wordpress.com/2011/07/11/vaccines-and-cdc%E2%80%99s-myth-of-a-1918-virus/>
[56] J. N. Hays, *Epidemics and pandemics: Their impacts on human history*, ABC-CLIO, 2005, p.61.

way for rapid transfer of knowledge and ideas. The same can be said for the increasing mobility and distances covered by people around the world in hours, or even minutes. This also brings us to the rapidness by which an infectious disease could spread, faster than a rumour can via the internet.

5.1 Infectious diseases in the dawn of the post-Westphalian era

Many debates have commonly been focusing on the positive and negative impact of globalisation, as well as the notion of 'homogenisation'. The idea of creation of a globalised or international culture traces its roots back in the 1960s, and the conceptualisation of the world by the visionary Marshall McLuhan (1964) as a "global village" – only to become a reality few decades later with the World Wide Web. Cultural homogenisation had been a powerful trend during that time, with the mass media playing a definitive role in the growth of this movement.

On the other side, among the various consequences of globalisation, this orchestrated shift towards cultural homogenisation led directly or indirectly to a number of modern day epidemics, or better, the globalisation of diseases, with obesity being the most prominent example. The global HIV/AIDS epidemic that has been around since the 1980s, is another case that relates closely with the consequences of globalisation. One of the most famous quotes belongs to Dick Thompson, WHO spokesman during the time that the SARS epidemic broke out. He said that "*If SARS is a threat anywhere, it's a threat everywhere, so this is a matter of global health security*"[57]. This phrase was picked up and used later by media centres to describe at times the 'criticality' of a disease epidemic for polio[58] and dengue fever[59] or by specialised agencies, such as the WHO and the US Homeland Security Council to bring forward various security issues associated with a disease pandemic[60] [61].

The impact of globalisation on the emergence and control of international threats was particularly felt in the aftermath of the 9/11 terrorist attacks in the US. This event changed not only the perceptions of the world as per the vulnerabilities of the State to external threats, but also strengthened the notion that security of the State, as well as emergency planning and preparedness, start from outside the geographical borders, not within. This would suggest that globalisation constitutes a weakness for the State; according to Kaldor (2006), the processes known as globalisation "*are breaking up the socio-economic divisions that defined the patterns of politics which characterised the modern period. The new type of warfare has to be understood in terms of this global dislocation*" (2006; p. 73). Although Kaldor (2006) makes reference to modern warfare, certain principles would also apply in the 'fight against a disease'. To borrow a psychological term, globalisation has created a distorted *internal locus of control* for the State, meaning that despite what the State believes in terms of exercising control or actions performed to restrain the spread of disease, it cannot operate independently, as an absolute entity since preventive measures taken in one country, can have immediate repercussions to another. In fact, the International Health Regulations (IHR: 2005) – an international legal instrument that is binding on 194 countries across the world – published

[57] The New York Times – *The SARS epidemic: The implications*, 03 May 2003, available from <http://www.nytimes.com/2003/05/03/world/the-sars-epidemic-the-implications-sars-spreads-in-taiwan-who-plans-trip-there.html?pagewanted=all&src=pm>
[58] World Health Organization (News Release) – *India records one year without polio cases*, 12 January 2012, available from <http://www.who.int/mediacentre/news/releases/2012/polio_20120113/en/index.html>
[59] GlobalPost – *Dengue fever: A deadly, neglected tropical disease*, 16 November 2011, available from <http://www.globalpost.com/dispatches/globalpost-blogs/global-pulse/dengue-fever-neglected-tropical-disease-0>
[60] World Health Organization – *Keynote address at the Global Health Security Initiative Ministerial Meeting in Paris, France, 9 December 2011*, available from <http://www.who.int/dg/speeches/2011/health_security_20111209/en/index.html>
[61] US Homeland Security Council – *National Strategy for Pandemic Influenza: Implementation Plan*, 2006, available from <http://www.fao.org/docs/eims/upload/221561/national_plan_ai_usa_en.pdf>

by the World Health Organization, highlight exactly this need for international cooperation and synchronised actions against a common threat.

This sense of having entered the post-Westphalian era, where sovereignty of nation-states is overshadowed in the view of international organisations exercising a form of supranational governance for critical events that could pose a threat worldwide. Ricci (2010) points out to the fact that *"[...] the SARS outbreak represented a significant qualitative shift in political authority in which the forces of globalization ushered in a new post-Westphalian era. Infectious diseases as well as larger public health issues were simply too large and interconnected to be handled solely by the state. [...] actors such as the WHO have emerged in the post-SARS political landscape with the authority and power to shape global health.*" (2010; pp. 7-8).

The actions taken by WHO during the most recent epidemics, among other things, also aimed at creating a sense of unity between countries against a common threat (e.g. the expression "Fighting a global war" often was used during the H5N1 epidemic), and heighten the responsibility of each country toward others. For instance, the Chinese government received much criticism from WHO and the international community for underreporting first cases and seriousness of the SARS virus back in 2003[62]. Despite the continuous efforts made by WHO to create a common front (and common understanding) on international level for effectively dealing with the most recent epidemics, there was considerable scepticism among people or whole communities about WHO motives and role in this whole process. Scepticism which was then transformed into rumours, urban legends, or conspiracy theories, each one manifested through unique forms of narrative. For instance, Rubin (2011) in a OECD project report entitled *Future Global Shocks: Pandemics* highlights that during the 2009 (H1N1) pandemic, WHO came under attack from several quarters "*accused of succumbing to the pressures of the pharmaceutical industry to 'fake' a pandemic in order to drive up profits from vaccine production"* (Rubin, 2011; p.13). The report continues that such claims prompted a statement by Dr Keiji Fukuda on behalf of WHO at the Council of Europe hearing on 2009 (H1N1) pandemic on 25 January 2010 *"[...] emphatically denying that the WHO were improperly influenced by the pharmaceutical industry"*.

The post-Westphalian era gives a whole different meaning to the globalisation of infectious diseases, with respect to the emergence of urban myths and use of the narrative discourse by the officials, healthcare professionals, the mass media and the general public. The complexities of communication and different views in the prioritisation of actions between supranational organisations, central governments and local communities regarding the response to a health crisis, can be directly perceived and create confusion general public. Different approaches, opinions and views channelled through to the public by the mass media, the internet and healthcare professionals usually fuel suspicion and give rise to concerns, which as we have discussed, there is a tendency for these concerns to be shared with other people from the community, whether online or offline. In cases of an emergency or crisis, people are more inclined to demonstrate an altruistic behaviour, even as a way to protect their mental health (Schwartz et al., 2003; Mikulincer & Shaver, 2005), so any kind of information that is perceived to be crucial or of interest, will be forwarded to their immediate circle of friends and family. The evaluation of the information for accuracy, truthfulness and reliability may come later; in times of an emergency, main priority is the diffusion of the information.

[62] The New York Times – *The SARS Epidemic: China admits underreporting its SARS cases*, 21 April 2003, available from <http://www.nytimes.com/2003/04/21/world/the-sars-epidemic-epidemic-china-admits-underreporting-its-sars-cases.html?pagewanted=all&src=pm>

This section continues to provide the frame of the most recent epidemics in the 21st century, and capture the essence and characteristics of urban myths, contemporary legends and rumours circulating at that time, alongside the media discourse that was used to communicate information about the disease to the general public.

5.2 The Foot and Mouth Disease (FMD) 2001/2007

The Foot and Mouth Disease (FMD) differs from the other accounts in that it holds no threat to human health, rather the fear of a pandemic comes from almost primarily economic considerations and concerns. The virus infects cloven hoofed animals such as cows and sheep and, traditionally, if even one animal gets infected, the whole herd must be destroyed. For this reason, combined with the speed and ease at which it spreads, FMD is greatly feared by both the farming and tourism industries. In 2001, FMD arrived in the UK and sparked a wave of myths, legends, fear and speculation.

The outbreak of FMD in the UK was the first of its kind there in two decades and resulted in the European Commission placing a ban on exports of milk, meat and livestock from the UK[63]. Initially there were accusations of cover ups, both by the UK government and by local farmers[64]. Many of these rumours grew out from the revelation that the Ministry of Agriculture had sourced wood for pyres to burn infected animals months prior to the outbreak itself[65]. Claims by the president of the National Farmers' Union, Ben Gill, that eco-terrorism may have been a factor in the introduction of FMD into the UK outraged environmentalists and animal rights activists and forced the Ministry of Agriculture to publicly confirm that there was no evidence to suggest that this was the case[66]. Other potential sources rumoured, included illegal immigration and smuggling, which was implicated in its spread to Northern Ireland[67].

Although FMD is harmless to humans, fears that it could 'make the jump' turned many off eating beef and pork products[68] - a behaviour that also became evident during the 2009 (H1N1) pandemic due to the misconception that the swine flu virus can be transmitted from eating pork products (an urban myth which we shall analyse later). However for others, the fear centred on conspiracy theories and suspicions concerning those in authority. One such theory is that, not only was FMD released deliberately in the UK, but that the strain released was genetically altered, stolen from a research centre and was possibly capable of becoming infectious to humans[69].

Although there was an FMD vaccine available, the UK government chose not to use it, fearing that it would do long term damage to the reputation of their meat exports. By the beginning of 2002, the crisis was over and the last cull of livestock had been performed. However, the outbreak of Foot and Mouth Disease in the UK in 2001 shows how fear and rumour can spread, even if the illness concerned does not impact on

[63] BBC News – *Ban follows foot-and mouth outbreak* , 21 February 2001, available from <http://news.bbc.co.uk/onthisday/hi/dates/stories/february/21/newsid_2519000/2519703.stm>
[64] The Guardian – *Foot-and-mouth cover-up claims*, 23 May 2001, available from <http://www.guardian.co.uk/uk/2001/may/23/footandmouth.peterhetherington>
[65] The Guardian – *Rural myths catch military connection in their net* , 22 March 2001, available from <http://www.guardian.co.uk/uk/2001/mar/22/footandmouth.paulbrown>
[66] The Guardian – *Eco-terrorists caused outbreak,* 15 May 2001, available from <http://www.guardian.co.uk/uk/2001/may/15/footandmouth.paulbrown>
[67] Breaking News (Ireland) – *Suspected smugglers cause foot-and-mouth fear in Northern Ireland*, 28 February 2001, available from <http://www.breakingnews.ie/ireland/suspected-smugglers-cause-foot-and-mouth-fear-in-northern-ireland-5351.html>
[68] Through The Looking Glass Forum – *Foot and Mouth disease in the UK*, available from <http://www.ttlg.com/forums/showthread.php?t=1679>
[69] Patricia Doyle (Rense.com) – *Foot and mouth released in agraterrorism attack on UK?*, 13 April 2001, available from <http://www.rense.com/general9/fttd.htm>

human health. Pandemics, epidemics and disease outbreaks of any form can cause disruption and even despair, whether humanity is susceptible or not.

5.3 Severe Acute Respiratory Syndrome (SARS) Epidemic

Just as the influenza pandemic of 1918 is often employed to the potential lethality of new illnesses, SARS has become the point of reference to highlight how pandemics can be more about fear mongering and exaggeration rather than real danger. However, for several months, the fear of SARS was very real, and outbreaks *did* occur, though it did not spread globally as initially feared and predicted. It was in regions where SARS did occur however, that the illness inspired rumours and gossip concerning causes and cures. In Singapore, where SARS hit hardest, several rumours became so entrenched that in his May Day address, Deputy Prime Minister Lee Hsien Loong was forced to publicly refute them:

> *"So no racial group is immune. Let me try to kill off three more rumours. Abstaining from pork will not increase your immunity. Although alcohol kills viruses, drinking alcohol will not prevent Sars. And I hear that some people think smoking wards off SARS!"*[70]

Mr Loong also requested that people not spread rumours and panic through chain emails or text messages and threatened sanctions on those who spread false reports of outbreaks. Singapore suffered greatly from the threat of SARS, where the government quarantined over 4,000 people and was forced to cut its economic growth forecast from between 2% and 5% to between 0.5% and 2.5%[71].

Although the infection itself affected Singapore and surrounding regions most heavily, the threat was felt on a global scale. Part of the reason fear was elevated was the lack of an effective cure or vaccine[72]. In its absence, the World Health Organisation recommended that people take the same precautions as they would with normal flu; washing hands regularly, avoiding large, public gatherings and avoiding travelling to areas where outbreaks had been confirmed[73]. Alternative remedies also grew out around the threat. One treatment, involved two berry bushes, *amelanchier alnifolia* and *rosa nutkana*, both of which, it was claimed, were used for centuries by Native Americans for a long list of ailments[74]. Xylitol sugar was also suggested, alongside

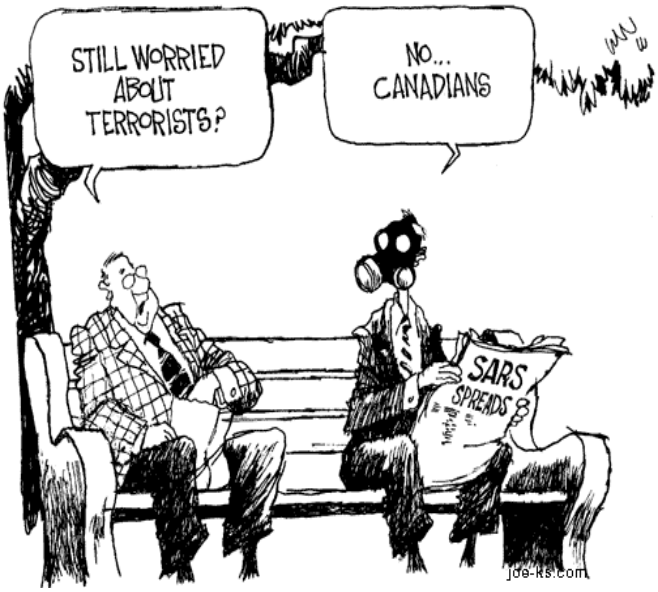


Figure 5: Cartoon showing highlighting the fear of further spread of SARS from Canada.

[70] News24 – *Killing off SARS myths*, 02 May 2003, available from <http://www.news24.com/World/Archives/Sars/Killing-off-Sars-myths-20030502>
[71] Bloomberg News – *SARS myths popped by Singapore's Lee*, 1 May 2003, available from <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a2WUdYkty6JI&refer=asia>
[72] The Daily Mail – *SARS cure is years away*, available from <http://www.dailymail.co.uk/health/article-177710/Expert-Sars-cure-years-away.html>
[73] Kevin Miller – *SARS: Beyond our control, but not beyond God's*, available from <http://powertochange.com/discover/life/sars/>
[74] Ken Becker – *Doctors make natural treatment for SARS available worldwide*, 6 May 2003, available from <http://www.tetrahedron.org/news/NR030507.html

claims that bacteria could not adapt to it[75]. Other 'natural' cures and treatments for SARS also appeared. According to the Times of India, advice such as the following became commonplace at the height of the fear: *"Administer one drop of the homoeopathic medicine Bryonia 200 once every two hours (with dropper) and get rid of SARS in two days"*[76]. In the US, such claims led to numerous websites being shut down after they were shown to be fraudulent. In any case, it is noteworthy that despite progress made in the sector of medicines, there is a great number of people still turning to remedies and homeopathic medicine, same as in previous centuries with the outbreak of pandemics – this having extensions to the collective unconscious and memory surviving through myths that was discussed earlier in the report.

SARS is believed to have come from the coronavirus, which was traced back to bats in Southeast Asia. However, because of the nature of the virus, conspiracy theories formed around its 'true' origin. Unlike most flu-like viruses, the SARS virus posed the greatest risk, not to children and the elderly, but to young adults – same as in the influenza (1918) pandemic. As a result, claims that the virus was manmade began to surface[77]. The prevalence of SARS in China, especially compared against the lack of severe outbreaks in the US, led some to speculate that it was a deliberate covert attack by the US against China aiming to slow down its economic growth, which was beginning to bite at the heels at the last remaining superpower[78]. Another explanation was the SARS was a 'trial run', designed to prepare the way for a more deadly virus, which the 'Elite' would use to strengthen their grip on society[79].

Although contemporary legends surrounding SARS range from it being a weapon of control, to a covert form of warfare, its most enduring legacy has been its failure to become the pandemic that governments feared and warned against. Although SARS never became the global pandemic that institutions feared, some areas, particularly in China, did suffer from outbreaks. In 2004, advancements toward a vaccine were finally made, both in the US and in China, though by that time the virus was already abating[80]. With a fatality rate of around 1%, SARS may not have resulted in millions of deaths, but it had significant impacts on the economies of the regions where outbreaks occurred. In Toronto, where 44 people died as a result of infection, a concert, headlined by the Rolling Stones and AC/DC and nicknamed SARS-Stock, was held to draw tourism back to the area and help give a boost to local economies[81].

In the end, the fear of SARS overtook the pandemic itself. In the words of Professor Peter Curson, medical geographer and director of the health studies program at Macquarie University*, "SARS was going to be the 'plague to end all plagues' … SARS showed how panic, fear and hysteria at both an individual and official level could totally overwhelm the epidemic itself"*[82].

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[75] SARS, however, is a virus and this claim is made for its curative properties in general.
[76] The Times of India – *Magical cures for a mysterious SARS*, 14 May 2003, available from http://articles.timesofindia.indiatimes.com/2003-05-14/bangalore/27285896_1_sars-mystery-disease-alternative
[77] Mass infectious diseases and poising of people <http://yqyq.net/74649-Massovye_infekcionnye_zabolevaniya_i_otravlenie_lyudeiy.html>, viewed 4 April 2012.
[78] HowStuffWorks – *What is the SARS conspiracy theory?,* available from <http://health.howstuffworks.com/diseases-conditions/infectious/what-is-sars-conspiracy-theory.htm>
[79] L. Horowitz, *SARS: A great global scam*, available from <http://www.rense.com/general36/scam.htm>
[80] HowStuffWorks – *Is there a SARS vaccine?,* available from <http://health.howstuffworks.com/diseases-conditions/infectious/sars-vaccine.htm>
[81] More information on the SARS-Stock event available from <http://www.thecanadianmusicscene.com/sars.html>
[82] A. Wilde, ABC Health and Well-Being , *Bird flu myths and facts*, 23 February 2006, available from, <http://www.abc.net.au/health/features/stories/2006/02/23/1834266.htm#.UHCOcFElvas>

5.4 Avian Influenza (H5N1)

Arriving on the heels of SARS, the announcement heralding a new potentially deadly pandemic was met with as much scepticism as fear. Once again, the virus, this time H5N1, appeared in Asia, resulting in three deaths in Vietnam in December 2003[83]. Although it receded after, H5N1 reappeared the following year, killing thirty two people across Thailand and Vietnam. Over the next months, H5N1 – dubbed Avian or Bird Flu after its carrier – travelled west, killing six thousand birds in the space of a year and given as the cause of death for forty one people across Asia. By June of 2006, one hundred and thirty deaths across ten countries from Asia to Eastern Europe were attributed to the Avian Influenza H5N1. By 2007, the virus had spread to Western Europe, though although it did result in some deaths, the global pandemic some feared has yet to materialise.

As with all modern viruses and diseases, the H5N1 has been linked various urban myths and contemporary legends, not just involving the virus itself, but also its cures and vaccine. Rumours circulated that the virus was transmissible through eating infected poultry, and a paper by Robert Webster and Elizabeth Jane Walker in American Scientist warned that Avian Flu threatened to "kill a large fraction of the population"[84]. Much like SARS, claims of conspiracy abound, again focused on the claim that the United States has less than honourable intentions. However, these arguments have not been confined to online message boards or websites, but rather, have appeared in a book with the title *It's Time For The World To Change: The Divine Hand Behind Avian Influenza* written by the then Indonesian Health Minister Dr. Siti Fadilah Supari and endorsed by President Susilo Bambang[85]. In her book, Siti Fadilah Supari alleges that the US aims to use Avian Flu for creating a biological weapon. Other contemporary legends offer evidence to suggest that H5N1 is manmade, though the most commonly reoccurring claim is that the pandemic, more specifically the *fear* of a pandemic, has been manufactured for political and financial gain. These claims tie in with those surrounding the Tamiflu vaccine, which was administered as a precaution against Avian Flu. This contemporary legend, widely circulated throughout message boards and groups, alleges that Donald Rumsfeld, a major shareholder of Gilead Sciences Inc. – the company that owns the patent to Tamiflu – deliberately created the fear of a pandemic so as to market a vaccine he and others knew had almost no effect on the virus. It was also claimed that, 'in normal conditions' the virus had almost no effect on humans[86].

