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Communicating with Citizens in Emergency Management: "Popularizing" Technical Content and/or Bonding?

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Introduction

The purpose of this thesis is to present some considerations on the complex process of communication in emergency-related contexts. In order to reach this aim, the analysis of a selected corpus of fact sheets, *i.e.* texts with informative intent, will be offered; attention will be placed on two categories of public: present and future experts in emergency management, and non-experts, that is ordinary citizens.

In today's technological and constantly developing world, we are surrounded by information: news about political changes and revolutions, information about economics, entertainment news and gossip and, last but not least, information about the environment travel almost at the speed of light. In particular, topics such as climate change and emergencies related to natural hazards are central in our society; together with new regulations on environmental protection and respect, emergency-related studies are also developing. The main topic of this work is precisely disaster-related emergencies and their management: experts in this field aim to achieve improvements both in communication and in action. Nonetheless, the aim of emergency managers is not easy to reach: in fact, nowadays, everyone can access information and, most of all, contribute to it. This is why it is often impossible to discern whether the information provided and communicated, via social media in particular, is reliable or not.

Basing of these considerations, this work places itself as a possible new contribution to the developing emergency-related studies. My final aim is to understand if there exists any balance between the information provided in disaster situations and the way this information is communicated to the public. More specifically, I aim to understand whether the texts provided to the general public (non-experts) by official authorities (experts) are an example of effective and clear communication.

This work involves some of the main disciplines that have characterised my university career and made it interesting: it focuses on English language and linguistics and on Italian language and linguistics, involving disciplines such as public relations and intercultural communication. Communication has always interested me: the study of foreign languages allowed (and still allows) me to explore the world, to study, know and understand different cultures and people, develop my communication skills and broaden my horizons, my ideas and my dreams. This work started to take shape during the month I spent in the Slándáil Project office in my university: this European project, and the terminology project called Slándáil Terminology Wiki in particular, is a contribution to contemporary emergency-related studies. Although already started long before my arrival, I had the opportunity to live a challenging and interesting experience and provide some contribution to it. My contribution was based on terminology studies and analysis. Inspired by the Project, I decided to connect the topic of terminology used in emergency situations to the aspect of communication, and I developed a study based on a self-selected corpus. This corpus presents, as already suggested, fact sheets in

Italian and English; more specifically, Italian texts for non-experts, English texts for non-experts, Italian texts for experts and, finally, English texts for experts.

The chapters devoted to the review of literature will be organized as follows: the first chapter focuses on emergency management as a fundamental element in emergency situations, more specifically the ones caused by natural hazards such as flood. Some basic notions related to emergency management and its four phases, namely mitigation, preparedness, response, recovery, will be presented, in order to provide a pertinent theoretical background for the analysis, and introduce the readers into the work. Chapter 1 also focuses on communication: some definitions of the concept will be given, together with an insight on its different aspects, basing on the works of some authoritative voices from the XX century and XXI centuries. Attention will be on communication in emergency contexts and on special languages, the ones used in scientific domains in particular. The concepts of scientific dissemination and of popularization will prove to be particularly relevant in this study. Attention will be given to the role of communication in the four phases of emergency management and to mediated communication: communication channels will be introduced and emphasis will be on the ones used by the American FEMA and the Italian Protezione Civile. Finally, I will give a short introduction of fact sheets, that is the corpus that will be analysed.

The second chapter will focus on terminology: terminology studies and their historical and linguistic development will be delineated, together with some definitions of terminology. The main concepts belonging to today's terminology will be introduced and explained; attention will be placed to two approaches in particular, one more theoretical and one more practical. First, an overview of contemporary "Sociocognitive Terminology" (Temmerman 2000: 34) will be given. Second, focus will shift to terminology in today's digital society: terminological projects (TP) will be introduced, and their main characteristics and issues will be presented. Project Slándáil will be introduced as an interesting European TP which involves countries such as Italy, Germany, Ireland and the United Kingdom and which can aims to study today's disaster related communication and terminology. I will briefly describe what Project Slándáil is and conclude with the explanation of why the Slándáil Terminology Wiki can be considered not only a relevant example of terminology study, but also a substantial piece of this work.