While there was much suspicion surrounding the motives of administrations and vaccination, natural remedies and treatments for the avian flu widespread, varying from herbal remedies and homeopathic medicines, to life style changes and prayer. Common solutions, such as Vitamin C and organic diets are often suggested, as is fasting[87]. Other treatments suggested for this type of flu include a 3% Hydrogen Peroxide solution administered through into the ear canal with a syringe, or inhaling steam from a bowl of water containing eucalyptus or tea tree oil[88]. Oscillococcinum, a homeopathic medicine especially popular in France, has proven to be not just a popular natural remedy, but also a source of contention between

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[83] *Ibid*.

[84] R. G. Webster and E. J. Walker, *Influenza*, American Scientist Online , 91(*2*), 2003, available from <http://people.scs.carleton.ca/~soma/biosec/readings/influenza/influenza.html>

[85] US involved in bird flu conspiracy, transcript from AM broadcast for ABC Australia, 29 February 2008, available from <http://www.abc.net.au/am/content/2008/s2167325.htm>

[86] About.com – *The Tamiflu/Rumsfeld connection* <http://urbanlegends.about.com/library/bl_bird_flu.htm>, viewed 19 May 2012.

[87] Survive-Bird-Flu.com – *Bird flu natural remedy*, <http://www.survive-bird-flu.com/bird-flu-natural-remedy.html>, viewed 2 June 2012.

[88] W. Last – *Bird flu protection and natural cures*, http://www.angelfire.com/az/sthurston/Natural_Cure_For_Bird_Flu.html>, viewed 2 June 2012.

those who practice homeopathy and those who claim it is unfounded and dishonest[89]. Although not limited to conversations about treatments for the avian flu, message boards between both parties can often devolve into claims of ignorance on both sides, or even neglect when children are involved[90].

The pandemic that was threatened when H5N1 first gained notoriety has yet to materialise. However the virus has also not ebbed away and still makes its way into headlines and urban myths. Most recently attention has moved away from the standard Avian Flu and toward human made mutant strains of the virus. It is not a contemporary legend that the virus has been manipulated in the lab, but a confirmed fact. However, in March of 2012, The (American) National Science Advisory Board for Biosecurity revised their earlier stance on two papers concerning mutated strains of the virus and recommended their publication[91]. The mutated strain made the virus capable of being transmitted through air, rather than requiring direct contact and the papers, which discussed the research, had previously been blocked for fears that it could be used by terrorists. News that the virus has been manipulated has resulted in renewed fears and triggered contemporary legends, with 'bioterrorism' being used once again by government official as central narrative, saying that H5N1 could be reengineered as a weapon to be used by terrorists in the next few years[92]. The team of Dutch scientists – led by Dr. Ron Fouchier – who performed the experiments to genetically mutate the H5N1 virus into an infectious airborne strain of human flu, rather argued this would help the scientific community to gain knowledge for the development of new vaccines and drugs, so this created conflicting messages not only for the public, but within the government and scientific circles. As a result, more recently, mutation has returned to the centre of media attention, as newspapers and websites have carried the alarming headline that "A Bird Flu Pandemic is just three mutations away"[93].

Contemporary legends continue to form and grow around H5N1. As new parts to its history emerge, from a fresh outbreak, to discussions surrounding mutation, fresh myths and rumours emerge in tandem. While the world awaits the long heralded pandemic, much like the virus itself, the legends will continue to mutate and evolve, changing with the seasons, though capable of spreading with much greater virility and speed.

5.5 2009 (H1N1) pandemic (Swine Flu)

The H1N1 influenza is a respiratory illness that produces human-like flu symptoms in pigs that has, at times, sparked major health concerns when transmitted to humans. The strain H1N1 was implicated in the 1918 pandemic that was responsible for the deaths of millions around the world and a feared outbreak in 1976 resulted in a mass vaccination programme in the US, which was later discontinued due to safety concerns about the vaccine. In 2009, the H1N1 influenza appeared once again, initially in Veracruz, Mexico, with the World Health Organisation declaring it a pandemic in June 2009. The declaration of a pandemic has since been subject to much criticism and claims that the WHO advisors had links to major pharmaceutical companies, and so were compromised by a conflict of interest in stressing the potential severity of the outbreak. The H1N1 flu vaccinations also became subject of suspicion, with other 'natural' cures offered as alternatives.

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[89] Otherhealth.com – Forum about the *holistic way to health*, available from <http://www.otherhealth.com/homeopathy-list-discussion/6562-flu-oscillococcinum-avian-flu-2.html>

[90] AvianFluTalk.com – Forum on the *pandemic flu preparation*, available from <http://www.avianflutalk.com/forum_posts.asp?TID=19387>

[91] Nature – *US biosecurity board revises stance on mutant-flu studies*, by D. Butler and H. Ledford, 30 March 2012, available from <http://www.nature.com/news/us-biosecurity-board-revises-stance-on-mutant-flu-studies-1.10369>

[92] The Independent – *Alarm as Dutch lab creates highly contagious killer flu*, 20 December 2011, available from <http://www.independent.co.uk/news/science/alarm-as-dutch-lab-creates-highly-contagious-killer-flu-6279474.html>

[93] The Daily Mail – *Bird flu is only three steps from mutating into deadly new form that could cause global pandemic – and scientists are scrambling for new vaccines*, 11 July 2012, available from <http://www.dailymail.co.uk/sciencetech/article-2172043/Bird-flu-steps-mutating-deadly-new-form-cause-human-pandemic--scientists-scrambling-new-vaccines.html>

Rumour and contemporary legends abound every facet of the 2009 (H1N1) pandemic, from the cause of the illness itself, to claims about the validity or dangers of the various cures and preventative measures. From the announcement of the H1N1 influenza in Mexico, each stage of the flu outbreak was couched in controversy, urban myths/contemporary legends and accusations of malpractice. Claims that Mexico had attempted to cover up the outbreak of the H1N1 influenza (same as it happened with China during SARS), eventually gave way to claims that the threat of pandemic had been exaggerated by the World Health Organization. Much of the fear relating to the H1N1 influenza, was its similarity to the flu that caused the pandemic of 1918. Nonetheless, the narrative constructed to support claims that the H1N1 influenza could become the 'new' 1918 flu pandemic was rather misleading, as some commodities (e.g. access to clean water, antiviral drugs etc.) of the present had not been around back then; absence of such commodities can indeed have facilitated (or facilitate) the spread of the illness.

Some decades ago, there was another outbreak of swine flu in the US (1976) which led to mass vaccinations in the US, in relation to the death of an Army Private in Fort Dix, US. By the time the panic had faded, one person had died but the vaccine was accused of causing more the 500 cases of *Guillain-Barré Syndrome* (a rare neurological condition that causes paralysis, but can be fatal) resulting in the abandonment of the vaccination programme[94].

One of the most frequently recurring contemporary legends surrounding the H1N1 influenza (or Swine Flu) is that it was created in a laboratory. Much of the impetus for this comes from a journalist named Jane Burgermeister. In April, 2009, Burgermeister filed charges with the FBI against Baxter International, accusing them of shipping batches of vaccine contaminated with Avian Flu. Her blog site, *birdflu666.wordpress.com*, now focuses on the dangers of vaccine and accusations of abuse against major pharmaceutical companies[95]. She has also filed a case in Austria on behalf of those who claim they developed narcolepsy as a result of the H1N1 influenza vaccine, the links of which were identified by the Helsinki Sleep Clinic[96]. Burgermeister's background as a contributor to The Guardian, The British Medical Journal and Nature gave weight to her claims, as did her announcement that she had been fired from her position as the European correspondent of the Renewable Energy World, an online magazine offering daily international news. As such, she became a high profile opponent to vaccinations, though her case against the H1N1 influenza vaccine has meant that she has become strongly tied to contemporary legends surrounding the cause of the illness and the dangers of the vaccine against it.

Figure 6: Passengers on the Mexico City Metro wearing masks to protect against Swine Flu.

Burgermeister's claims went beyond allegations of negligence, extending into the realm of conspiracy and tying into other rumours and contemporary legends surrounding the pandemic. At the most extreme, were claims that the outbreak was linked to the 'Illuminati', the 'Bilderberg Group' and other secret societies. According to some legends, 'The Elite', the umbrella name for the secret societies and powerful

[94] Wikipedia – *1976 Swine Flu outbreak* <http://en.wikipedia.org/wiki/1976_swine_flu_outbreak>, viewed 19 June 2012.
[95] More information about the case available from <http://birdflu666.wordpress.com/>
[96] The Independent – *Swine flu jab linked to narcolepsy*, 29 March 2012, available from <http://www.independent.ie/health/health-news/swine-flu-jab-linked-to-narcolepsy-3065112.html>

corporations created Swine Flu (or the vaccine, depending on the source), to manage or cull populations, either for financial gain or for the sake of the planet[97]. This outbreak was released on unsuspecting populations, to the financial benefit of the 'Big Pharma', major pharmaceutical companies who are making billions of dollars in revenue manufacturing vaccines that are ineffective at best, but dangerous at worst. Only few months after the H1N1 influenza was declared a pandemic, it was reported in the UK media that according to estimates this pandemic is expected to give an economical boost of around £1.5 billion to pharmaceutical corporations GSK and Astra[98], while countries' economies 'become strangulated' as the financial costs for purchase and storage of vaccines is particularly high. The link between the vaccine and narcolepsy was also picked up on by mainstream media, causing concern among the general public that the vaccination for the illness carried more risks than the illness itself, particularly in Ireland, where a government report was commissioned to examine the link[99].

Outside of rumours, legends and accusations surrounding the cause and intent of the 2009 (H1N1) pandemic, cures and treatments flowered on the internet, offering relief or protection from the causes and symptoms of the virus. Anti-virals such as Tamiflu and Relenza were recommended by health boards, as well as the use of paracetamol to relieve the symptoms[100]. Other remedies, using herbs and minerals were also claimed to hold the secret of the cure from the H1N1 influenza, including apple cider vinegar and a mixture of garlic, onion, vinegar and hot sauce[101]. Other natural methods involved the use of 'Ayurveda' medicine, which claimed to source cures through methods over five thousand years old and offered a variety of concoctions and recipes for cures, as well as recommending the practice of yoga[102].

Many of the myths surrounding the H1N1 influenza and its vaccine share similarities, but may differ in explanations of the intentions of those involved, or the underlying reasons for how events unfolded. However, in the wake of the 2009 (H1N1) pandemic, two claims surrounding the pandemic emerged and circulated, not just within the circles of those who cried conspiracy, but also within the mainstream media and press. The first was that the dangers of the pandemic were exaggerated by the World Health Organisation, that the pandemic that was declared, never materialised and the announcement ultimately cost governments millions in preparation. This extended to claims that WHO was unduly influenced by vaccine manufacturers, who stood to profit greatly from vaccine sales on the back of a pandemic being declared[103]. The declaration of a pandemic was further criticised when a study carried out by the Journal of the American Medical Association found that the Swine Flu had been no more severe on children and

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97 Information retrieved from the Centre for Research on Globalization in Canada <http://globalresearch.ca/index.php?context=va&aid=14513>, Alex Jones' Prison Planet <http://www.prisonplanet.com/swine-flu-attack-likely-a-beta-test.html>, and the Healthy Wyze Report <http://healthwyze.org/index.php/the-man-made-swine-flu.html>

98 The Telegraph - *£1.5bn swine flu vaccine boost for GSK and Astra*, 25 October 2009, available from <http://www.telegraph.co.uk/finance/newsbysector/pharmaceuticalsandchemicals/6432931/1.5bn-swine-flu-vaccine-boost-for-GSK-and-Astra.html>

99 The Irish Times – *Narcolepsy linked to flu vaccine in 25 children*, 19 April 2012, available from <http://www.irishtimes.com/newspaper/ireland/2012/0419/1224314925694.html>

100 Irish Health – *Swine Flu Q&A* by J. McCarthy , available from <http://www.irishhealth.com/article.html?id=15853>

101 HowToDoThings.com – *Curing the swine flu: Influenza facts and remedies*, available from <http://www.howtodothings.com/health-fitness/how-to-cure-swine-flu>

102 NowPublic – *H1N1 swine flu cure by Ayurveda and homeopathy*, 24 August 2009, available from <http://www.nowpublic.com/health/h1n1-swine-flu-cure-ayurveda-and-homeopathy>

103 The Telegraph – *Swine flu treatment: Antiviral drug stocks, antibiotic use and pandemic planning*, 1 May 2009, available from <http://www.telegraph.co.uk/health/swine-flu-information/5258424/Swine-flu-treatment-Antiviral-drug-stocks-antibiotic-use-and-pandemic-planning.html#>

young adults than seasonal flu, despite WHO having previously cited younger demographics as being more likely to suffer complications following infection[104].

Much like SARS before it, the 2009 (H1N1) pandemic, and the debate over whether it was even indeed so a pandemic, damaged the credibility of both the World Health Organisation and the various government health agencies who prepared for an emergency that, in the eyes of the public, never materialised. This criticism came, not only from groups that would traditionally be hostile or suspicious of vaccination, but also medical journals and government officials. As a result, terms like pandemic and emergency became tainted in the eyes of the public, as expressed by the following comment, which appeared at the top of the best rated comments section on the Daily Mail's story *The 'false' pandemic: Drug firms cashed in on scare over swine flu, claims Euro health chief*:

> "*To which we could add AIDS, Mad Cow Disease, Avian Fl, MMR scares, Global Cooling, Global Warming and any number of "Scares" over the past 20 years that amounted to nothing. The common denominator is our dumb politicians that are either in someone's pocket or are just plain stupid. In the case of the UK we can safely assume that our illustrious [sic] PM falls into the latter category. Throw some taxpayer money at the problem and be seen to be doing something. It even manages to fool 30% of the electorate!*"[105]

To better summarise the most common myths and contemporary legends that emerged with the 2009 (H1N1) pandemic and vaccines, diffused and circulated among the general public at the time, we collected information from a diverse environment of sources that reported *myths and facts* about the flu, such as the mass media (e.g. BBC, Fox News), science magazines (e.g. New Scientist), universities and medical schools (e.g. Harvard Medical School), networks promoting natural health (e.g. Natural News) and anti-vaccine organisations (e.g. US National Vaccine Information Centre). We have identified and categorised the myths and contemporary legends – appearing in the form of statements – in three groups which relate to public perceptions and compliance with preventive measures : 1) Myths about the 2009 (H1N1) Influenza (Swine Flu), 2) Myths about H1N1 vaccines and preventive measures, 3) Myths about use of alternatives to H1N1 vaccines and preventive measures.

It is important to note that during this stage we do not investigate the veracity of the statements per se, but rather, we present the most popular urban myths and contemporary legends of the time, in the form of statements. The narrative discourse accompanying each of these stories could have negatively affected public compliance with preventive measures as put forward by competent authorities and healthcare professionals. All the following statements are presented as *myths.*

[104] Bloomberg News – *Swine flu found no more severe than seasonal virus*, 7 September 2010, available from <http://www.bloomberg.com/news/2010-09-07/swine-flu-in-children-is-no-more-severe-than-seasonal-virus-study-finds.html>
[105] The Daily Mail – *The 'false' pandemic*, by Fiona McRae, 18 January 2010, available from http://www.dailymail.co.uk/news/article-1242147/The-false-pandemic-Drug-firms-cashed-scare-swine-flu-claims-Euro-health-chief.html#ixzz1xmXfY5wp

1. Myths about the 2009 (H1N1) Influenza (Swine Flu)

PERSONAL CONCERN

- The swine flu is just a bad cold / The swine flu is annoying but harmless / The symptoms are like the seasonal flu.
- This is a mild flu, death rates are lower than seasonal flu.
- It is unlikely for healthy adults and young people to get the swine flu.
- The swine flu can prove to be dangerous only for the elderly / pregnant women.
- The swine flu does not pose a major threat for children over 5 years old.
- The swine flu is transmitted by pork products / Someone could catch the swine flu by simply being around pigs.
- By shaking hands with people, one could spread/get the swine flu.
- Only those who live in cold weather regions can get the swine flu.
- Immunity is conferred by contracting the swine flu.
- A person cannot get the flu twice during the same season.
- It is better to get the swine flu at early stages while the symptoms are mild, than risk catching it later or getting vaccinated**.**

GENERAL CONCERN

- The swine flu is man-made.
- The swine flu was intended as a weapon of mass destruction.
- The swine flu is an excuse for mass vaccination.
- Governments wanted to create a global crisis.
- Governments wanted to use the H1N1 strain as beta test / a biological warfare agent.
- Once this pandemic is over, the humanity is safe for another few decades.
- The H1N1 outbreak is declared a pandemic, therefore millions will die.
- Outbreaks like the swine flu pandemic are inevitable and cannot be prevented.

2. Myths about H1N1 vaccines and preventive measures

- The flu can be transmitted from the vaccine.
- The flu vaccines are dangerous / more dangerous than the H1N1 virus.
- Squalene, ingredient of the flu vaccine used as a booster, caused the Gulf War Syndrome.
- Thimerosal, ingredient of the flu vaccine used as a preservative, contains mercury, a poisonous substance responsible for autism and other developmental disorders.
- Flu vaccines cause the Guillain-Barré Syndrome.
- Flu vaccines actually weaken the immune system weaker, making people less able to withstand viruses on their own, same as the antibiotics leading to the creation of more resistant viruses.
- Governments plan to make mandatory vaccinations for people against the H1N1 virus.
- If someone gets vaccinated against regular flu each year, there is no need then to get vaccinated for the swine flu.
- The flu vaccine needs to be administered before November (or December), in order for it to be effective.

3. Myths about use of alternatives to H1N1 vaccines and preventive measures

- It is enough that someone just eats organic food, takes vitamins, wears a mask, washes hands and drinks plenty of liquids.
- Face masks alone can protect someone from the swine flu.
- Bringing a child to a 'swine flu party' is the better option for building a natural immunity to the virus[106].
- There is no treatment for the flu.
- Antibiotics can effectively fight the flu.
- Resting is the best treatment for the flu.

5.6 The media discourse and conceptual metaphors in epidemics of the 21st century

It was back in the late 1970s when American novelist Susan Sontag, in her book-lengthy essay *Illness as metaphor* (1978) decided for the first time to take a systematic approach on the use of metaphors by the media, around certain diseases, and the influence these metaphors exert on public attitudes to the diseases themselves and to those who experience them. In particular, the diseases put under the 'linguistic' microscope were avian flu, cancer, diabetes, heart disease and HIV/AIDS. Sontag (1978) principally focuses on cancer, and recurrent use of military metaphors as well language of plague with connotation to the Bible. Some examples would be descriptions of cancer as 'killer disease' or 'invasive', while the treatments are typically presented as a 'chemical warfare' or 'bombardment' on a 'crusade against cancer'. According to Sontag (1978), the majority of these metaphors are lurid, turning each disease into a mythology, when a disease should only be regarded as a disease and nothing more.

However, as we have already presented in this report and the discussion on rhetorical tropes (Section 3.3), the medical discourse inevitably resorts on figurative speech such as metaphors and metonymies, for an effective communication and conceptualisation of the disease, through use of imagery at times. Montgomery (1996) extends this theory to suggest that two sets of fundamental conceptual metaphors exist: a) the biomilitary metaphors (i.e. 'attack' – 'defense etc.) and b) the bioinformationist metaphors (i.e. 'transmitters' – 'messages' – 'encoders' etc.). The sensitive and key issue in this case however, is not the use of metaphors in medical discourse per se, but rather who constitute the actors in this discourse. Clearly, the relationship between the mass media and listeners/readers/viewers has qualitative differences, from that between the healthcare professional and the expert.

As the mass media become key agents during large-scale emergencies or disasters, responsible for communicating information and messages to the public, it would be important to examine the framing of most recent epidemics by the mass media, through use of metaphor and myths. In particular, we draw knowledge from existing semantic analyses on conceptual metaphors for the Foot and Mouth Disease (FMD), the SARS epidemic and the Avian Influenza H5N1.

Foot and Mouth Disease (FMD)

The principal source of information on the conceptualisation of the FMD through use of narrative and rhetorical tropes, comes from a study conducted by Nerlich et al., in 2002, which involved the collection and analysis of the metaphors that dominated newspapers during the year of the outbreak. Some

[106] The same belief existed during the 17th century when mothers brought their children to 'pox parties'.

theoretical context is given on war metaphors and biblical plague connotations made in disasters, which perhaps justifies in the conscience of people any intervention they make, seen as 'natural', or absolutely necessary, given the circumstances. Nerlich et al. (2002) suggest that metaphors of war and plague framed the issues in such a way, that would make policy on mass slaughtering to appear as inevitable and preferable to all other alternatives. Clearly, from the side of the government different modes of persuasions were employed in order to persuade and reassure the public of the ethicality of all actions taken.

According to Nerlich et al. (2002), the UK government, media and citizens "*tacitly and almost unconsciously relied on a well-structured network of frames and metaphors to conceptualise the problem*" (p.93). This conceptualisation moved to another level with the media presenting photographic images to accompany their stories; images of piles of burning carcasses extending in the horizon, which gave an apocalyptic sense as the images carried an iconic force. The increasing repetition of some words and presentation of strong images, was a point when war metaphors started taking a more literal meaning, and as Gwyn (2002) points out, soon after the publication of the images, the discourse about disease "no longer sound like metaphors to our ears, but more like commonsense representations" (p.131); something that had also been noted by Sontag (1978) in her discussion about the effects of repetition of the metaphor.

We noted the importance and usefulness of metaphors and metonymies in communication for creating the platform where healthcare professionals and the patients can better understand each other. The case had been the same for the FMD, which required from different actors (i.e. policy makers, the media and the general public) to stand united against a common front, which was no other but the eradication of the disease. The extensive use of figurative speech and employment of rhetorical modes in speeches given by officials, had an effect in creating a common front for the government and farmers who 'declared war' against a common enemy (Nerlich et al., 2002). This is particularly relevant in the context where intervention strategies require the mass immunisation for humans, such as the H1N1 influenza more recently; in which case, there is still a common front against the disease, but rhetoric used is more frequently in the direction of spreading panic and fear, not jointly *fighting against* something.

Nerlich et al. (2002) continue their discussion to suggest that humans and FMD were conceptualised as two contestants in a struggle for superiority. From this conceptualisation, two major fields of metaphor emerged for the media: 1) those used to describe human actions against the disease and 2) those used to describe the actions of the disease itself (personification). Some examples of recurring metaphors that appeared in the media discourse included:

- The **journey** metaphor: *road to recovery, back on the right track, get one step at a time.*
- The **war** metaphor: beastly foe, enemy in a war, spreading like a battle group.
    - *to control, contain, combat, defeat, eradicate, annihilate, exterminate*
    - *exclusion zones, restricted zones*
    - *stage of siege, fortress*
    - *emergency, national emergency, national catastrophe, tragedy*
    - *battle, fight, frontline*
- The **fighter** (FMD) metaphor: *hitting, striking hard, hammering hard, severely, seriously.*
- The **victim** (FMD) metaphor: *left reeling, brought to its knees, knocked sideways.*

Nerlick et al. (2002) conclude that the metaphors, narratives and images used during the FMD outbreak, heightened the sense of risk, nightmare and doom perceived by many in the UK, but significantly helped the public, politicians, scientists and journalist to naturalise a highly complex phenomenon. It is also

suggested that metaphors allow people to imagine some control has been assumed over a world that cannot otherwise be conceived or comprehended in its entirety, due to its complexities.

SARS epidemic

In contrast to the FMD, which was a relatively local incident, the appearance of SARS was immediately categorised as a global threat, so received intensive coverage in the international mass media. The study that was carried out by Wallis and Nerlich (2005) pointed to the fact that newspapers equivocated between presenting SARS as a major danger and dismissing it as a panic. Since the SARS never really materialised as an epidemic in the UK or even Europe, reporting was more concerned with stories about preventing the disease from reaching the country. The case had been different however in Taiwan, where the war metaphor was used across different ideological contexts, as a function of political orientation of the different newspapers, with discussions on SARS based more on political discourse rather than medical discourse (Chiang & Duann, 2007).

Looking into the *war* metaphors of the time, it is interesting to observe the shift from 'battle' to 'war' in describing the responses to SARS (Wallis & Nerlich, 2005). What is yet more interesting to note, is the limited use of 'war' as metaphor when the outbreak coincided with the Iraq war. Some of the few war metaphors that were used at the time, include the 'SARS fighting headquarters', 'Global battle against SARS panic', and 'the most effective defence'. Wallis and Nerlich (2005) inform us that war metaphors were heavily used in other parts of the world, where the threat was immediate, such as China and Taiwan, whose president openly declared that *'fighting the epidemic is like fighting a war. We face an invisible enemy'*. With regard to war metaphors, and drawing from comparisons with the experience of the FMD, Wallis and Nerlich (2005) conclude that "*war metaphors are used more prominently when the relationship to the disease is either 'personal' or perceived as a threat to a 'nation'*" (p. 2633). The study continues to present that the main conceptual metaphor used for SARS in the UK media was 'SARS is a killer', taking various forms such as 'killer virus', 'killer plague', or 'deadly bug'. As a 'killer', SARS was a single, unified entity, which is what differentiated it from the war metaphors used in FMD. In addition, this killer metaphor evokes considerable panic and fear for the general public, making them feel under some invisible threat.

Another important observation made by Wallis and Nerlich (2005) relates to the time where people infected with SARS threatened to bring the disease into the country, in which case an alternative metaphor system was used: *disease is a possession*. In this metaphorical schema, people 'catch', 'carry', 'pick up', 'get', 'have', 'bring', 'acquire' or 'contract' disease. This emphasises individual culpability in disease, which reminds us in a way the differences in metaphor for cancer (misfortune) and HIV/AIDS (personal culpability), as highlighted by Sontag (1978). As suggested, when SARS became an immediate threat, the 'victim' became a 'carrier' or 'case', a danger rather than an object of compassion (Wallis & Nerlich, 2005).

This study concludes to suggest that by "understanding this shift in metaphorical framing, away from the well-entrenched metaphor system of war and plague, might not only signal a shift in the perception and policing of an emergent disease, but can also contribute to an emerging shift in the theorising of metaphor itself, away from seeing it purely as a rhetorical or cognitive device towards seeing it as a cultural and political one" (Wallis & Nerlich, 2005; p. 2638).

Avian Influenza (H5N1)

This section concludes with presenting the rhetorical and conceptual framework of metaphors used by the media to report Avian Influenza (H5N1). A number of studies concentrating on the media coverage of the H5N1, make clear that the war metaphor was still 'in fashion', especially during the initial stages of the epidemic (De La Rosa, 2007; Koteyko, Brown & Crawford, 2008). Still, the use of war metaphor by the

media never reached the levels of the FMD outbreak, although there was observed an increase of 'battle', same as it happened with SARS two years before (Koteyko, Brown & Crawford, 2008). Nonetheless, the war metaphor has been among the ones to be deployed mostly by the media.

The journey metaphor was equally used throughout the period of the epidemic (De La Rosa, 2007), which was quite reasonable if we only consider that H5N1 was spreading over great distances, from East to West. Another type of imagery presented quite often, was the virus depicted as 'being on its way', as something hostile and frightful that is about to start knocking on people's doors. Another metaphors which appeared as becoming the norm in news reporting of epidemics, was the 'killer' metaphor. Terms like 'killer flu' or 'killer virus' were frequently used by the media (Koteyko, Brown & Crawford, 2008), same as it happened during the SARS outbreak (Wallis & Nerlich, 2005). Also, the 'frontline' metaphor reappeared quite often during the H5N1 epidemic, as well as other metaphors with warfare or militaristic connotations.

De La Rosa (2007) makes an interesting observation as per the status of the H5N1 epidemic, and the possibility for this to unfold into a pandemic. In her paper, she highlights the different approach taken by the media during that time, in the discourse and new type of metaphors that were employed to describe (or prepare for) a new reality that public would be faced with. The new metaphors that emerged in that situation had been (De La Rosa, 2007; 23):

- the **control metaphor**: the disease can be effectively controlled.
- the **virus as a natural force**: the disease can be controlled to a certain extent, sharing the dynamics of a natural disaster.
- the **virus as a supernatural force**: the disease escapes the control of the government, acceptance of fate.
- the **global network metaphor**: efforts to instil the notion that in a globalised world, infectious disease outbreaks can be a threat for everyone – stressing the need for countries to fight a global war.

This last metaphor perhaps has been crucial in creating a particular mindset for people of different cultures and societies, whereby is understood that nowadays, infectious disease outbreaks in one part of the world can become as much as problem for everyone, which in turn calls for greater responsibility and attention both from the side of news coverage by the media, but also from the side of the general public and compliance with preventive measures foreseen by the governments; which is not always the case, especially for those who continue to be sceptical about vaccines and purpose of vaccination.

6. The anti-vaccination movement, the narrative and infiltration to the public

6.1 The anti-vaccination movement

The anti-vaccination movement traces its roots back in the early 1800s, some years after the smallpox epidemic in the US, when Edward Jenner introduced the first ever smallpox vaccine. Aside of any side-effects that most likely affected the physical appearance – giving rise to stories about people turning into cows – a more organised opposition to immunisation grew on different grounds. For instance, Reverend Edward Massey, published a sermon in 1772 entitled *The dangerous and sinful practice of inoculation*, which basically argued that diseases were God-sent so anyone who receives vaccination, challenges the will

of God[107]. Another strong point of conflict and controversy among people and the authorities have been the Vaccination Acts put forward by the UK government in the mid-1800s, making vaccination mandatory even for infants, something that caused dispute even back then (as today) about parents' responsibility and eligibility of taking decisions for their own child. The UK Vaccination Acts even foresaw the imprisonment of individuals who were non-compliant with vaccination, directly challenging fundamental values such as the right to autonomy and personal freedom (Spier, 2001). This made William Tebb, an anti-vaccination activist, to move permanently to the US in 1879, and based on his rhetoric about violation of civil liberties and fundamental human rights, he founded the Anti-Vaccination Society of America. One century later, the names of infectious diseases and the narrative discourse may have changed, however the core ideology of the anti-vaccination movement continues to live on.

In addition to individual protests and initiatives opposing vaccination on the grounds of political rights and religious beliefs (with examples of parents also 'using' religion to avoid vaccination[108]), there are also cultural perspectives that need to be taken into account. For instance, it has been discussed already that China during the SARS outbreak in 2003, developed theories about a 'Western plot' which aimed at the depopulation of the country by conduct of biological warfare. The result was a growing suspicion and mistrust for vaccines in many other South-East Asian countries also.

Nowadays, controversies over the efficacy, safety and morality of compulsory immunisation stem from the longstanding tension between the two, sometimes divergent, goals: protecting individual liberties and safeguarding the public's health[109]. It is the efficacy and safety of vaccines that seems to generate great concern for the general public, especially as new stories come on the surface, while moral issues also form part of the discourse. With the years, as the Western societies become increasingly more 'medicalised', with people also able to claim pseudo-scientific expertise for various medical issues, this allowed for those non-compliant to vaccination to enrich their discourse and find more reasons to resist vaccination, aside from religious, moral or philosophical objections. Some other reasons include beliefs that vaccine-preventable diseases do not pose a serious health risk, fears that governments find ways to exercise control in areas of personal choice, concerns that vaccines are promoted for profit and more. Those reasons reflect to some extent the vaccine myths presented earlier, that were associated with the H1N1 influenza. This is an indicator of how closely interconnected are myths and legends surrounding epidemics with the anti-vaccination movement.

The strongest anti-vaccination movements tend to appear in places where usually there is some history of vaccine-related disasters (Kitta, 2012). For instance, places like the UK, Japan and Scandinavian countries, closely followed by the US, Canada and Australia have among the lowest vaccination rates. More recent example to illustrate this would be the whooping cough epidemic that hit the US this summer, described to be worst in half century[110]. It has been reported that a 'frighteningly' high number of parents in Washington State chose not to have their children vaccinated, with the officials and public health experts making the

[107] Here, we find obvious the similarities and connections to Martin Luther's teachings about infectious diseases, which we described in Section 1.
[108] USA Today – *Parents use religion to avoid vaccines*, by Steve LeBlanc, 18 October 2007, available from < http://usatoday30.usatoday.com/news/health/2007-10-18-religion-vaccines_N.htm?csp=34&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+UsatodaycomHealth-TopStories+(News+-+Health+-+Top+Stories)>
[109] The History of Vaccines – *Article on the cultural perspectives on vaccination* <http://www.historyofvaccines.org/content/articles/cultural-perspectives-vaccination>, viewed 18 July 2012.
[110] Reuters – *US whooping cough outbreak could be the worst in half century*, 20 July 2012, available from <http://www.reuters.com/article/2012/07/20/us-usa-whoopingcough-idUSBRE86J05U20120720>

links of this outbreak with the traditionally low vaccination rates for the State[111]. According to other reports, the same had been evident also in California, which is another State with relatively low vaccination rates.

6.2 Strategies that fuel the anti-vaccination discourse

In the time of major disease outbreaks during the last 200 years, one of the priorities for governments has been to secure public health through administering vaccines for the general population. This, inevitably leads some sceptics to generate and diffuse rumours, conspiracy theories and/or myths concerning the related vaccine. In fact, some of the urban myths and contemporary legends appear to be stubbornly resistant in time, with the mass (mainstream) media playing a central role in this, like TV broadcasts, as well as the internet. To this end, there are some 'emblematic' figures that seem to be leading the anti-vaccination movement (especially in the US), which currently focuses mostly on the 'MMR vaccine causes autism' debate, finding their way through the mass media and the internet for communicating messages. Especially in the former case, projection through the media also gives people a falsely perceived credibility and veracity in the claims made. This would include people like Dr. Andrew Wakefield, who spurred the controversy about linkage between the MMR vaccine autism after publishing evidence in *The Lancet*, Dr. Bob Sears (leader of the 'attachment parenting' movement), Ginger Taylor (an anti-vaccine activist and blogger), Barbara Loe Fisher (President of the National Vaccine Information Center) and Sallie Bernard (Executive director of SafeMinds) to name a few.

Through different strategies and extensive use of tropes, these modern anti-vaccination activists make it possible to reach deeper and influence perceptions of others, promoting at the same time the interests of their non-profit organisations. Perhaps the most famous anti-vaccination activist in our days is Jenny McCarthy, founder of the Generation Rescue organisation for autism. A celebrity that has received much publicity from the mass media, receiving the title of a 'warrior mom', which expression creates an impression of fighting for a holy cause. A key component of her narrative was bypassing the traditional gatekeepers of medical knowledge by searching for information online. One of the Generation Rescue (and McCarthy's) slogan is 'Educate before you vaccinate', but education suggested in this case is knowledge that can be attained online. However, there are also journalists that appear to take explicitly a stance against vaccination, such as the CBS News correspondent, Sharyl Attkisson, who has been heavily criticised for sustaining the controversy over the effects of the MMR vaccine. In 2011, Attkisson wrote:

> *For all those who've declared the autism-vaccine debate over – a new scientific review begs to differ. It considers a host of peer-reviewed, published theories that show possible connections between vaccines and autism.*[112]

Today's culture of exposure to mass media, social media and the internet makes easy to understand why the anti-vaccination movement continues to grow, with many of the debates on public health issues remaining open. It goes without doubt the level of influence and immediate effect mass media have on shaping public opinion and behaviour. This is not all however. As we have discussed, due to this flood of information presented by the media about the (positive or negative) impact of vaccines on health, whether these are based on scientific data or purely on urban myths, people have started becoming more sceptical and actively engaged in search of 'reliable' sources and 'insider's' type of information to support their

[111] Forbes – *Anti-vaccine movement causes the worst whooping cough epidemic in 70 years*, available from http://www.forbes.com/sites/stevensalzberg/2012/07/23/anti-vaccine-movement-causes-the-worst-whooping-cough-epidemic-in-70-years/>

[112] CBS News – Vaccines and autism: A new scientific review, 31 March 2011, available from <http://www.cbsnews.com/8301-31727_162-20049118-10391695.html>

decision for choosing to vaccinate or not. Traditional routes are followed, such as listening to people from the wider community that claim expertise through personal experiences , which as we have seen carries the elements of dramatisation and *pathos* in their rhetoric, that can successfully engage and convince the listener to accept as truthful the story.

Such an example is provided by Kitta (2012) in her book *Vaccination and Public Concern in History*, where the word-of-mouth effect is present. A person shares with great certainty the information that the MMR vaccine causes autism, but presents this information in an abstract way that resembles much the FOAF tactic used in contemporary legend. It is also interesting to note the metonymy used for 'vaccine', replaced by the word needle (Kitta, 2012; p.3):

> *So, **I heard that MMR causes autism**. That's why there's so many kids with autism now, allergies too. There's something in there, an ingredient, I think it's a preservative, so the vaccine lasts longer. Well anyway, it's doing something to kid's brains, I'm not sure what, and they end up developing autism. It happens pretty quickly as well, usually within a few hours or days of getting the shot. I hadn't heard about it before, not until I had my baby, and **all these other mothers and I were talking while waiting for the nurse**. Well, **these moms knew all about it. One lady had a friend out in Placentia and it happened to her**. Her daughter was fine, until she got her MMR needle. Now they need all kinds of assistance and they don't have enough to cover her care and all. I don't know what to think of that.*
>
> *I truly believe that my little girl has autism because of the MMR vaccine. **I read all about it on the internet**, other babies with the same story. One day, they're fine. The they get their needle, then suddenly, out of nowhere, they are diagnosed with autism. Everyone tells me I'm wrong, but how could I be? There were no signs of autism, of anything, before that needle.*

These excerpts are fine examples of narratives associated with contemporary legends, as well as of the importance for people to share information in every occasion, considering this to be almost a responsibility toward other people from the community.

The second excerpt (paragraph 2) introduces us to another common (and increasingly preferred) method for people who want to find out more about vaccines, their ingredients and accompanying risks. And this where the paths of general public and anti-vaccine scepticism usually cross: the internet. An American report indicates that around 80% of internet users search for health information online[113], while another report prepared for the California Healthcare Foundation indicates that internet now rivals physicians as the leading source of health advice[114]. This is where the anti-vaccination movement flourishes, through websites, blogs and forums. Kata (2012) highlights the fact that people nowadays are likely to search online for health information, and the anti-vaccination movement has taken advantage of this milieu to disseminate its messages, employing various forms of narrative discourse (including tactics and tropes). Another point made early in this paper, is the differentiation between Web 1.0 and Web 2.0, where in the former case the content is controlled by the provider, whereas in the latter case the content is user-generated, with all the implications this has for diffusion of irresponsible messages, rumours urban myths, legends and conspiracy theories. Wilson and Keelan (2009) argue that Web 2.0 places carefully scrutinised

[113] Pew Internet and American Life Project –Health topics: *80% of internet users look for health information online*, 1 February 2011 <http://pewinternet.org/~/media//Files/Reports/2011/PIP_Health_Topics.pdf>, viewed 7 May 2012.
[114] J. Sarasohn-Kahn, *The wisdom of patients: Health care meets online social media*, April 2008, <http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/H/PDF%20HealthCareSocialMedia.pdf>, viewed 7 May 2012.

evidence next to the opinions of anti-vaccine activists and conspiracy theorists, potentially weakening messages from qualified experts.

The internet and social media networks then, have proven to be a two-edged sword in medicine as they have the power both to adequately inform and deceive or confuse online users. In the following section, we provide some examples of the narrative discourse used by the anti-vaccination community online, but would be much useful at this point to present the findings of a study conducted by Kata (2012), who identified most of the common tactics (i.e. actions undertaken to spread messages) and tropes (i.e. oft-repeated mottos and phrases) used by the anti-vaccination movement.