The third, the fourth and the fifth chapters will be devoted to the analysis of the communicative characteristics of the texts I selected; they will be studied from a textual and from a visual point of view. To be more specific, these documents will be twelve selected emergency related documents (fact sheets) issued by official authorities such as the Italian Protezione Civile and the American FEMA (Federal Emergency Management Association). In greater detail, the third chapter will focus on the methods used for the textual analysis of the Italian and English selected emergency-related texts. First, the process of the data selection procedure and the final list of the documents will be offered. Second, the different steps of the textual analysis will be introduced: focus

will be on the tools used to process the data, on the data storage organization and on the variables and models used for the analysis.

The textual analysis of the documents will be provided in the fourth chapter: the analysis will begin with the six texts for experts, the three Italian ones first, and the three English ones after. It will end with the three Italian texts for non-experts and the three English ones for non-experts. For the textual analysis of each text, two tools will be used: WordSmith Tools 4.0 will provide data on frequency lists, keywords and collocates. Tint and Word will be used to obtain the readability index of, respectively, the Italian texts and the English ones. Finally, the obtained results will be commented and discussed.

The fifth chapter will focus on the analysis of the visual aspects of the six selected emergency texts for non-experts: the visual presentation plays a key role in the communicative potential of documents for the general public, and the fact sheets I selected are a clear example of this. The chapter will begin with a description of the methods followed for the analysis. Finally, the results of the analysis of the visual aspects of the texts: it will begin with the 3 Italian texts for non-experts, and continue with the 3 English texts for non-experts. Each variable taken into consideration will be discussed and commented.

The sixth and final chapter will specifically focus on emergency-related terminology: I will provide an example of my work in the Terminology Wiki and clarify why it can be considered a substantial piece of the project. This chapter will focus on the Slándáil Terminology Wiki, which is a terminology project (TP) funded by the European Union and devoted to emergency-related terminology in particular. The challenging process of the creation of terminology wikis will be explored, emphasising my contribution to the project. First, the methods used to carry out the task will be indicated, together with the data selection procedure and the list of the source documents. Second, the different steps of the analysis will be introduced, focusing on the tool used to organize and store the data, and on the variables and models used. Finally, the results of my contribution will be presented in tables and discussed. I selected the wiki page *flood operations* as a significant example of my contribution to the expansion and improvement of the current vocabulary.

In the end, on the basis of an overall evaluation of all the previously presented components, this work will conclude with a short review of the results and with some final considerations on the possible contribution of this work in the world of emergency related studies. Some drawbacks will also be presented. As a short preview of the results, I observed that the texts chosen for non-experts can be considered relevant example of pleasant and effective communication for the general public; nonetheless, they will need some improvements.

Chapter 1

Emergency Management and Communication

1.1 Introduction

"Natural disasters do not respect borders or distinguish between citizens" (Slándáil Magazine 2015: 3): it is starting from this essential yet truthful statement that the importance of management in emergency situations, more specifically the ones caused by natural hazards, will be introduced and explained. Disaster-related emergencies are a consistent problem in our society: we are constantly bombarded with news concerning all types of hazards, from the devastating earthquakes in central Italy and in the Eastern hemisphere, to the floods and tsunamis in America, and so on.

The need for awareness of the potentially dangerous situations and the consequences of natural disasters is, therefore, essential for people all over the world, from emergency-management experts to ordinary citizens. In such a context, emergency-related studies have progressively become central. This field of study aims to elaborate and provide emergency management effective measures in order to face disaster-related emergencies in the best possible way, both in communication and in action.