With regard to the tactics used by the anti-vaccination movement, these are classified as follows (Kata, 2012; p.3781):

1) **Skewing the science** (i.e. denigrating and rejecting science that fails to support anti-vaccine positions; endorsing poorly-conducted studies that promote anti-vaccine agendas)
2) **Shifting hypotheses** (i.e. continually proposing new theories for vaccines causing harm; moving targets when evidence fails to support such ideas)
3) **Censorship** (i.e. suppressing dissenting opinions; shutting down critics)
4) **Attacking the opposition** (i.e. attacking critics, via both personal insults and filing legal actions)

Following these tactics, Anna Kata continues to present a number of tropes which are commonly used by the anti-vaccine activists, usually as points of arguments when they are challenged by the scientific community. These tropes are (Kata, 2012; p.3781):

- *I'm not anti-vaccine, I'm pro-safe vaccines.*
- *Vaccines are toxic.*
- *Vaccines should be 100% safe.*
- *You can't prove vaccines are safe.*
- *Vaccines didn't save us.*
- *Vaccines are unnatural.*
- *Choosing between diseases and vaccine injuries.*
- *Galileo was persecuted too.*
- *Science was wrong before.*
- *So many people can't all be wrong.*
- *You're in the pocket of Big Pharma.*
- *I don't believe in coincidences.*
- *I'm an expert on my own child.*

These tropes and tactics might comprise the core of the anti-vaccine activism discourse, but is important to note that tropes like the above can have a great effect on people's perception, even for those who claim to be in favour of vaccination (Downs, deBruin & Fischhoff, 2008). Nonetheless, we should consider another factor at this point, which concerns people choices for accessing those websites in the first place, what is their starting point for people searching online, that leads into this labyrinth of more information about vaccines.

6.3 Seeking for information via search engines online and the anti-vaccine movement

For many people that use the internet, Google is the most popular search engine with an estimated 900 million unique visitors each month[115], and first port of call when they have a question or want to find out more about a subject. Google is a very useful tool in trying to gather a broad range of information from a variety of sources and viewpoints, and can serve as a useful indicator as to what information people are immediately exposed to when they seek answers or perspective online. Google is also popular, not just in English, but in many languages around the world, making it a useful tool for comparing how different countries across Europe are exposed to information and views on the vaccine debate.

In this context, a small-scale research was conducted, for providing an overall idea of the type of information that a person can be presented with, as a first attempt to retrieve some details about an infectious disease outbreak, a virus or a vaccine. This approach was partly based on the methodological framework adopted for a study (Kata, 2010), which based the collection of data on a keyword search in Google for identifying the proportion of anti-vaccination websites that appear in search results[116]. For the purposes of this report, and as a first step, some keywords were identified, relevant for someone making an internet search in response to the 2009 (H1N1) pandemic. The keywords that were identified as most suitable – based on the commonality of their use in everyday language – are presented below, as these were inserted in Google:

- Flu + Symptoms
- Swine + Flu + Vaccination
- Flu + Vaccination + Risk
- Swine + Flu + Symptoms + Vaccine
- Flu + Vaccine + Dangerous

The idea was to check on the first 10 results after having inserted the keywords, since it has been demonstrated that people seeking for information on health online, most often examine the first 10 results that appear after a Google search (Eysenbach & Kohler, 2002). To enrich our understanding about the associations made with these words on a cross-cultural level, we performed the same research across four different countries (UK, US, Italy, Spain), using the respective extension domains (i.e. google.com, google.co.uk, google.it, google.es). Note that the US and the UK are two countries with strong presence of the anti-vaccination movement, therefore it was expected that comparatively to Spain and Italy, more results would be linked to urban myths, legends and conspiracy theories around vaccination.

Following this procedure, and based on the title and short description accompanying each result, we picked out those websites which: 1) made explicit reference to some urban myth or was described as 'myths and facts' about swine flu or vaccines, or 2) made explicit reference to side-effects, even if the website was associated with medical experts or governmental organisations.

Another interesting set of data came from the suggestions made from Google, through the 'auto-complete' function, which (re)presents the most popular searches from users – associated words more often used

[115] eBiz – Top 15 most popular search engines, < http://www.ebizmba.com/articles/search-engines>, viewed 15 June 2012.

[116] The results of this study –which pointed to the fact that internet acts as a postmodern Pandora's box releasing arguments that are not easily dismissible – identified eight different themes appearing in the content of those anti-vaccine websites, with reference to vaccines and vaccinations; namely: a) Safety and effectiveness, b) Alternative medicine, c) Civil liberties, d) Conspiracy theories/search for truths, e) Morality, religion and ideology, f) Misinformation and falsehoods, g) Emotive appeals, h) Content aspects (Kata, 2010).

following the suggested combination of keywords. The results from this Google research are presented in Tables 5-8.

United States

Table 5: Search results from the US Google (google.com).

Keywords	Google suggestions	Number of websites on vaccine side-effects *or* vaccination 'myths and facts'	Websites / Links
Flu symptoms	2012 Children	None	None
Swine flu vaccination	Side effects Programme For babies	3	webmd.com newscientist.com dailymail.co.uk
Flu vaccination risk	Groups Pregnant women With pregnancy	5	naturalnews.com globalresearch.ca angelfire.com medicinenet.com cdc.gov
Swine flu symptoms vaccine	Side effects Risks After	5	webmd.com medicinenet.com suite101.com youtube.com orthomolecular.com
Flu vaccine dangerous	-	9	bewellbuzz.com globalresearch.ca naturalsociety.com theweek.com answers.yahoo.com suntimes.com

United Kingdom

Table 6: Search results from the UK Google (google.co.uk).

Keywords	Google suggestions	Number of websites on vaccine side-effects *or* vaccination 'myths and facts'	Websites / Links
Flu symptoms	Children 2011 2009	None	None
Swine flu vaccination	Side effects Programme Conspiracy	5	scs.qmul.ac.uk newscientist.com pediatrics.about.com bbc.co.uk dailymail.co.uk
Flu vaccination risk	Groups Pregnant women With pregnancy	7	cdc.gov.uk angelfire.com cnn.com medicinenet.com vran.org
Swine flu symptoms vaccine	Side effects Risks After	7	suite101.com medicinenet.com webmd.com

			buzzle.com youtube.com orthomolecular.org timesofindia.com
Flu vaccine dangerous	Ingredients Pregnant women	9	bewellbuzz.com globalresearch.ca theintelhub.com naturalsociety.com livestrong.com thenhf.com medicinenet.com angelfire.com

Italy

Table 7: Search results from the Italian Google (google.it)

Keywords	Google suggestions	Number of websites on vaccine side-effects *or* vaccination 'myths and facts'	Websites / Links
Flu symptoms	April 2012 Cure 2010	1	scienzasalute.blogosfere.it
Swine flu vaccination	-	9	macrolibrarsi.it terranauta.it psichesoma.com youtube.com blog.miglioriamo.it medicinalive.com scienzamarcia.altervista.org nanopress.it my-personaltrainer.it
Flu vaccination risk	-	7	eurosalus.com unblogindue.com mednat.org medicinalive.com solforoso.com febbresuinaitalia.blogspot.com pharmamedix.com
Swine flu symptoms vaccine	After	7	unblogindue.it rockspolitik.blogspot.com pomodorozen.wordpress.com rassegnastampanonwo.blogspot.it terranauta.it febbresuinaitalia.blogspot.com ariannaeditrice.it
Flu vaccine dangerous	-	9	laleva.org francesco-word.blogspot.com macrolibrarsi.it eurosalus.com psichesoma.com alister.it italianotizie.it scienzasalute.blogosfere.it terranauta.it

Spain

Table 8: Search results from the Spanish Google (google.es)

Keywords	Google suggestions	Number of websites on vaccine side-effects *or* vaccination 'myths and facts'	Websites / Links
Flu symptoms	Types Swine	None	None
Swine flu vaccination	-	5	geosalud.com youtube.com elproyectomatriz.wordpress.com
Flu vaccination risk	-	4	geosalud.com neurobudismo.wordpress.com europapress.es salud.laverdad.es
Swine flu symptoms vaccine	-	9	geosalud.com youtube.com movimientoantinwo.wordpress.com salud.practicopedia.lainformacion.com elpais.com elnuevodespertar.wordpress.com taringa.net ballesterapia.blogspot.com detengalavacuna.wordpress.com
Flu vaccine dangerous	-	8	migueljara.com 8300.com.ar youtube.com elnuevodespertar.wordpress.com fernandosolera.es es.answers.yahoo.com lavozdegalizia.es diariovictoria.com.ar

Such results would suggest that people who might be a bit sceptical about the benefits and overall impact of vaccines, and take the step to retrieve some more information online, are very often exposed to vaccine controversies that certainly offer little in helping to make any final decision about the benefits of immunisation. There is a wide variety of views offered on the effectiveness and efficacy of vaccines, from websites dedicated to alternative therapies, to scientific blogs and news stories.

It is important to note that in the case where keywords such as 'flu', 'symptoms' and 'vaccination' had been used, the majority of results provided links to official sources, offering guidance about how to better deal with the flu. However, in the case of combination of keywords such as 'vaccine', 'flu', 'risk' and 'dangerous', the majority of results for all countries, provided direct links to news reports, sceptic groups and organisations opposing vaccination uptake.

It was observed in the case of the US and the UK that certain suggestions made by Google, after having entered the keyword, such as 'side-effects', 'conspiracy' or 'ingredients', can motivate the user to follow down a path that leads to urban myths and contemporary legends surrounding vaccines. The same could also be argued with the appearance of links to watch a video in YouTube, which videos mostly included interviews of medical experts discussing the side-effects of the H1N1 vaccine. In the case of Spain and Italy, stories and views about the negative effects of getting vaccinated, appeared in the same frequency as in

the case of the US and the UK, despite the fact that anti-vaccination movement in those countries is not as powerful in presence.

In conjunction with what has been discussed in this section, and in support of these findings, it could be argued that the controversies and urban myths generated from the anti-vaccination movement, continue to persist as a result of its widespread infiltration to various means of communication, from the mass media, to the internet and social media. The tactics and tropes used online by the anti-vaccination movement is definitely a powerful agent in shaping public perceptions and behaviour about vaccination, but it should not be overlooked the *ease* with which myths and legends can appear in front of anyone who seeks being better informed about public health issues.

In the next section we proceed to analyse different sources of story-telling, manifested through fables, stories, myths and legends, media reportage, and most importantly personal experiences, in order to identify the recurring patterns that possibly influence (implicitly or explicitly) and underlie public perceptions about vaccines and behaviour during infectious disease outbreaks.

7. Empirical evidence and analysis of narratives on myths surrounding the 2009 (H1N1) pandemic

This section seeks to draw attention on the semiotics of language for infectious disease outbreaks as depicted through various sources (e.g. mass media, social media, literature etc.), as well as to discuss and analyse examples of narratives by employing methods of discourse analysis. This form of qualitative research allows to better illustrate the linguistic properties, dynamics and nature of discourse that can be decisive in the process of communication of myths and legends, around diseases and vaccination. In order to set the frame for the analysis of narratives, some information are presented with reference to the method of discourse analysis, followed by examples and illustrations of narratives from various sources that influence public perceptions and behaviour, as a function of the way information is presented.

7.1 Discourse analysis and approach to research

The discourse analysis is a qualitative research approach concerning two different domains associated with the topic under investigation: a) text, speech or visual analysis (narrative) and b) relevant symbolisms (semiology). This type of analysis is based on the understanding that there is much more going on when people communicate than simply transfer the information. This would suggest that discourse analysis reaches further, to capture symbolisms and meanings contained in language. It is generally assumed that language is a neutral, transparent medium, describing events or revealing underlying psychological processes in a more or less direct way. Language is represented not as reflecting psychological and social reality, but as constructing it. Language in the form of discourses constitutes the building blocks of 'social reality'.

In the case of epidemics and modern-day infectious disease outbreaks, language still functions in the same way, constructing social realities for people and helping them understand better complex notions involved in the process. Nowadays, the main difference lies in the polyphony of sources that carry forward messages, using different linguistic devices, to ultimately construct a web of different social realities that one has to carefully amalgamate, for responding rationally and responsibly to such an event.

Moving back to the principal objective of this section, and having collected material from different sources available online or in print and other unstructured material, we take a systematic approach that is two-fold, namely:

a) To examine recurring discursive patterns shared by a number of accounts / stories / reports concerning infectious disease outbreaks and vaccines or vaccinations;
b) To analyse linguistic properties that potentially have a great influence in communication and impact on public perceptions, providing evidence from texts.

As a rule, qualitative research – thus, also discourse analysis – is used to gain insight into people's attitudes, behaviours, value systems, concerns and motivations, while it seeks out the *why* and not the *how* of the topic under investigation. So, it is really a matter of clarifying in this research 'why' the general public thinks and responds in some particular ways. This question can only be answered through the examination of various sources that generate and spread information to the general public, including myths, legends and rumours masked as truths or facts in many occasions.

7.2 Print media

Newspapers (alongside with books) were historically the first medium for mass communication, closely connected with education. Even to this day, newspapers are still considered as 'tools' of education and learning for people, who often turn to print media in order to get more extensively informed about issues related to health, other than the information received by their personal doctors. In general terms, there is a view that nowadays people behaviour is largely affected by the media, which exist in multiple forms and environments, both in print and electronic format.

The media play an important role, both in the warning stages of a pandemic (before this escalates), and in the stages during or after the outbreak, which involve the response to the virus rather than precautionary measures against it. In fact, this was evident in 2009 (H1N1) pandemic, where in the first weeks more information were circulating about the nature of the virus and how to better protect against it, and then attention shifted to numbers of those infected or dead, human stories and personal narratives, vaccines and vaccination strategies and debates about the planning made by national competent authorities. Overall, it is the responsibility of the broadcast media to disseminate warnings to the public as soon as possible, and this was done quite successfully. Broadcast media also play a vital role during a large-scale disaster in reporting damage or other changes and in offering an alternative means of communication among emergency organisations or citizens.

It has been suggested by Goltz (1984), that it is important also to consider the wider context of news reporting, as it was found that social breakdown imagery (or myths) is significantly more likely to appear in coverage of foreign disasters – more human interest is injected in reporting of domestic news based upon direct observation and interviews from various sources. This has also been evident in the UK news reporting, with qualitative and quantitative differences observed in the period before and after the H1N1 was detected in the country. In fact, studies show that early media reports of an unexpected event would tend to exaggerate or emphasise the extent of the crises and this has been partly true in the cases we investigated. As McKay (1983) highlights, the media tend to report only extremely prominent cases, missing vital information at times that people want to get – also journalists misjudge public behaviour as being in a panic, so they go ahead and report 'panic' in the newspapers, or other sensational expressions such as 'tragic', 'terror' and more. Another characteristic of print media is the use of superlatives or adverbs that overstate the extent of something such as 'very much' or 'greatly'.

For this section, we scanned through reports and stories presented on newspapers and magazines during the 2009 (H1N1) pandemic, covering the period from April 2009 to September 2009, when the A(H1N1) influenza had peaked in Europe[117]. We have already presented and discussed narratives of past epidemics, based on relevant studies that had been carried out shortly after the outbreaks of FMD, SARS and H5N1. For the purpose of this report, we have selected some newspapers and magazines, reading through articles of this period to identify urban myths and contemporary legends, taking into consideration the wider context in which these had been presented, searching for linguistic properties and so on.

The newspapers are representative of two broad categories, namely 'broadsheets' and 'tabloids', while magazines are also divided into news magazines and scientific magazines. The aim for this distinction is to examine whether there are any recurring patterns in news reporting, and check for any qualitative differences in the narrative structure.

7.2.1 Newspapers

The Guardian

The Guardian is a daily UK newspaper, having a certified average daily circulation of more than 200,000 copies, ranking third behind *The Daily Telegraph* and *The Times*. In addition, the newspaper's online offering is the second most popular British newspaper website behind the *Daily Mail*[118].

The Guardian had covered extensively the 2009 (H1N1) pandemic with regular updates on national and international level. In the first stories, the H1N1 virus was presented as a "*notorious for its ability to mutate and evolve new features that allows is to escape the immune defence systems of its victims."* (The Guardian – *Pandemic flu*, 26 April 2009), while first comparisons and connections started being made with the 1918 influenza pandemic, but mostly from a didactic perspective. For instance, it was mentioned that *"even if the Mexican swine flu does prove to be a so-called Armageddon strain – and, as I write, that is still a very big if – there is every reason to believe we will cope, as long as we learn from and can avoid the mistakes of 1918."* (The Guardian, Swine flu historical lessons, 30 April 2009). Among the main characteristics during the first days of media coverage, had been the attempt from journalists to take a more distant and unbiased perspective as well as a positive attitude towards the virus. However, it was the readers first – through their comments – to bring forward urban myths and conspiracy theories, such as the following:

> *"Vitamin D, krill oil and garlic -- forget the Tamiflu (which has sideffects that could be worse than the actual flu) unless you want Donald Rumsfeld's shares in the patent holder (his company makes 10% on everything Roche sells) to skyrocket. Also, in the 1918 outbreak it was the strep infections that combined with the flu which caused the most fatalities, not the flu itself. And it's about time that people woke up to the fact that current big corporation industrial farming are not only destroying the environment but are a tremendous health hazard to humanity as a whole, not to mention the obvious inhumane treatment of animals."* (The Guardian, Swine flu historical lessons, 30 April 2009)

It is quite interesting to notice how quickly a number of myths and rumours emerged in such a short text, mostly in support of the 'Big Pharma' conspiracy theories.

[117] Wikipedia – 2009 flu pandemic timeline, <http://en.wikipedia.org/wiki/2009_flu_pandemic_timeline>, viewed 17 July 2012.
[118] Wikipedia –The Guardian, <http://en.wikipedia.org/wiki/The_Guardian>, viewed 17 July 2012.

As the journalists start becoming more familiarised with the outbreak and the H1N1 virus as the days passed, the media coverage start also taking a more personal tone, with heavy usage of imagery. This had also been a first attempt to set a dramatic tone on the outbreak, making explicit links to post-apocalyptic films of the recent years.

> *"It was the silence more than anything. No rumble of traffic. No voices in the street. No footsteps. Nothing to betray the existence of 20m people. The cacophony of noise and life that breaks with the dawn missed its cue in Mexico City today. The sun rose higher but it made no difference. The avenues stayed empty. Mexico City resembled a film set for an apocalyptic tale. I Am Legend, perhaps, or 28 Days Later, but there were no zombies, just ordinary people making the best of a grim situation."* (The Guardian, *Mexico five-day shutdown*, 1 May 2009).

In principle, the coverage of the outbreak for The Guardian had been quite objective in presenting the facts through various sources. The outbreak started to be presented more worryingly, both in titles and stories, after there was an announcement by Neil Ferguson, an epidemiologist and disease modeller who sat on the WHO emergency committee for the outbreak, saying that the virus had *"full pandemic potential"* (The Guardian, *Swine flu report pandemic predicted*, 12 May 2009). From that point on, the journey metaphor became more used in the articles, stating that the *"swine flu is spreading more rapidly in Britain than anywhere else in the European Union"* (The Guardian, *Swine flu spreading faster in UK than anywhere else in the European Union*, 29 May 2009) and the H1N1 virus *"was silently spreading around"* (The Guardian, *Swine flu pandemic likely to hit UK in early autumn before vaccine is ready*, 1 June 2009). At this point, we see that the H1N1 virus takes characteristics such as moving 'quickly' and 'silently', creating for people a sense of lack of personal control over the disease. Also notable, the more frequent use of 'pandemic', before this had been officially declared by the WHO.

Figure 7: The Guardian front page and disease metaphor

Upon declaration of the A(H1N1) virus outbreak as a pandemic, more sensational expressions started being used by reporters and journalists, such as the following:

> *"Despite the WHO's hopes, the announcement of a pandemic will* ***almost certainly spark panic*** *in some countries.* ***Fear has already gripped*** *Argentina, where* ***thousands of people worried*** *about* ***swine flu flooded into hospitals*** *this week,* ***bringing to near-collapse the emergency*** *health services in the capital, Buenos Aires."* (The Guardian, WHO declares swine flu pandemic, 11 June 2009)

This is a good example to illustrate what Goltz (1984) had been suggesting with media coverage of foreign disasters. It is apparent the excessive use of rhetorical tropes to describe the level of impact the outbreak of A(H1N1) virus in Argentina, where actually the first reported cases came some days later than those in the UK.

Another interesting finding from researching the newspaper reports of this period, was an article with a tile *Experiment suggests swine flu can transfer from humans to animals: People with flu symptoms warned to*

stay away from pigs (The Guardian, 17 June 2009). Inside article was mentioned that *"governmental officials today warned that anyone with flu symptoms should stay away from pigs as evidence mounted that the present swine flu virus in humans could potentially infect the animals. Vets and scientists have apparently demonstrated in an experiment at a UK research centre that the H1N1 virus responsible for the global pandemic in people readily transfers to the animals.* ***Animal and public health specialists remain cautious about the consequences of their findings, which they describe as 'preliminary', saying firm conclusions cannot be drawn"***. In other words, despite the uncertainty of the findings, these went on to be reported anyway by the newspaper, which in the aftermath can have provided the base narrative for one of the most common myths circulating among people, namely that 'pork products can infect someone with the H1N1 virus'.

Another myth that commonly circulated and has been described earlier in this report, was that of the 'swine flu parties'. The Guardian had detected quite early this tendency from parents to take their children to gatherings where they could catch the swine flu, and aimed at dispelling this myth or controlling this behaviour by reporting that *"senior doctors have warned parents not to take their children to 'swine flu parties' in the hope they catch the disease now and build up immunity."* (The Guardian, *Swine flu: Government set to abandon daily recording of new cases*, 2 July 2009). There have been other areas of contradiction for the newspaper however, as in the case of a rumour where a doctor was claimed to have died by the H1N1 virus, only for this rumour to be refuted by The Guardian exactly the next day, as it was found that doctor died of natural causes (The Guardian, *Doctor who died after contracting swine flu was 'not killed by the virus'*, 14 July 2009).

The fear for contracting the virus (and not the disease itself) was exaggerated at many cases in news reporting from the world. Three months after the outbreak of H1N1 virus, stories like the following kept emerging:

> *"Some church leaders in the UK and abroad have decided to stop offering communion wine during services, fearing that it could cause the virus to spread. In New Zealand, the Roman Catholic church has banned priests from placing communion wafers on the tongues of worshippers, while Chilean authorities last night prompted protests after they suspended a northern religious celebration."* (The Guardian, *Britain's swine flu death toll reaches 30*, 21 July 2009).

These had been examples of the way that cultures and well-established traditions can be affected, constituting a times a challenge for preserving social cohesion and solidarity between the groups. In a slightly different context, as more people died after being infected with the H1N1 virus, the more collective memories of past incidents were triggered, with reminders of dark periods in human history. People would read that the Council of Exeter has available some empty catacombs in an old cemetery in the city, which are 19th century underground burial chambers, with the council spokesman stating that *"they can, however, be safely used for their original purpose and allow us to temporarily store bodies in the remote possibility that the need should arise."* (The Guardian, *Catacombs may be used to store bodies of swine flu victims*, 25 Jule 2009).

By September 2009, the number of people infected from the H1N1 virus was increasing in an almost 'predictable' rate, so the media attention shifted to the vaccines and vaccination strategies put forward by the Government. Almost simultaneously with the release of the first H1N1 vaccines, a number of articles

appeared on the newspaper about the profitable business of pharmaceutical companies and how much they are expected to benefit from the 2009 (H1N1) pandemic. These articles at many times took the form of incubating conspiracy theories which have already been there in the past, but waiting for such an occasion to re-emerge. For instance, six months after the first cases reported positive to the H1N1 virus, stories like the ones below were given to the public:

> *"Having sold hundreds of millions of pounds of anti-flu drugs to the British government, it's clear the swine flu pandemic has been good news for the pharmaceuticals industry. Simon Garfield reveals why Big Pharma is in such rude health."* (The Guardian , *Catch it! Bin it! Profit from it*, 25 October 2009)

> *"GlaxoSmithKline forecasts that sales of swine flu vaccine Pandemrix will hit £1bn in fourth quarter of the year."* (The Guardian, *Swine flu vaccine expected to boost GSK*, 28 October 2009)

Once again, it is clear the role that a newspaper could have played in generating (implicitly or explicitly), sustaining and/or circulating myths, rumours and conspiracy theories about vaccines. These have been exceptions however, with such news usually reported under the 'Business' section in the newspaper, so these may not have attracted the attention of the majority of readers.

Daily Express

The Daily Express is a daily national middle market tabloid newspaper in the United Kingdom. According to the Encyclopaedia Britannica, this newspaper is known for its sensational treatment of news and also for its thorough coverage of international events[119]. Since its founding in 1900, the Daily Express has aggressively appealed to a mass readership, with circulation reaching about one million readers.

Same as in The Guardian, the reports of the Daily Express during the first month of the outbreak revolved around predictions about casualties, drawing connections with the 1918 influenza pandemic which killed around 50 million people worldwide. Among the first elaborate articles of Daily Express had the title *Killer pig flu fear in Britain*, painting this outbreak in relatively dim colours::

> *"Professor Nigel Dimmock of Warwick University said* ***the outbreak could kill 120 million people*** *– two per cent of the world's population – if it covered the globe. That would be* ***far worse than the impact of the Spanish flu pandemic*** *that killed 50 million people in 1918 and which was* ***a forerunner of the current flu strain****, known as A/H1N1. "****It's poised on a knife edge****," said Prof Dimmock. "It could burn itself out or it could get very nasty indeed – only time will tell."* (Daily Express, *Killer pig flu fear in Britain*, 27 April 2009)

From an early stage, it is visible the effort made to use hyperbole and figurative language in order to engage the reader into this story, without really offering anything in the end, but panic. This initial panic could have escalated into fear, as the news are presented in a more dramatic and immediate tone, through making connection of severity of the disease with the surgical masks worn in Mexico:

> *"Fears that the deadly virus had already reached the UK have triggered a surge in sales of surgical masks, seen being worn in Mexico where more than 140 people may have already died*

[119] Encyclopaedia Britannica – Daily Express, <http://www.britannica.com/EBchecked/topic/149859/Daily-Expres>, viewed 19 July 2012.

> *from the virus. Passengers flying into London from Mexico were seen leaving Heathrow still wearing masks they were given while in the country. Sellers of medical equipment reported a big rise in demand for masks since news broke of the potential for an outbreak in Britain."* (Daily Express, Swine flu: Why face masks could be useless, 28 April 2009)

It is also during this period that first personal stories start coming into light, for instance the couple on honeymoon in Mexico who had been named as the *first Britons to contract swine flu*.

In general, the outbreak of the H1N1 virus was not found to be associated with as many metaphors as other infectious disease outbreaks in the past. Among the few 'war' metaphors that were used in Daily Express, had been titles such as *Drugs stockpiled to fight swine flu* (29 April 2009) or *Swine flu on rampage* (30 April 2009). Another common metaphor that we have also seen in The Guardian, was that of the 'tightened grip' of the virus which carried connotations also about fears of economic and business strangulation for some countries:

> *"The swine flu outbreak tightened its grip on the world yesterday as the number of those infected went up."* (Daily Express, *The virus 'is not slowing down'*, 30 April 2009)

The following excerpt is from an article which also attributes the physical characteristic of speed to the virus:

> *"Killer swine flu is on a terrifying rampage across Britain with more cases confirmed yesterday. […] But as the virus began to appear across Britain with frightening speed, Mr Johnson admitted more cases were "inevitable"."* (Daily Express, *Swine flu in rampage*, 30 April 2009)

The 'swine flu parties' also emerged quite early in news reporting for the Daily Express, and although this coverage had the aim to warn parents about the effects of attending such an event, reference was also made to sources other than medical or official ones, such as the mumsnet.com:

> *"Parents have been warned not to take their children to "swine flu parties" in the hope they will catch the disease now and build up immunity. Although no firm evidence has emerged of such events taking place, family website* ***mumsnet.com*** *has witnessed discussions over whether parents should take steps to ensure their children acquire immunity before the main flu season in the winter, when some people expect the virus to be more potent."* (Daily Express, Warning over swine flu parties, 30 June 2009).

As in the case of The Guardian, three months after the first cases of H1N1 there was an appearance of stories and reports which significantly could have affected public perceptions and behaviour. One such report claimed that "*businesses are encouraging staff to* ***stop shaking hands and kissing*** *on the cheek to avoid the* ***costly impact*** *of the flu"* (Daily Express, Why you shouldn't kiss your colleagues, 13 July 2009). In addition, colleagues were being advised to keep a two-metre distance and wipe phones and door handles as part of a new set of measures outlined by a pandemic training company. It was remarkable the associations made between the costly impact of a behaviour which would allow the spread of disease, however this could also be the reason for development of myths around ways a disease spreads.

The debate about vaccines and vaccination was initiated in July 2009, and this is when Daily Express started to report more heavily on the subject. In particular, there was an article reporting a 'furious' row that

erupted over the safety of vaccinating pregnant women against the swine flu. The controversy on this very sensitive issue can be summarised in an excerpt from the story:

> *"As Home Secretary Alan Johnson warned that the virus is **more of a danger to Britain than terrorism**, a Government expert said that expectant mothers are likely to be included in the priority list of those who will get the anti-flu treatment. But birthing experts cast doubt on this by saying that while women expecting a baby are more susceptible to infections, vaccinations are not usually recommended in pregnancy."* (Daily Express, *Alarm over swine flu jabs for mums to be*, 20 July 2009)

More articles followed that put children in the epicentre of attention, and side-effects of vaccination. A story of a general practitioner (described emphatically as 'leading') was presented, saying he was not sure if he would give his own child a flu vaccination (Daily Express, *Leading GP: I'm not sure I'll give my own child flu vaccination*, 26 July 2009). Such are the claims that usually are taken by the anti-vaccination movement, presented in websites and other sources as scientific evidence about risks of the vaccine. Other news related to children that followed, was that children will be flu vaccine guinea pigs (Daily Express, *Children will be flu vaccine guinea pigs*, 14 August 2009), while the debate about autism being associated with swine flu vaccines was reignited at the end of September, on an article with the title *'Autism link' to swine flu jabs*, presented as something completely novel:

> *"Britain's swine flu vaccine contains an additive dropped from children's jabs five years ago over fears it is linked to autism. European drugs regulators gave the go-ahead for Pandemrix to be given to children over six months old and pregnant women. […] But the drug contains the mercury-based compound Thiomersal, which has not been used in childhood vaccines since 2004."* (Daily Express, *'Autism link' to swine flu jabs*, 26 September 2009)

The newspaper dedicated also some articles on the business side of this pandemic, stating that major pharmaceutical companies would largely profit from this. Once again, the linguistic tropes that were used for emphasising the benefits for the pharmaceutical companies from this story, gave more substance to conspiracy theories of the time. Especially the term 'cashes in' that appears on the title of the story, would suggest something that has already been agreed:

> *"As the 31st UK death was announced, it was revealed that GlaxoSmithKline has already secured a Government order for 60 million doses of the vaccine, making a massive £300million."* (Daily Express, *Swine flu vaccine maker 'cashes in'*, 1 August 2009)

Meanwhile, more stories about victims continued to flood the news coverage, as there was a shift for the newspaper from reporting numbers, to reporting and focussing on real-life stories, such as the school-girl who 'battled' swine flu and ended up having severe lung damage, or a young mother-to-be who had survived another accident before she died from the swine. Those stories, along with many others pointed to the inevitability of death, providing readers with an awkward mixture of drama and cynicism.

The Daily Mail

The Daily Mail is a conservative, British daily middle-market tabloid newspaper, and was Britain's first daily newspaper aimed at the newly literate 'lower-middle class' market. The newspaper has an average daily circulation of around 2 million copies, meaning that stories and news reported reach (and possibly) affect a relatively large audience, at least in the UK.

In the aftermath of the 2009 (H1N1) pandemic, which in the end proved to be somewhat exaggerated in estimations about deaths and spread of the virus, the Daily Mail had received much criticism about the dramatic tone that 'dressed' the newspaper's front covers and articles, spreading carelessly fear and panic to the public. In a more recent article, which investigated who was to blame for the swine flu scare, the Daily Mail points to the World Health Organization and 'profit-hungry drug companies spreading fear' (Daily Mail, *The pandemic that never was*, 4 June 2010). It is doubtful however, the extent to which pharmaceutical companies could succeed in communicating 'bad science' and persuade governments of the criticality of the situation in order to sell more antiviral drugs and vaccines. This is where a full circle is made, and it is actually the quality of coverage by the media to put the blame on, with the Daily Mail being just one of the many examples.


Daily Mail
SHE MAY HAVE A NEW LOVE, BUT JANE GORDON CONFESSES ...
Why I (and I suspect many other women) regret divorcing
Medical Chief: 65,000 could die, one in three could be infected and retired GPs are being recruited to fight pandemic
SWINE FLU: WE'RE ALL GOING TO DIE
RIP
Ingrid Tarrant in two-mile police chase

Figure 8: Daily Mail front page

The Daily Mail has many similarities with the Daily Express in the coverage of the H1N1 outbreak, especially presenting stories which were associated with myths. One such story had been the claim that the swine flu pandemic had been caused by an accidental leak from a laboratory.

> *"An investigation into the genetic make-up of flu viruses claims the pandemic may not have occurred, had it not been for the accidental release of the same strain of influenza virus from a research lab in 1977."* (Daily Mail, *Swine flu pandemic caused by accidental leak from laboratory*, 30 June 2009)

The story did not provide any names of scientists in support of those claims, even though is presented as a historical fact. The newspaper also hosted personal stories of people who had been struck from the flu, with symptoms presented rather subjectively, making any useful information to disappear in this subjectivity:

> *"At first my glands swelled slightly and waves of tiredness washed over me. Defiantly, I tried my usual tactic: denial, and went to bed early with a double dose of Lemsip, refusing to cancel dinner plans the following day. 'How naive I was; two hours later I was woken by a fire raging through me. 'It felt like I was buried in flames, burning, my body having been put through a mangle and every muscle and bone bruised and crushed."* (Daily Mail, *What's really like swine flu: Two sufferers tell their stories*, 23 July 2009)

Throughout the coverage of the outbreak by the Daily Mail, information was presented that could give rise to conspiracy theories and myths surrounding vaccination. The most common example would be the profits made by GlaxoSmithKline, who saw its profits soaring to 23% on swine flu fears (Daily Mail, *Glaxo profits 23 per cent on swine flu fears*, 28 October 2009), while another one would be for parents taking their children to 'swine flu parties', where it had been suggested that "children would be better of trying to catch it now so that if a more serious strain strikes during the autumn they will have natural immunity", but highlighting the risk of such an approach (Daily Mail, *Hospitals overflow with swine flu victims*, 25 July 2009).

Another indication that demonstrates that Daily Mail tends to cultivate myths and conspiracy theories for the public, was an article which discussed the mutation of the H1N1 as part of a mix of prophecies.

> *"Users of the alien-earth.org website combined Nostrodamus, the Book of Revelation and the Mayan prophecies with fears about the Cern Large Hadron Collider in Geneva in their gloomy predictions. 'Note that 999 is 666 upside down,' wrote one. 'Did Nostrodamus warn us from 400 years ago about creating a Doomsday Machine with the Cern LHC?' On www.revelation13.net, numerologists were concerned about swine flu. 'The world population officially reaches 6.8billion near November 2009, and Revelation 6:8 is about the fourth horseman, Death, so will death ride then?* ***Could this be a mutation in swine flu H1N1 making it a deadly worldwide plague****?"* (Daily Mail, *World end today*, 9 September 2009)

The general view is that Daily Mail (as well as Daily Express and The Guardian) reported H1N1 outbreak as a national emergency, however there have been qualitative differences in the presentation of information, with the Daily Mail often creating confusion by presenting contradictory claims through personal stories and official sources.

7.2.2 News Magazines

According to the Wikipedia, a news magazine "*is a typed, printed and published piece of paper, usually weekly, featuring articles or segments on current events. News magazines generally go more in-depth into stories than newspapers or television programmes, trying to give the reader an understanding of the context surrounding important events, rather than just facts*"[120]. This is a very important feature, as we have seen already that newspapers can easily diffuse, as well as generate, urban myths and conspiracy theories, in an effort to attract more readers, without balancing the consequences of their reports. In this section, we present the way that the 2009 (H1N1) pandemic was handled by a news magazines – *The Economist*, *Newsweek and Der Spiegel* – and try to identify any qualitative differences in the narrative and descriptions of the virus.

The Economist

In the first extensive report of The Economist on the outbreak of the H1N1 virus, it is clear that efforts are made to take a balanced and critical approach towards the disease. The story is presented to the reader more from a scientific perspective, rather than an emotional point of view. Metaphors still are being used in this context (e.g. the A/H1N1 seen as the 'culprit'), however they do not dominate the text. Information

[120] Wikipedia – News magazine, <http://en.wikipedia.org/wiki/News_magazine>, viewed 20 July 2012.

presented at this stage, are more reassuring (even optimistic) than those presented from the newspapers, aimed also in the direction of debunking some myths. For instance, the descriptions are as follows[121]:

> *"In response, many countries are becoming more vigilant and increasing stocks of antiviral medicines. Some are making noises about banning North American pork, despite assurances from the WHO that eating cooked pork* ***does not transmit swine flu****."*

> *"It is* ***too early to be sure*** *that A/H1N1 is a dangerous pandemic in the making. Until all of the Mexican cases are properly examined, authorities cannot know whether patients suffering from flu-like symptoms actually got this new bug or merely some older, less worrisome one. Without that information, it is also impossible to determine the new disease's virulence, fatality rates and so on."*

> *"Also encouraging is that all of the cases confirmed outside Mexico seem to be mild ones."*

> *"The world is much better prepared today to handle a pandemic than it was just a few years ago."*

Even in the case of The Economist, there have been also references to the 1918 influenza pandemic, but once again, not for evoking fear of imminent deaths but rather to reassure readers that situation is not as critical yet[122]:

> *"Even if the new virus is as virulent as the one that caused Spanish flu, a reason for hoping it will not cause so many deaths is that by good chance it is susceptible to certain antiviral drugs, including Tamiflu."*

The same article goes as far to suggest also what should be done next, emphasising how well prepared the world is for a flu pandemic:

> *"So how should governments prepare? Thankfully, prodding by the WHO and lessons from SARS and avian flu have caused governments to strengthen their disease-surveillance systems, improve communications between their health ministries and co-ordinate their stockpiling of drugs. [...]Besides national and global stockpiles of antiviral drugs, medical equipment and financial resources, many countries and even businesses have developed plans for the outbreak of a pandemic."*

Another Economist article that was published shortly after the initial cases of H1N1 reported by the Centers for Disease Control and Prevention (CDC) in the US, makes an analytical approach on the process and rationale behind the manufacturing of flu vaccines by describing the different parties involved and, putting things into context for the readers[123].

> *"To help the vaccine manufacturers plan, the WHO issues guidelines every six months listing the three strains of seasonal flu that appear to pose the biggest threat during the relevant hemisphere's approaching winter. The firms then prepare their genetic cocktails and develop them inside live chicken eggs in sterile conditions. The resulting "trivalent" vaccine provokes the*

[121] The Economist, *An unwelcome Mexican wave*, 28 April 2009, available from <http://www.economist.com/node/13565479>.
[122] The Economist, *An imminent pandemic*, 30 April 2009, available from <http://www.economist.com/node/13578842>
[123] The Economist, *Preparing for the worst*, 7 May 2009, available from <http://www.economist.com/node/13609361?zid=314&ah=607477d0cfcfc0adb6dd0ff57bb8e5c9>

> *patient's immune system into producing antibodies, and that primes it for an attack by the worrying strains of flu."*

This level of transparency in the descriptions, does not leave much room for myths or conspiracy theories to incubate within the story, while the reader has the opportunity to search further on those issues to form his/her opinion based on scientific evidence, and not on reports aiming to provoke an emotional response. In fact, this has been the subject of another article that was presented by The Economist, in the midst of the outbreak, when the H1N1 (2009) pandemic had been spread in most regions around the world. While the British newspapers (especially the tabloids) started making direct accusations about the capacity of the government and the National Healthcare System to control the outbreak, giving a sense of hopelessness and despair to the public, the article by The Economist sees things under a different light, suggesting that UK has been stuck hard from the H1N1 virus as a result of Britons' travelling patterns[124]:

> *"Is there any scientific reason to think that Britain's people or health-care system makes it especially vulnerable to this global pandemic? The short answer is no. Britons are not genetically more vulnerable to the virus than other people. And their public-health system is, by international standards, very good. Globalisation and centralisation, however, have quite a lot to answer for. Britain has strong ties through trade, investment and tourism with North America, where the pandemic probably originated. Many Britons were in hot spots there during the crucial weeks when swine flu was gathering pace unnoticed."*

The same article went on to suggest that the apparently large number of reported cases in Britain may stem in part from a very good system of surveillance. This would be another example of how things could be presented and perceived differently, suppressing at the same time public fears and anxieties about the disease.