First, this chapter will focus on how an emergency situation can be defined. Moreover, a definition of flood will be provided, it being the natural hazard on which this work is based; I will shortly outline the reason for this choice. Second, focus will be given to the process of emergency management. This process is composed of the following phases: mitigation, preparedness, response, recovery. Each of these aspects will be dealt with in a specific paragraph. A short comment on the fundamental relation between emergency management and communication will be given, introducing the concept of communication. I will reflect on the role of communication in each of the four phases of emergency management. Then, emphasis will be on communication only: a short definition of the term will be provided, together with a description of its different elements and characteristics; attention will be on mediated communication in particular.

Later in the chapter, attention will be given to the special language used in scientific domains and to scientific dissemination (*divulgazione scientifica*); special languages will be defined, and their main characteristics will be identified and discussed. A short paragraph will be devoted to the central concept of popularization. Communication channels will finally be introduced, and a list of all the different channels used by the American FEMA and the Italian Protezione Civile in order to communicate will be provided. A short introduction on fact sheets, that is written communication with informative intent, will conclude this chapter.

1.2 Emergency Situations and Emergency Management

1.2.1. Emergency Situations

A description of emergency, or disaster, situations will be provided here. The United Nations Office for Disaster Risk Reduction (UNISDR) suggests that the terms emergency and disaster can be interchangeable in the event of a natural hazard. UNISDR defines the concept of disaster as follows:

> A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. (www.unisdr.org)

Such interference ("disruption") can be limited in space and time, but it can also affect wider areas for a longer period; consequences are generally negative, and they often require the intervention of national and international agents.

Among the major possible consequences of a disaster, there are the malfunctioning of services and, most of all, the damage to "physical, mental and social well-being" (ibid.) of community members. The impact of disasters can also be seen as a combination of different factors, among which the "vulnerability" (ibid.) of the affected community or society to face the potential damage caused by the hazard.

Natural hazards are phenomena that depend on nature and its processes, and they include, among others, extreme cold and extreme heat, earthquakes, landslides, fires, wildfires, earthquakes, volcanic eruptions, tsunamis, tornadoes and floods. In this work, emphasis will be given to the phenomenon of flood. The reason for this choice is the following: floods can be considered the most widespread "natural-weather event" (FEMA 1998: 2) in the world. It is indeed very common in the U.S.A. and in Italy, where this study focuses. Also, there is much useful material and documentation about this natural hazard. To begin with, an introductory definition of the term flood is needed. The American Federal Emergency Management Agency (FEMA) provides the following:

> a general and temporal condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters, unusual or rapid accumulation or runoff of surface waters, or mudslides/mudflows caused by accumulation of water. (2010: B-5)

Floods are a consistent problem: they can cause real damage to buildings and homes, they can disrupt the functioning of streets and ways of communication and, most of all, they can cause life losses and serious injuries. In order to avoid or, more realistically, to diminish the "vulnerability" (UNIDSR, www.unisdr.org) of the communities in danger zones, specific emergency measures are being developed and adopted by experts in emergency management and by official authorities.

As previously suggested, in order to deal with an emergency situation in an effective way, there has to be awareness of the possible risks communities are going to

face. Moreover, developing an emergency plan is essential to prevent these risks from happening, or at least from causing inevitable damage. It is in this context that the concept of emergency management can be introduced.

1.2.2. Emergency Management

The term emergency management "generally refers to activities associated with avoiding and responding to natural and human-caused hazards", according to the American National Government analyst Lindsay (2012: Summary). More specifically, emergency management has a wide spectrum of application and its organization is based on different "actors […] depending on the context and severity of the event" (ibid.): in fact, emergency management involves not only local, State and Federal government entities, but also private organizations and nongovernmental institutions (ibid.).