There are two differences that appear as relevant between newspapers and news magazines. First, it is the approach adopted by the two mediums of communication for presenting facts and latest news about the outbreak. In the case of newspapers, stories rarely go in-depth to present alternative positions about the same issue, whether this is about spread of the disease or vaccination. Second, it is the level of desired engagement of the public through different modes of persuasion. The rhetoric used by the newspapers is closer to *pathos*, making an appeal to the emotion, whereas in the case of news magazines, there are more efforts to make an appeal to reason - *logos*. In addition, specific news magazines and newspapers are widely recognised as credible sources - *ethos*, such as The Guardian and The Economist, having a greater impact on influencing readers' perceptions, accepting information presented as generally truthful.

Newsweek

The Newsweek is another news magazine which is another good example of journalism taking a critical stance towards the H1N1 outbreak. In one of Newsweek's articles about the H1N1 outbreak (19 August 2009), the magazine aims to give some perspective on the term of 'pandemic' and the flu virus, also by drawing comparisons with other types of lethal diseases, aiming to rationalise and reassure people about the threat posed by the disease. Even the title of the article, *You (probably) won't die from swine flu*, entails

[124] The Economist, *Don't panic - yet*, 16 July 2009, available from <http://www.economist.com/node/14062675?zid=314&ah=607477d0cfcfc0adb6dd0ff57bb8e5c9>

a sense of irony about the panic, fear and hype revolving around the disease. The following excerpt is an indication of the type of narrative used for introducing the H1N1 outbreak to the public[125]:

> *"A little perspective shows that H1N1 isn't as scary as it sounds. Pandemic, with all its seemingly lethal connotations, simply means geographically widespread. The common cold, for instance, can always be classified as a pandemic."*
>
> *"Furthermore, the swine flu appears to be behaving like a regular seasonal flu, with mild symptoms and **many full recoveries**."*

Once again, we can observe the reassuring tone in the words of this article, which presents also the other side of the coin, highlighting the fact that there have been many full recoveries.

In another article, the Newsweek makes an extensive argument about the impact of washing hands for keeping away the H1N1 virus, in what seems to be an effort to confront a myth suggesting that someone can keep safe from the virus, simply by washing hands on a regular basis. The aim of this article is not so much about debunking this myth, but rather to notify readers that there is still much more that one should do to protect from getting the flu. The argument is built by drawing from scientific evidence and testimonials of professionals, which gives considerable credibility to the claims made by the article, which concludes that best protection against the flu would be to receive vaccination[126]:

> *"Nevertheless, hand-washing is still your best defence against getting sick generally this fall—colds and other respiratory diseases are no fun, even if they don't sound as scary as swine flu. For that and other flu viruses, don't seek solutions at the sink: your best chance of avoiding H1N1 this fall is to get the vaccine once it becomes available."*

The Newsweek magazine also went a step further during the 2009 (H1N1) pandemic, to report existing rumours, myths and conspiracy theories linked to the outbreak. This article provides quite a convincing account and reasons why those rumours and myths around vaccines ought to be discredited from the public. There are frequent references made to scientific studies as well as information retrieved from national and international competent authorities about issues on public health. This comprehensive article leaves little room for disagreement as the information are presented from different viewpoints, as the 'truths' contained within those myths and rumours, are generally admitted by the author of the article, who uses these truths as a compass to understand better why such stories might have been successful in penetrating to the public[127]:

> *"The e-rumors claim generally that the vaccine is dangerous; one even claims it's a government "depopulation" plot. We'll say it straight out: There are some real risks to the H1N1 vaccine. There's nothing shady or secretive about them, though – they're exactly the same as the risks of the seasonal flu vaccines."*

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[125] Newsweek – *You (probably) won't die from swine flu: Putting H1N1 into perspective,* 19 August 2009, available from < http://www.thedailybeast.com/newsweek/blogs/the-human-condition/2009/08/19/you-probably-won-t-die-from-swine-flu-putting-h1n1-in-perspective.html>

[126] Newsweek – *Hand-washing won't stop H1N1*, 14 September 2009, available from < http://www.thedailybeast.com/newsweek/2009/09/14/hand-washing-won-t-stop-h1n1.html>

[127] Newsweek – *Innoculation misinformation*, 18 October 2009, available from < http://www.thedailybeast.com/newsweek/2009/10/18/innoculation-misinformation.html>

> *"A common theme in the scare stories is that the vaccine contains harmful ingredients. The "tainted vaccine" rumors aren't new to swine flu vaccine – they're old suspicions about vaccinations writ large, pinned to the most recent public health concern. Most of the problems posited with the H1N1 vaccine originated with other vaccines and date back as much as 30 years."*

Der Spiegel

The safety of the H1N1 vaccines has been a key theme for the *Der Spiegel* magazine. In an article that was published during the outbreak, entitled *How safe is the swine flu vaccine?*[128]. This article was drawing the attention of the public on various newspapers headlines which evoked fear about the outbreak, and made the argument whether in the end the H1N1 vaccine should be considered safe. The information presented in this case, depicted a reality where the national and European authorities were eager to present a rapid response to this new threat for secure safety of their citizens, while in fact, according to Der Spiegel, *this a large-scale experiment conducted on the German population*:

> *"To avoid being accused of doing nothing, government health officials are preparing a vaccination campaign unprecedented in scope. Last Friday, the health ministers of Germany's states ordered 50 million doses of the vaccine from pharmaceutical giant GlaxoSmithKline (GSK). [...]In addition, the vaccine serums have passed through a uniquely accelerated approval process at the European Medicines Agency (EMEA) in London."*

The Der Spiegel magazine follows the same strategy as the tabloids we have seen earlier, taking a one-sided approach on the issue, clearly supporting the idea that the vaccination programme cannot be justified, as is only based on the assumption that a second wave would follow, more serious than the first. A personal account of a famous actor was also presented, in support of the claims that the outbreak had been overhyped:

> *"'At first I thought to myself: Will I die?' said Rupert Grint, known for his portrayal of the character Ron Weasley in the "Harry Potter" films, after contracting H1N1. 'But all I had was a sore throat.'"*

Few remarks about the print media

It is evident from the examples provided above, that daily newspapers and news magazines have different approaches in how they choose to inform their audience, or public in general. Both are valuable sources of information, with newspapers providing daily updates on issues as crucial as the outbreak of an infectious disease, while news magazines make critical evaluations and assessments of debates to clarify issues that create ambiguities for the general public.

It needs to become more clearly defined for the print media however, the responsibilities and role in reporting and communicating messages for the public. There is a thin line that divides responsible communication from generation of fear and feelings of anxiety in the general population, especially in the case where information could fuel rumours, myths and conspiracy theories around the disease, which in turn encourage behavioural responses which are not compliant with the preventive measures put forward by the national competent authorities. It is crucial to find a way where the media freedom of expression

[128] Der Spiegel – *How safe is the swine flu vaccine?,* 3 August 2009, available from < http://www.spiegel.de/international/germany/the-injection-business-how-safe-is-the-swine-flu-vaccine-a-640853.html>

does not become a tool (or an excuse) for misleading the public on such important matters. In essence, the media reporting is generally more attractive, as the type of narrative used is certainly more engaging for people, rather than scientific reports. However, the core idea in reporting issues related to infectious disease outbreak, is to communicate accurate information to the public, not seeking how the story can become better attractive – within analogies, the same distinction is made between films which are advertised as 'based on a true story', and documentaries, which actually present that true story.

In the end, it is a matter for both the scientific community and the media to assume the responsibility and accountability of their actions, with respect to the type of information diffused to the public, as it has been demonstrated that media can make criticisms and be sceptical about important matters, but still there could be some space for people to form own opinions and shape perceptions, without being 'directed' to adopt the position made by a newspaper.

7.2.3 The 'scepticism' press

As there is an increasing need for people to get alternative perspectives about scientific-related issues, and generally to develop some 'pseudo-scientific' expertise on health-related topics, challenging conventional knowledge, a number of magazines have emerged to address those needs for the audience. An extreme example of such a case would be the magazine *What Doctors Don't Tell You*.

What Doctors Don't Tell You

This magazine is described as a resource of health advise with articles on how to beat asthma, arthritis, cancer, depression and other chronic conditions. During the time of the 2009 (H1N1) pandemic, there had been an article written about 'medics who refused to take new swine flu vaccine', presenting unsubstantiated data and statistics claiming that more than half of doctors and a third of nurses in the UK, would refuse to take the vaccine[129]. This was a piece of information that would be difficult to challenge however, as only reader and would be rather easy to accept as truthful. A more explicit reference of how rumours and conspiracy theories become cultivated in human consciousness, was the story about swine flu which may have started in laboratory, according to an expert's view, which as we have seen earlier in this report is another strategy commonly used by the anti-vaccine movement, for enhanced credibility[130]:

> *"The man who helped develop the Tamiflu flu anti-viral drug **believes** the swine flu epidemic has been caused by human error. Adrian Gibbs says the H1N1 virus **may have** been man-made and was passed to humans after a handling mistake at a laboratory. Gibbs, who has studied germ evolution for 40 years, is to publish a paper about his theory, which he developed after studying the swine flu virus's genetic blueprint."*

We could observe that the narrative follows the principles of an urban myth in structure and story-telling, as vital information are missing, while there is some usage of hypothetical speech, suggesting that those statements could be open to debate.

Other common strategies used from the What Doctors Don't Tell You magazine, to effectively build the rationale behind the anti-vaccination movements, were presentation of stories (with most of them debunked as urban myths) such as:

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[129] What Doctors Don't Tell You – *Medics refuse to take new swine flu vaccine,* 26 August 2009, available from <http://www.wddty.com/medics-refuse-to-take-new-swine-flu-vaccine.html>

[130] What Doctors Don't Tell You – *Swine flu may have started in the laboratory*, expert says, 20 May 2009, available from <http://www.wddty.com/swine-flu-may-have-started-in-laboratory-expert-says.html>

'Dire warnings about swine flu were all wrong'[131]

'Swine flu more likely in people who have the seasonal flu jab'[132]

'Drug companies 'bullied' governments into buying swine flu drugs'[133]

'Major swine flu vaccine causes sleeping disorder"[134]

It is interesting to note the fact that many of the stories related to swine flu vaccines and other topics related to the 2009 (H1N1) pandemic, continue to circulate although the pandemic has been declared as over, almost two years ago. This is an indication of the persistence that characterises the anti-vaccination movement, which manages to keep those issues for a long time ahead, so that scepticism for the general public is well maintained.

7.3 Online communication tools

The use of online communication tools has completely changed how people access medical and health information. The ability to disseminate and collect information quickly and with relative ease is one of the great benefits of the internet, as is the ability for people who previously may never have been aware of each other, to connect, discuss and share viewpoints and experiences. However, while the ability to share and access such information can be beneficial, it also poses a number of dangers. While the previous section focussed on the way information is presented through the press media as one-way mode of communication, we will now discuss the role of online communication tools (blogs, forums, comment threads etc) in the popular discourse, touching on the potential benefits and draw backs they offer, before discussing each form individually.

The term 'Web 2.0' is a catch all term for the development of newer elements of the internet that encourage user participation and collaboration. It's embodied in the growth of networks such as Facebook, Twitter, YouTube and the innumerable blogs that now populate the internet. Web 2.0 has changed how information is transmitted. The traditional model, where it flowed from a small number of authoritative sources, has been superseded by interconnected networks of groups and individuals sharing ideas, thoughts and arguments. This model has clear benefits, the most immediate of which is that all parties can now debate and engage, enabling a collaborative learning process. In the context of issues such as vaccinations and pandemics, Web 2.0 and online communication tools allow people to communicate directly, in a wide variety of ways, theoretically providing a much more efficient channel of information than ever before. Ideally this should mean that in times of emergency, such as in when the risk of a pandemic is high, health experts and officials could spread the message and provide advice, quickly and efficiently, to a very large number of people.

However that is almost never the case, particularly with regard to issues such as vaccination drives or outbreaks of disease. In this way, Web 2.0's greatest strength is also its greatest weakness. There is *so*

[131] What Doctors Don't Tell You – *Dire warnings about swine flu were all wrong* , 09 December 2009, available from <http://www.wddty.com/dire-warnings-about-swine-flu-were-all-wrong.html>

[132] What Doctors Don't Tell you – *Swine flu more likely in people who have the seasonal flu jab*, 14 April 2010, available from <http://www.wddty.com/swine-flu-more-likely-in-people-who-have-the-seasonal-flu-jab.html>

[133] What Doctors Don't Tell You - *Drug companies 'bullied' governments into buying swine flu drugs*, 12 May 2010, available from <http://www.wddty.com/drug-companies-bullied-governments-into-buying-swine-flu-drugs.html>

[134] What Doctors Don't Tell You – *Major swine flu vaccine causes sleeping disorder*, 26 July 2011, available from <http://www.wddty.com/major-swine-flu-vaccine-causes-sleeping-disorder.html>

much information available that, within a few minutes of searching it is very easy to get swamped in claims, counter claims and contradictory statistics. Having varying arguments should be a boon, but this is only true if all sources have been verified. It is very easy to sound authoritative if no credentials are required to support claims. As such, the sheer volume of information can become a quagmire of heavily biased or factually inaccurate information that can and do confuse and unnerve the casual observer or lay user.

Below are discussed the key online tools for conversation and debate online. Although there are many ways to disseminate information on the internet, we have chosen to focus on the methods that allow for information and argument to flow more than one way, the locations that allow for a back and forth with arguments and points of view.

7.3.1 Message Boards/ Forums

Message boards can take many forms, most notably as website forums. They can either augment a website, allowing a place for readers to congregate and discuss issues or topics, or they can be the entire focus of the site, where content is generated almost entirely by the users who frequent it. Those sites for whom the sole focus is community engagement and user generated content tend to have a much broader focus, sometimes subdividing into common interest areas. Of these, the largest is Reddit.com, which covers almost every conceivable topic and, in the US alone, boasts over 14million visits a month.[135]. Special interest groups are a major resource for an individual seeking answers or advice from peers.

Examples of message boards and forums include:

- Reddit: www.reddit.com
- HealthBoards: http://www.healthboards.com/boards/vaccination-immunization/
- Mothering.com: http://www.mothering.com/community/f/47/vaccinations

In the **'HealthBoards'** forum, there are various entries about the side-effects of vaccines. One of the topics (or threads) that found to have the most entries was the discussion on 'How are vaccines bad for you'[136]. The opening entry of this thread states:

> *"They have **horrible substances** in them like mercury, which is one of the **most toxic chemicals on the planet**. It **causes diseases** such as cancer, SIDS, autism, many more, and the worst being death. And in Countries all around the world are actually banning vaccines because of all the dangers. **My stepdad is a chiropractor** and **he is an expert** on how to keep your body healthy. Vaccines are NOT the way to go!!!!!!! Please educate yourselves people!!!!!!! then you will notice how oblivious a lot of people are to all the dangers of vaccines"*

There are much information about the rhetorical devices used from someone to persuade others, of the claims s/he makes. First, there is a tendency to put emphasis on a claim, by addition of adjectives such as 'horrible' or 'most toxic', framing vaccines already in a negative context. In addition, there are claims about a person in the family being a healthcare professional, which somehow is believed to add validity in this claim. This entry makes an appeal to emotion for the reader, by use of vivid language (including the exclamation marks) to induce those emotions. Another entry in the same thread, also inclined towads the anti-vaccination movement, makes an effort to appeal to reason by stating the following:

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[135] More information: <http://www.quantcast.com/reddit.com>, viewed 28 July 2012.

[136] More information: <http://www.healthboards.com/boards/vaccination-immunization/823591-how-vaccines-bad-you.html>, viewed 25 July 2012.

> *"It's **best to trust** your immune system. Limit sugars, get adequate rest, exercise get plenty of sunshine (vitamin d). Don't bog your body down with synthetic drugs and vitamins. Eat whole foods (organic if you can afford) and make sure to eat healthy fats for your nervous system. It's better to **acquire a virus naturally** (through the nose and mouth) and have your immune system fight it off **instead of having some genetically mutated virus injected into your system**. It can for some ppl cause automimmune responses (MS, Lupus, Arthritis, Seizures, etc.)"*

There is a somewhat more controlled approach in this case, whereby is encouraged an organic lifestyle, which excludes the 'injection of a genetically mutated virus' into the system. Such as case is characteristic of people who try to persuade others by offering an alternative path, creating a negative image about immunisation in the same time.

It is interesting to note that in the case of message boards and forums, there are descriptions of members as 'new', 'junior', 'senior' or 'veterans', which may have an impact when appealing for ethos. For instance, a reader might be more inclined to follow the advice of a 'veteran' member, and equally discard the opinion of a 'new' member, same as it would be done in real communities.

Another popular debate on the 'HealthBoards' forum had been on the topic 'Should I get the flu shot?'. This discussion had 21 entries, including users who were both pro and anti-vaccinists. The overall trend in such debates is to have people who support vaccination, taking excerpts and specific claims posted by anti-vaccinists, responding with some evidence or supported claims in each case. Such an example is shown in the following screenshot from a thread (Figure 9). The opposite of course also happens, but those in support of the anti-vaccination movement usually rephrase their initial claim, employing more powerful rhetorical tropes, such as metaphors, irony, repetitions accompanied with usage of bold or capital letters to attract more attention.

Figure 9: Screenshot from HealthBoards discussion on 'Should I get the flu shot?'

The other case we shall examine, is the **'Mothering.com'** forum, which is an open forum devoted to mothers, with the aim to answer questions ranging from pregnancy, to health and education. The wide spectrum of topics included in this forum, also addresses various issues surrounding vaccinations. This is of particular importance, as pregnant women are among the high-risk groups in case of pandemics and is crucial to understand that such forums could be the primary source of information for many.

As the screenshot in Figure 10 demonstrates, there is a special section in the forum that is dedicated to vaccinations, suggesting this is a rather important topic that mothers discuss.

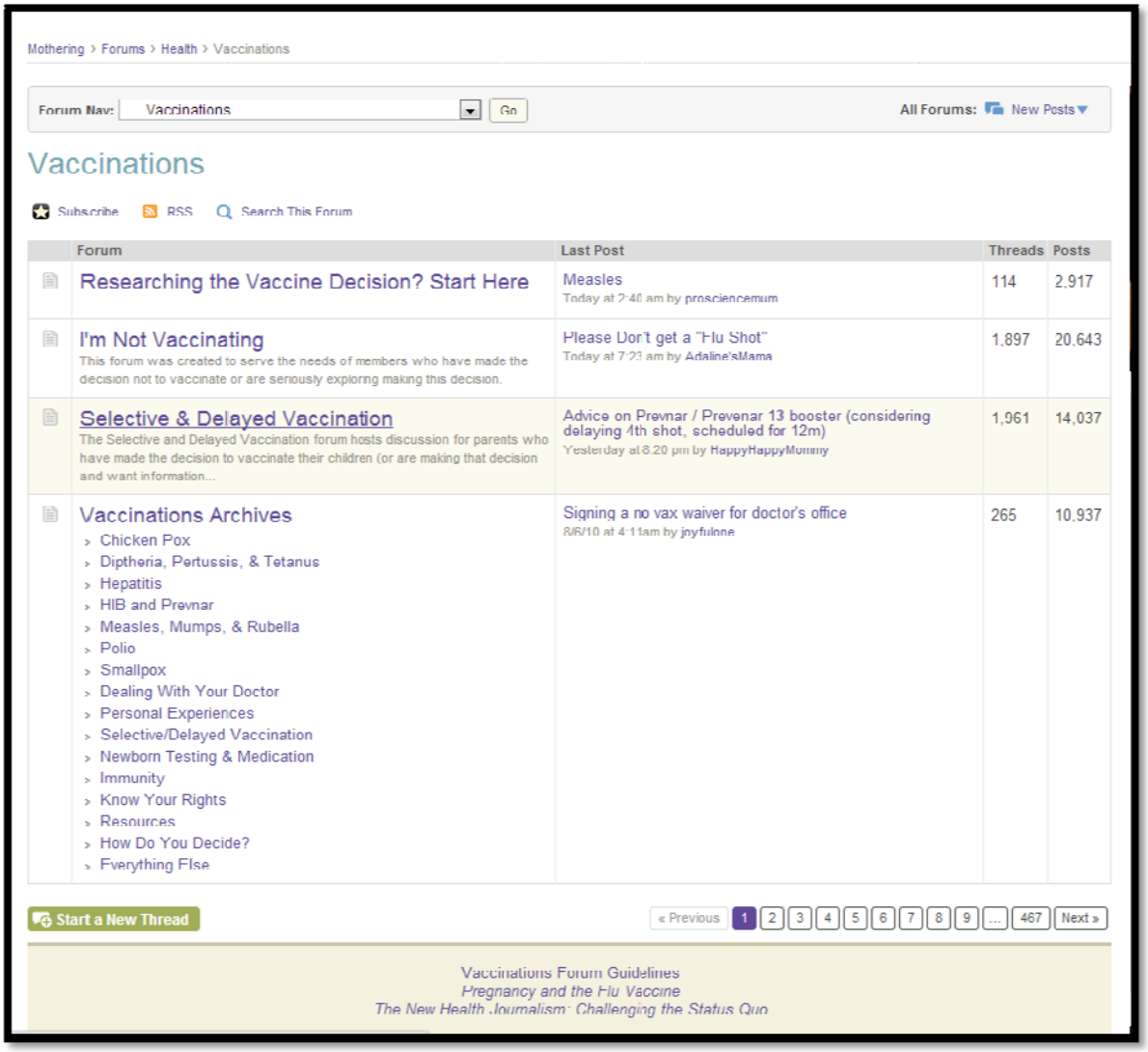

Figure 10: Screenshot from Mothering.com forum on Vaccinations

In this introductory page on Vaccinations, there is a specific category / forum, called 'I'm Not Vaccinating', which explicitly mentions that is has been *created to serve the needs of members who have made the decision not to vaccinate or are seriously exploring this decision*. As indicated in Figure 10, this forum hosts 1.897 threads, including a total of 20.643 posts. The discussion on this forum revolve around all issues about vaccines, also suggesting readings and videos (most including interviews by Dr Tenpenny), either in support of alternative medicine and practices to fight the diseases, or presenting conspiracy theories linked with side-effects of vaccines.

Most importantly, this is a strong and well-established community of women that share concerns and worries, seeking for consolation and advice from others that have had a similar type of experience in the past. This takes us back to the first sections of the report, when was discussed the significance for people to be able to share their worries and get some reassurance. In addition, these types of forums offer for the user a refuge when seeking to support further some beliefs on the side-effects on vaccination; so, in essence users are not only after finding out more about vaccines, but also to confirm their own beliefs on the subject.

A key characteristic in forums, is that posts cannot be edited once the story is posted online, so all the personal narratives are pieces of one puzzle which form a larger narrative under a common topic.

Therefore, narratives presented in forums are greatly affected by the nature of conversation that takes place under a topic, which means that it is mostly the attitudes and beliefs of people that become manifested, facilitating the diffusion of myths and rumours that circulate around a topic.

7.3.2 Social Media and Networking Sites

Over the course of the last decade, social networks have exploded in both popularity and form. It is no exaggeration to say that the most popular networks, such as Facebook, Twitter and YouTube, have built industries around themselves, altering how people communicate and stay in touch, with an emphasis on building a network of friends or contacts through which life's event's from the fundamental to the trivial, can be shared. Social networks allow individuals to meet others of like mind, form groups or arrange tasks. There are also interest specific social networks, ranging from networks for people of certain ages, suffering with particular ailments or holding specific interests. Here members enter with an automatic commonality and relationships based off their shared interest or position. Social networks are useful in gauging attitudes from specific groups regarding issues such as vaccination or pandemics. However, as like minds tend to clump together, it's unlikely to find much debate, rather any dissenting opinions are quickly drowned out.

Examples of social networking sites include:

- Facebook: www.facebook.com
- YouTube: www.youtube.com
- Twitter: www.twitter.com

Kata (2012) highlights the important role and influence of the social media in people's lives. Some of the data that are presented with reference to usage of specific social media in order to retrieve information about immunisation are as follows: "*An analysis of YouTube immunization videos found that 32% opposed vaccination, and that these had higher ratings and more views than pro-vaccine videos; 45% of negative videos conveyed information contradicting reference standards. A YouTube analysis specific to HPV immunization found that 25.3% of videos portrayed vaccination negatively. An analysis of MySpace blogs on HPV immunization found that 43% were negative; these blogs referenced vaccine-critical organizations and disseminated inaccurate data. A study of Canadian Internet users tracked the sharing of influenza vaccine information on social media networks such as Facebook, Twitter, YouTube, and Digg. Of the top search results during the study period, each which had been shared and viewed thousands of times, 60% contained anti vaccination sentiments*." (Kata, 2012; p. 3779).

With reference to **Facebook**, there are numerous groups that have been created in response to the most recent pandemic or vaccination, so would be useful to list some of these groups:

- *Anti-vaccine movement:* http://www.facebook.com/antivaccinemovement
- *Myths of the anti-vaccine movement:* http://www.facebook.com/MOAVM
- *Swine pandemic:* http://www.facebook.com/Swine.Pandemic
- *The swine flu page:* http://www.facebook.com/The.Swine.Flu.Page
- *Not having swine flu:* http://www.facebook.com/pages/Not-having-swine-flu/113625841144
- *Fight back H1N1:* http://www.facebook.com/pages/Fight-Back-H1N1/142119465849
- *Flu 2009:* http://www.facebook.com/Flu09

Twitter can be identified as the modern form for spreading rumours, which at core are short narratives but can have a great impact on people perceptions and behaviour, based on the type of information circulated.

It is apparent that this mode of communication allows rapid exchange of information, and can be a powerful tool in the hands of people having a great number of followers. According to a study carried out by Chew and Eysenbach (2010), who analysed the content of 'tweets' during the 2009 (H1N1) pandemic, they identified the *"potential and feasibility of using social media to conduct 'infodemiology' studies for public health. H1N1 pandemic-related tweets on Twitter were primarily used to disseminate information from credible sources to the public, but were also a rich source of opinions and experiences"* (Chew & Eyesnback, 2010).

From the wide range of social media available, perhaps the most influential application would be the **YouTube**, which opens up for the user endless possibilities to learn about other people's stories and opinions on the subject of interest. There are few special features in YouTube that makes it distinct from other forms of social media. First, it presents stories and personal accounts in audiovisual format, and this direct method of communication allows for messages to have a greater impact in the consciousness of a person. Second, each video provides links to various other videos of relevant theme, which can be attractive for the user to follow, with the of becoming more well-informed about a subject. Finally, there is a possibility to read, and contribute by writing, comments of other users which could have an effect on perceptions about the topic under investigation.

There is an innumerable amount of videos that exist on YouTube which explicitly or implicitly presents urban myths and conspiracy theories surrounding epidemics and vaccination. We have already presented some information in earlier sections about Alex Jones, who is mostly occupied with unveiling various conspiracy theories concerning the government. Such a case would be the 'H1N1 Swine Flu Conspiracy' video which is presented in YouTube[137]. Based on the video statistics, this has been viewed by more than 125.000 people, with the tendency to increase in the future. Also, there are more than 700 comments on the video, some of which are characteristic examples of diffusing urban myths and conspiracy theories to the public:

> *"Don't know about you guys. But **my best mate told me** (heard it from a friend in the government) that there would be a **massive** flu type epidemic in about 4-6 weeks as they had a **massive** stock pile of a vaccine that would expire in a couple of years and had to get rid of it. That was about a month before i heard or saw anything about swine flu on the T.V. or radio for the first time. Just a Thought."*

In this comment, is used the Friend Of A Friend tactic as a device for persuasion of others, which commonly appears in contemporary legends and rumours, as we have in previous section of the report. It is also characteristic of this narrative the repetition of word 'massive', which aims at emphasising the criticality of the situation and create a dramatic effect.

Another popular video that has been uploaded on YouTube, shows Dr Len Horowitz on a video entitled 'Swine Flu Conspiracy Warning'[138], claiming that responsible for the 2009 (H1N1) pandemic are the pharmaceutical companies in collaboration with international organisations and agencies, such as WHO, EMA etc. The following comment appears among the first in response to the video:

> *"**They** don't just want people dead, they want to create as much **FEAR** and panic as they possible can because the dark powers that control these sick people get off on **fear** and love torment people first, and **fear** is torment."*

[137] Video available from: <http://www.youtube.com/watch?v=UG8xuhj_dEM&feature=related>
[138] Video available from: <http://www.youtube.com/watch?v=5mnn3vMnN94&feature=relmfu>

This is another example where figures of repetition (i.e. exegesis, anadiplosis) make their appearance in this short narrative, with key word being 'fear' – the first time appearing in capital letters. Another common characteristic of urban myths and conspiracy theories is the reference made to some people, who are introduced as 'they', without ever being specified who these people are.

In another YouTube video presents an interview made with Dr Rauni Kilde, former Health Minister of Finland, talking about the 'Swine Flu Conspiracy'[139]. This video has received more than 1 million views, and is still quite popular considering that comments are still posted online. This is another example of the methods of persuasion used by the anti-vaccination movement, aiming for enhanced veracity of the story as a result of the speaker's profile – an appeal to ethos, as we have seen in the discussion about rhetorical modes employed by orators.

Of course, it is not always that conspiracy theories are fuelled from a YouTube video that shows explicitly someone talking about effects of a vaccine. There are also cases of news reporting from TV, where journalists or other actors appear to be strongly pro-vaccine, however in their effort to persuade others to vaccinate, the rhetorical appeal to reason is substituted with the appeal to emotion. Such was the case of Dr. Nancy Snyderman, NBC News Chief Medical Editor, who said the following in a live TV programme: "*Listen to the government agencies, these guys are telling the truth. There is no conspiracy here folks,* ***just get your damn vaccine****!*". This type of narrative, involuntarily might have provided the anti-vaccination movement with fresh arguments, since this patronising behaviour and level of eagerness to support a governmental decision is commonly interpreted by the public as suspicious.

7.3.3 Internet

The internet hosts an infinite number of websites potentially relevant to our research about urban myths and the narrative in the disease outbreak and vaccination discourse. We shall focus on website that increases in popularity with time, mostly by promoting conspiracy theories about modern medicine, geared to gain sympathy for alternative medicine, NaturalNews.com.

NaturalNews.com

This is a website describing itself as *"a non-profit collection of public education websites covering topics that empower individuals to make positive changes in their health, environmental sensitivity, consumer choices and informed scepticism".* Natural News is concerned, not only with vaccines, but anything it deems to be connected with 'Big Pharma'. Natural News is one of the most popular websites on the internet that supports alternative medicine. On the subject of vaccination, NaturalNews.com is openly hostile, with numerous articles citing the dangers associated with vaccines and claiming to prove their ineffectiveness, as well as fundamental issues in how they are designed to work.

A good indication of the website's penetration to the public, is that when searching for 'bird flu vaccine risk' in Google, the first link listed was to NaturalNews.com. By clicking on the link, this led to a list of stories hosted on the site, all of which were anti-vaccine. They also strongly promote the narrative that people are 'waking up' to the dangers of vaccines and that powerful institutions such as national governments and pharmaceutical companies are attempting to force drugs and vaccines on a population that is increasingly unwilling to accept vaccinations. The majority of comments featured under the stories are supportive of the views expressed in NaturalNews.com, though there are some that try to take a more objective stance.

[139] Video available from: <http://www.youtube.com/watch?v=TndwYi_QTiw&feature=related>

We searched the website under the 'Flu vaccine news, articles and information' (http://www.naturalnews.com/flu_vaccine.html) in order to get a clearer idea on the narrative used, and the type of urban myths circulated.

Case #1 – Vaccine bombshell: Baby monkeys given standard doses of popular vaccines develop autism symptoms.

This was the most popular article on the website, during the time of the research, 'shared' 60,000 times on Facebook. The article opens with the question:

> *"[…] why are some of the most popular vaccines commonly administered to children demonstrably causing autism in animal primates?"*

and continues in a more aggressive tone

> *"Laura Hewitson and her colleagues at UP conducted the type of proper safety research on typical childhood vaccination schedules* ***that the U.S. Centers for Disease Control and Prevention (CDC) should have conducted*** *--* ***but never has*** *-- for such regimens. And what this* ***brave team discovered was groundbreaking****, as it completely* ***deconstructs the*** *mainstream* ***myth*** *that vaccines are safe and pose no risk of autism."*

On the one hand, the article puts blame on CDC for not conducting proper research on this issue, and then glorifies the University team for proceeding with this research instead, carefully picking the adjectives that create some contrast with the position taken against the CDC. In addition, this sentence contains the element of irony in using the word 'myth' for official reports claiming that vaccines are safe.

The article continues,

> *"[…] the findings revealed that young macaque monkeys given the typical CDC-recommended vaccination schedule from the 1990s, and in appropriate doses for the monkeys' sizes and ages, tended to develop autism symptoms. Their unvaccinated counterparts, on the other hand, developed no such symptoms, which points to a strong connection between vaccines and autism spectrum disorders."*

The findings of this study are presented in an over-simplified way and conclusions are presented in such a way that makes it impossible for someone to reject or to endorse, but only accept as truthful.

Case #2 – Flu vaccines revealed as the greatest quackery ever pushed in the history of medicine.

This is an article which was posted online in 14 October 2009, a period when the H1N1 virus was still a hot topic in the news. The article starts emphatically:

> *"Prepare to have your* ***world rocked****. What you're about to read here will leave you* ***astonished****,* ***inspired*** *and* ***outraged*** *all at the same time. You're about to be* ***treated*** *to some* ***little-known*** *information demonstrating why seasonal flu vaccines are* ***utterly worthless*** *and why their continued promotion is based entirely on fabricated studies and* ***medical mythology****."*

The language that is used Is both powerful and colourful, creating a sense of climax for the reader and providing at the same time the promise of gaining access to some really exquisite information, that will evoke a mixture of strong emotions (i.e. astonished, inspired and outraged). The language becomes again

hostile and aggressive when the word 'vaccine' is mentioned. Once again, it is notable the use of word 'mythology' in combination with the word 'medical', in an effort to lead the reader into associating myths with pro-vaccine groups, instead of the anti-vaccine groups. In fact, later in the same article is mentioned that *" […] Many pro-vaccine experts simply refused to believe the results of this study [because it conflicts with their existing belief in vaccine mythology]."*.

The article continues by stating that,

> *"This information comes to you courtesy of a **brilliant** article published in The Atlantic (November 2009). The article, written by Shannon Brownlee and Jeanne Lenzer, isn't just **brilliant**; in my opinion it stands as the **best article** on flu vaccines **that has ever been** published in the popular press."*

Here we have examples of repetition of a word ('brilliant') to create a positive effect on the article, and also there is some considerable exaggeration, in stating that this article is the best that has ever been published in the popular press. This article makes an extensive listing of issues related with vaccines and their side-effects, to close as follows:

> *"[…] you might wonder: Why do people get vaccinated at all? The reason is because **no one knows whether they work or not** [bold text in original], so people keep on taking them "just in case." It's exactly **the kind of superstitious ritual that "science-minded skeptics"** rail against on a regular basis... unless, of course, it involves their vaccines, in which case superstition is all okay. People take vaccines for the same reason they rub a rabbit's foot. It's a good luck ritual that may or may not work, but no one really knows. And besides, what's the harm in it? (They think...) Personally, I'd rather get some vitamin D and have a healthy, functioning immune system. **But for those who prefer to play the lotto, gamble in Vegas or bet their lives on medical superstitions, flu vaccines are readily available**."*

This closing paragraph demonstrates once again the aggressiveness in the anti-vaccine rhetoric, and the implicit messages for people who choose to vaccine, appearing as victims of the system or their own 'superstitions'. The use of irony as a rhetorical trope appears once again in the last sentence of this paragraph.

Case #3 – Flu vaccines, pharma fraud, quack science, the CDC and WHO

In this last case we examine from articles at NaturalNews.com, we aim to identify any further recurring patterns in the anti-vaccine discourse. Again, it would be useful to make a start from the way this article opens:

> *"A **remarkable article** was published today by authors Richard Gale and Dr. Gary Null of the Progressive Radio Network .It may be the **most shocking** (**and important**) public health article published in the last two years. If you read just one health article this entire month, make it this one. The article is **remarkable** not just for its timeliness on the issue of mandatory vaccinations and public health policy, but also for its **damning evidence** that exposes the fraud and quackery of the vaccine industry (as well as the corruption at the CDC and WHO)."*

Once more, we can see that repetition of words and exaggeration in the use of adjectives and descriptions, are key ingredients for introducing the story to the public. In general, this article raises various issues with titles such as 'Mandatory vaccines fail in Japan', 'The CDC's scare tactics', 'No proper testing was ever

conducted', 'The CDC's flawed statistics', 'Corruption at the WHO', 'Financial corruption at every level'. The type of language used is quite straightforward and critical towards every direction.

7.4 Films

The depiction of infectious diseases in films is another area of focus for this report, as it is commonly accepted that entertainment media indeed have a great impact on influencing public attitudes, perceptions and behaviours (Kirby, 2008). It is important then to investigate the narrative, as well as 'meanings' and 'symbolisms' contained in films, which could generate myths or misinform the public. Aside of the fact that films have a great impact on shaping perceptions for the public, another study has suggested that frequent viewers of entertainment media are also more likely to hold positive opinions about pseudo-science (Sparks, 1998), making them more susceptible to urban myths and contemporary legends that circulate around pandemics and vaccination.

Perhaps the most complete review on the depiction of infectious diseases in cinema was carried out by Pappas et al. (2003). This review begins by making some introductory comments where is discussed that cinema did not appear to have an affinity for cinema until recently, except themes that relate to infectious diseases, epidemics and dangerous viruses. It is suggested that the early days of cinema (1930 – 1950) were characterised by admiration for infectious diseases pioneers (e.g. Louis Pasteur) and by awe for the devastating outcome of epidemics. In fact, most of the films from that era, are set in the background of a major disease outbreak, such as the 1918 influenza pandemic or the typhoid epidemic (Pappas et al., 2003).

The review by Pappas et al. (2003) continues to make a classification between films where the virus is contained and released as a result of a terrorist attack, or alternatively a laboratory accident. In either case, we can observe the shift made in the early 1970s, from the virus being treated as something alien that surpasses human capacity to contain, to the virus being considered as something that could be 'created' and handled by humans, even in the form of a weapon. The themes of biological warfare and bioterrorism could be considered as sources of fear and anxiety for humans, but not as much as laboratory accidents, with the scale of disaster and state of emergency possible to be imagined in real life, having as more recent examples the nuclear disasters in Chernobyl (1986) and Fukushima (2011).

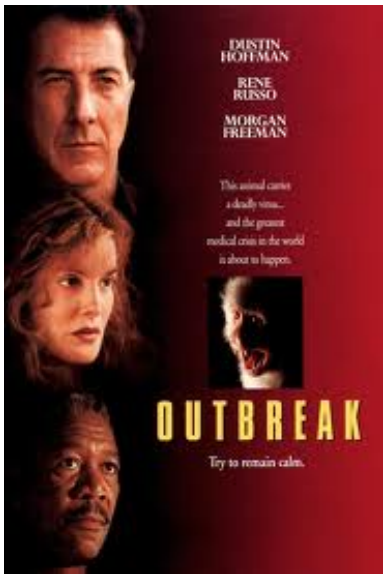

Figure 11: *Outbreak* poster

Pappas et al. (2003) then move to the description of more recent films, whose principal focus is the depiction of a killer virus that could eradicate entire population. The information provided become more scientific-based and accurate, while the narrative of many films follows some common patterns, moving from situations of panic, to the accidental discovery of some vaccine, or making more frequent references to the role of federal and international agencies, such as the World Health Organization and the Centers for Disease Control and Prevention. One such example would be the film *Outbreak* (1995) which is described as perhaps the most important film about an outbreak of infectious disease. It is also important also to take a note of the message projected to the public, where the tagline read: "Try to remain calm" (Figure 11). This was a message of great value for reaching the public's unconscious, in terms of the behavioural response to be expected in the case of a pandemic or an emergency in general. Another film poster that is

characterised by a completely different narrative is that of *28 Weeks Later* (2007), where the message on the tagline is far more graphic and absolute (Figure 12), in the form of a warning where anyone from the public could be the recipient of it, in contrast to the *Outbreak* tagline which provided more reassurance. Also interesting is the appearance of the biohazard symbol on the poster, making an implicit reference to the threat of epidemics breaking out from biological accidents.

Figure 12: *28 Weeks Later* poster

An interesting observation can be made with respect to other outbreaks represented in films, and presented in this review by Pappas et al. (2003). In particular, there are some movies which used the word 'killer' to describe the virus, such as *The Killer that Stalked New York* (1950) and the *Quiet Killer* (1992), which could have been a source of influence for the media when making use of the *killer* metaphor to describe a lethal virus.

We have seen that films can certainly have an impact on public attitudes and behaviour towards an infectious disease, or an epidemic, according to the narrative and perspective that is adopted in each occasion. So, infectious disease outbreaks in films can create an image of devastation and evoke a sense of fatalism for the public, creating in parallel some myths (as a variable of entertainment) with regard to public responses during an outbreak.

The most recent film on infectious disease outbreaks to come out on cinema in 2011, was entitled *Contagion*. The film follows "*the rapid progress of a lethal airborne virus that kills within days. As the fast-moving epidemic grows, the worldwide medical community races to find a cure and control the panic that spreads faster than the virus itself. At the same time, ordinary people struggle to survive in a society coming apart."*. At core, this is a film that allows viewers to get deeper insight and claim some (pseudo)expertise about preparedness and response to an infectious disease outbreak, mostly from the viewpoint of public health officials. *Contagion* is considered to be rather scary, as there is heightened sense of realism throughout the film and a depiction of events that unfold towards arriving to a societal background, which causes yet more fear.

This is a film that could significantly affect perceptions and behaviours of people towards a pandemic, considering also the urban myths and conspiracy theories that circulate online, mostly about the effects of vaccination. In many occasions, *Contagion* challenges conventional beliefs about disasters and emergencies with regard to people acting with altruism towards supporting other members of the community. The film almost tries to debunk this myth, suggesting that a lethal virus makes people to separate (tearing apart the social web) and not come any closer, since the fear of contracting the disease is deeply rooted inside. This is also evident in the film posters, where the taglines convey mostly messages of fear, such as 'Nothing spreads like fear' and 'Don't talk to anyone. Don't touch anyone' (Figure 13). This narrative of fear and panic that 'spread' faster than a pandemic, placing oneself voluntarily in a quarantine, considerably contrasts the message in *Outbreak* presented earlier. The third Contagion poster (middle) also carries some implicit message, with reference to specific cities around the world, perhaps creating a stereotype for those cities in future pandemics.

Figure 13: *Contagion* posters

With reference to specific myths about infectious disease outbreaks, which become generated from the film's narrative, these have to do more with the public health officials, appearing to be quite limited in their responses and isolated in their decisions. The narrative is built on elements of fear, tension, anxiety and lack of self-control, that many times lead people from the general public and public health officials alike, to make erroneous judgment calls.

Overall, it should not be underestimated the level of impact of films on public perception and behaviour, as in essence films is an audio-visual manifestation of a myth. Same as in the case of the mass media or the social media, films aim to communicate stories and meanings from a reality that is distant as much as it dwells inside viewers' consciousness. And same as with ancient myths, films are narratives that go beyond the ordinary human experience – however, the aim in this case is not to provide answers to complex questions, but simply to pose those complex questions.

CONCLUSIONS AND RECOMMENDATIONS

This report broadly examined the narratives and urban myths surrounding epidemics and vaccination, under the prism of particular narrative motifs which underlie public perceptions. The urban myths, and generally folk narratives, influence primarily the perceptions of risk and behavioural responses of the public towards an infectious disease outbreak, and as an extension, the attitudes towards vaccination and other preventive measures put forward by national public health authorities.

In particular, we investigated in depth the role of myths in older, as well as modern, societies and created a solid theoretical framework where population behaviour during epidemics could be explained in part, considering that myths are vehicles for communication of knowledge from one generation to the next, helping to preserve collective memory and establish socio-cultural constraints in the realm of the social unconscious. In addition, we have seen that myths have also been a medium of reassurance for communities in times of major epidemics, when scientific explanations of phenomena had been overly complex for people. In such cases, myths provided a sanctuary for people, where they could find reason and tame their anxieties and fears, while the narrative form has been the key to let inside.

The globalisation era, which is mostly characterised by the revolution in the field of Information and Communication Technologies (ICT), prompted significant changes in the traditional sense of forming collectives and communities for people. This means that perceptions of individuals about an infectious disease are not limited within a cultural or societal framework only, but extend to online communities, placed under a common ideological framework. Moreover, the more recent developments in ICT – especially the emergence of social media – have opened the Pandora's box for everyone, to find in containment an infinite amount of personal stories, accounts, tales, opinions and views about infectious diseases and the effectiveness of vaccines. As a result, different types of dynamics have been formed for people in terms of communicating and receiving information, as in essence every person could take the role of a story-teller, influencing other people's decision as a function of the persuasion modes and rhetorical tropes employed each time.

Below, we provide a number of recommendations for effective communication of information to the public, by taking under consideration qualitative aspects of urban myths and narratives in the event of infectious disease outbreaks.

Recommendations for Public Health Authorities

- *Public health authorities* need to develop a deeper understanding of the unconscious social drivers that 'push' people to generate (or circulate among the community) urban myths about infectious disease outbreaks and vaccinations. The generation of urban myths and contemporary legends by members of the community, and should be seen as a natural and sensible response of individuals to counterbalance their inner fears, anxieties, needs and concerns about the disease.
- *Public health authorities* need to make a methodical assessment of the rationale and impact for each urban myth separately, as these emerge during an infectious disease outbreak. Urban myths could be used as indicators to evaluate or predict the behavioural responses of the public in the implementation of a vaccination programme.
- *Public health authorities* need to create a series of alternative structured narratives for communication of messages, so that more groups from the community could be approached. That would require to make a qualitative assessment of the different groups deemed to oppose

vaccination strategies, and accordingly develop different sets of rhetorical schemes tailored to the needs of each group separately.

- *Public health authorities* need to focus mostly on the facts that need to be communicated to the public, and avoid systematic debunking of urban myths that emerge for the duration of the outbreak. Such a strategy would result in making people more familiar with the myth, and hence more likely to accept it as true. In addition, public health authorities need to take care when they make efforts to debunk urban myths, in which case *logos* (appeal to reason) should be used as a mode of persuasion.
- *Public health authorities* need to consider making more frequent use of *pathos* (appeal to emotion) when communicating messages to the public, as another mode of persuasion, together with *logos* and *ethos*. This would entail the usage of more vivid and colourful language.
- *Public health authorities* need to be cautious with the rhetoric discourse that is used to persuade the public getting a vaccine. Terms like 'mandatory' or 'compulsory' could entail infringement of fundamental rights, thus could be met with scepticism.
- *Public health authorities* need to ensure transparency at all stage and engage more actively the public in the decision making process, so that individual freedoms are balanced with collective responsibility. In this way, open channels could be created between government official, healthcare professionals and the public, where urban myths and concerns could be openly discussed.

Recommendations for Healthcare professionals

- *Healthcare professionals* need to communicate with patients in a language that is easily understood, free of scientific jargon, with a structured narrative that appears in its simplest form (Text; see p.21).
- *Healthcare professionals* need to take care they do not overload patients with information, so that ambiguities could be avoided. In the opposite case, there is a risk that ambiguities transform into rumours and urban myths around the disease.
- *Healthcare professionals* need to use more extensively rhetorical tropes in their communication with patients, such as metaphors, synecdoche and metonymy, creating a representational mapping in which both healthcare professionals and patients could express more openly.
- *Healthcare professionals* need to encourage patients to construct their own narratives, so that they could contextualise better their personal experience around the disease.
- *Healthcare professionals* need to be well prepared for answering questions about the disease and long-term side effects (if any) that vaccine could have, and engage into elaborate discussions so that no issues are left unclear, which could relevant to some rumour or urban myth they had heard or read. This strategy could result in progressively dissolving any concerns, rumours or urban myths from the patient's mind.

Recommendations for the Media

- *The Media* need to redefine their role as regards the reporting and coverage of an infectious disease outbreak. Media should always adopt a critical but neutral stance, especially in the case of vaccine strategies proposed by the government.
- *The Media* need to evaluate more carefully the information communicated to the public, as erroneous information and reproduction of urban myths could have a serious impact on the public health authorities' efforts to control the disease.

In all, we can conclude that a wide array of narrative motifs and urban myths exist, having a direct impact on public perceptions and attitudes in response to an infectious disease outbreak. Perhaps the most complex problem is the fact that during an infectious disease outbreak, people are confronted with an immense amount of information, which very often are controversial or contradictory. This creates confusion and uncertainty as to which would be the best way to act, and this would be a case where people find retreat in the familiarity and comfort of urban myths. In the words of Thomas May, a bioethicist, *"no policy for vaccine distribution is likely to succeed until public fears that motivate counter-productive behaviours are addressed"* (May, 2005; p. 408).

REFERENCES

Allport, G.W & Postman, L. (1947). *The psychology of rumour*. New York, NY: Rinehart & Winston.

Bal, M. (1997). *Narratology: Introduction to the theory of narrative*. University of Toronto Press.

Barnes T. J. & Duncan J. S. (1991). *Writing worlds: Discourse, text and metaphor in the representation of landscape*. New York: Routledge.

Barthes, R. (1977). *Introduction to the structural analysis of narratives*. Image-Music-Text. London: Fontana.

Baughman, E. (1945). The fatal initiation. *Hoosier Folklore Bulletin*, 4, 49-55.

Ben-Amos, D. (1971). Toward a definition of folklore in context. *The Journal of American Folklore*, 84(*331*), 3-15.

Black, M. (1981). Metaphor, in M. Johnson (Ed.), *Philosophical perspectives on metaphor*. University of Minnesota Press.

Botkin, B. (1944). *A treasury of American folklore*. New York, NY: Crown Publishers.

Brednich, R. W. (2001). Where they originated. Some contemporary legends and their literally origins. *Folklore: Electronic Journal of Folklore*, 20, 7-16.

Bronner, S. (1990). Left to their own devices: Interpreting American children's folklore as an adaptation to aging. *Southern Folklore* 47(*2*), 101–115.

Brunvand, J. H. (2002). *Encyclopedia of urban legends*. W. W. Norton & Company.

Burke, K. (1969). *A Grammar of Motives*. Berkeley, CA: University of California Press.

Chew, C. & Eysenbach, G. (2010). Pandemics in the age of Twitter: Content analysis of tweets during the 2009 H1N1 outbreak. *PLoS ONE* 5(*11*), available from <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0014118>.

Chiang, W. Y & Duann, R. F. (2007). Conceptual metaphors for SARS: 'War' between whom? *Discourse & Society*, 18(*5*), 579-602.

Dawkins, R. (1976). *The selfish gene*. Oxford University Press.

Denzin, N. K. (1989). *Interpretive biography*. Newbury Park, California: Sage.

Detienne, O. M. (1986). *The creation of mythology*. Chicago, IL: University of Chicago Press.

Dorson, R. M. (1959). *American folklore*. Chicago, IL: University of Chicago Press.

Downs J.S., de Bruin W.B. & Fischhoff B. (2008). Parents' vaccination comprehension and decisions. Vaccine, 26(12), 1595-1607.

Eysenbach,G. & Kohler, C. (2002). Howdo consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews. *British Medical Journal*, 324, 573-578.

Fine, G. A., Campion-Vincent, V. & Heath C. (2005). *Rumor mills: The social impact of rumor and legend*. NY: Aldine.

Foa, A. (2000). *The Jews of Europe after the Black Death*. Berkeley, CA: University of California Press.

Foss, S. K. & Griffin, C. L. (1995). Beyond persuasion: A proposal fora n invitational rhetoric. *Communication Monographs*, 62, 2-18.

Gearhart, S. M. (1979). The womanization of rhetoric. *Women's Studies International Quarterly*, 2, 195-201.

Geison, G. L. (1995). *The Private Science of Louis Pasteur.* Princeton: Princeton University Press.

Goldstein, D. (2004). Once upon a virus. Logan, UT: Utah State University Press.

Goltz, J. D. (1984). Are the news media responsible for the disaster myths? A content analysis of emergency response imagery. *International Journal of Mass Emergencies and Disasters*, 1, 345-368.

Guerin, B. (2003). Language use as social strategy: A review and an analytic framework for the social sciences. *Review of General Psychology*, 5, 406-428.

Guerin, B. & Miyazaki, Y. (2006). Analysing rumors, gossip, and urban legends through their conversational properties. *The Psychological Record*, 56, 23-34.

Gwyn, R. (2002). *Communicating health and illness*. London: Sage.

Halbwachs, M. (1950). *La mémoire collective*. Paris: PU de France.

Heath, C., Bell, C. & Sternberg, E. (2001). Emotional selection in memes: The case of urban legends. *Journal of Personality & Social Psychology*, 81(*6*), 1028-1041.

Jakobson, R. & Morris, H. (1956). *Fundamentals of Language*. The Hague: Mouton.

Kaldor, M. (2006). New and old wars: Organised violence in a global era. Cambridge: Polity Press.

Kapferer, J. N. (1990). *Rumors: Uses, interpretations and images*. Transaction Publishers.

Kata, A. (2010). A postmodern Pandora's box: Anti-vaccination misinformation on the internet. *Vaccine*, 28, 1709-1716.

Kata, A. (2012). Anti-vaccine activists, Web 2.0 and the post-modern paradigm – An overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine*, 30, 3778-3789.

Kipfer, B. A. (2008). *Phraseology*. Naperville, IL: Sourcebooks Inc.

Kirby, D.A. (2008). Cinematic science: The public communication of science and technology in popular film, In B. Trench & M. Bucchi (eds.), *Handbook of public communication of science and technology*. New York: Routledge.

Kirk, G. S. (1970). *Myth: Its meaning and functions in ancient and other cultures*. Berkeley, CA: University of California Press.

Kirk, G. S. (1974). *The nature of Greek myths*. Baltimore: Penguin Books.

Knapp, R.H. (1944). A psychology of rumour. *Public Opinion Quarterly*, 8, 22-27.

Koteyko, N., Brown, B. & Crawford, P. (2008). The dead parrot and the dying swan: The role of metaphor scenarios in UK press coverage of avian flu in the UK in 2005-2006. *Metaphor and Symbol*, 23, 242-261.

Kövecses, Z. (2010). Metaphor, creativity and discourse. *Documentação de Estudos em Lingüística Teórica e Aplicada*, 26, 719-738.

Lakoff, G. & Johnson, M. (1980). *Metaphors we live by*. Chicago: Chicago University Press.

Lakoff, G. (1992). The contemporary theory of metaphor, in O. Andrew (ed.), *Metaphor and thought* (2nd ed.). Cambridge University Press.

May, T. (2005). Public communication, risk perception, and the viability of preventive vaccination against communicable diseases. *Bioethics*, 19(*4*), 407-421.

McBean, E. (1957). *The poisoned needle*. Health Research. http://www.whale.to/a/mcbean.html

McKay, J. M. (1983). Newspaper reporting of bushfire disaster in South-Eastern Australia. *Disasters*, 7, 282-289.

McLuhan, M. (1964). *Understanding media: The extensions of man*. New York: Macmillan.

Miculincer, M. & Shaver, P. R. (2005). Attachment security, compassion, and altruism. *Current Directions in Psychological Science*, 14, 34-38.

Miller, D. E. (2005). Rumor: An examination of some stereotypes. *Symbolic Interaction*, 28(*4*), 505-519.

Montgomery, S. L. (1996). Illness and image: On the contents of biomedical discourse. In S. L. Montgomery (ed.), *The scientific voice*. London: Guildford.

Mosier, J. (2005). War myths. *Historically Speaking: The Bulletin of the Historical Society*, 6(*4*).

Nerlich, B., Hamilton, C. A. & Rowe, V. (2002) .Conceptualising foot and mouth disease: The socio-cultural role of methaphors, frames and narratives, in *Metaphorik.de* 02/2002.

Pappas, G., Seitaridis, S., Akritidis, N. & Tsianos, E. (2003). Infectious diseases in cinema: Virus hunters and killer microbes. *Clinical Infectious Diseases*, 37, 939-942.

Propp, V. (1971). *Morphology of the folktale (Vol. 9)*. University of Texas Press.

Reaver, J. R. (1952). Embalmed alive: A developing urban ghost tale. *New York Folklore Quarterly*, 8, 217-220.

Ricci, J. (2010). H1N1 returns, again: The globalization, reconceptualization and vaccination of "Swine Flu". *Global Health Governance*, 3(*2*), 1-18. Available from: <http://www.ghgj.org/Ricci_H1N1%20Returns.htm>

Riedel, S. (2005). Edward Jenner and the history of smallpox and vaccination. *BUMC Proceedings*, 18, 21-25.

Rosnow, R. L. (1991). Inside rumor: A personal journal. *American Psychologist*, 46, 484-496.

Rubin, H. (2011). *Future global shocks: Pandemics*. OECD. Available from: <http://www.oecd.org/gov/46889985.pdf>

Schwartz, C., Meisenhelder, J. B., Ma, Y. & Reed, G. (2003). Altruistic social interest behaviors are associated with better mental health. *Psychosomatic Medicine*, 65, 778-785.

Scott, R. L. (1991). The necessary pluralism of any future history of rhetoric. *Pre/Text*, 12, 195-209.

Segal, R. A. (2004). *Myth: A very short introduction*. Oxford: OUP.

Shibutani, T. (1966). *Improvised news: A sociological study of rumor*. Indianapolis, IN: Bobbs-Merrill.

Skurnik, I., Yoon, C., Park, D. C. & Schwarz, N. (2005). How warnings about false claims become recommendations. *Journal of Consumer Research*, 31, 713-724.

Sontag, S. (1978). *Illness as metaphor*. Toronto: McGraw-Hill.

Sparks, G. (1998). Paranormal depictions in the media: How do they affect what people believe?, *Skeptical Inquirer*, 22, 35-39.

Spier, R. E. (2001). Perception of risk of vaccine adverse events: A historical perspective. *Vaccine*, 20(*1*), 78-84.

Starko, K. M. (2009). Salicylates and Pandemic Influenza Mortality,1918–1919 Pharmacology, Pathology, and Historic Evidence. *Clinical Infectious Diseases*, 49(*9*), 1405-1410.

Wallis, P. & Nerlich, B. (2005). Disease metaphors in new epidemics: The UK media framing of the 2003 SARS epidemic. *Social Science and Medicine*, 60(*11*), 2629-2639.

Willis, N. J. (1997). Edward Jenner and the eradication of smallpox. *Scottish Medical Journal*, 42, 118–121.

Wilson, K & Keelan, J. (2009). Coping with public health 2.0. *Canadian Medical Association Journal*, 180(*10*), 1080.

Ziegler, P. (1969). *The Black Death*. Harper & Row Publishers.

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