A brief outline the history of the term emergency management and its components will be provided. According to FEMA, emergency management was created in 1979, when "five Federal agencies that dealt with many types of emergencies consolidated to form FEMA" (1998: 2); it eventually evolved over the years. Three different components constitute emergency management; they are listed in the following table (Figure 1.1):

All types of hazards	There are many common features of technological and natural disasters and attack, suggesting that many of the same management strategies can apply to all emergencies.
An emergency management partnership	Finding resources for disaster management requires a partnership among all levels of government (local, State, and Federal) and the private sector (business and industry, voluntary organizations, and the public). This approach also allows the disaster victims to contribute to emergency management solutions. Emergency managers and the animal-care community can collaborate in such a partnership.
An emergency life cycle	Disasters do not just appear one day — they exist throughout time and have a life cycle of occurrence. This cycle is matched by a series of management phases: establish strategies to mitigate hazards; prepare for and respond to emergencies; and recover from effects.

Figure 1.1 The three components of emergency management (FEMA 1998: 2).

In a nutshell, emergency management can be defined as "the process of preparing for, mitigating, responding to, and recovering from an emergency" (Slándáil Magazine 2015: 7). More precisely, it involves "the coordination […] of all activities necessary to build, sustain and improve the capabilities to prepare for, respond to, recover from, or mitigate against […] disasters" (Blanchard, 2007: 225). These activities are also called 'programs' (ibid.), and they include the four emergency management phases that will be explained in the following sections. Both the definitions provided above can be related

to all-hazards emergency management and, specifically to this study, to natural hazard events.

Emergency management is articulated in four main phases, that are to be thought "as a continuum" (Haddow and Haddow 2010: 93). They are, namely: mitigation, preparedness, response, recovery. The following diagram (Figure 1.2) shows these four stages and their fundamental bond:

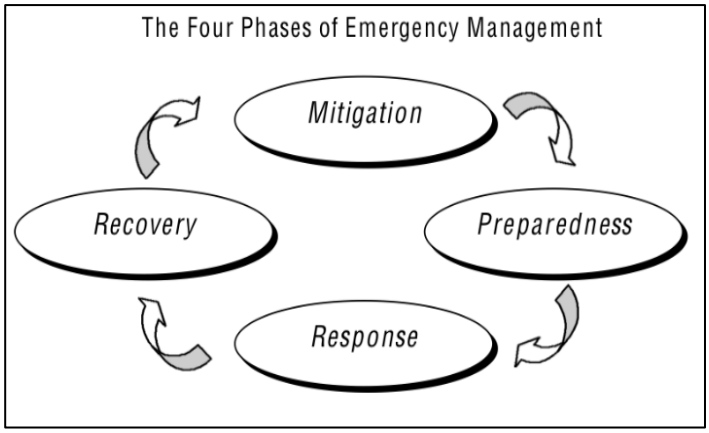


Figure 1.2 The Four Phases of Emergency Management (FEMA 1998: 2).

It seems relevant to underline that these four phases are not only strongly linked to each other, but they also cannot be perceived as distinct entities. In fact, as stated in a Congressional Research Service report, while they can be considered singly because "conceptually useful for targeting efforts and resources", they can "often overlap" (Lindsay 2012: 3). Moreover, some suggest that the four phases have a cyclical nature: each stage is essential for the development of the others, and only the improvement of each stage can lead to the creation of balanced and effective emergency management plans for present and future disasters. Since each stage requires the accurate attention, I will devote each of the following sections to one specific phase. The order will be the following: mitigation, preparedness, response, recovery.

1.2.2.1 Mitigation

Mitigation is the first phase of the emergency management process. It is, first of all, the action of "preventing future emergencies or minimizing their effects" (FEMA, 1998: 2). Hazard mitigation in particular can also be defined, to quote Blanchard (2007: 724), as "any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards". It should usually take place before a disaster happens, but it can occur also prior to or after a disaster. In fact, even though experts demonstrated that hazard mitigation results more effective when it is developed before a disaster happens, this is not always the case, since these programs are often developed after the disaster has taken place.

The main aim of mitigation is "to prompt action by decision makers – homeowners, small business owners, community leaders – to take action to reduce future disaster impacts", as is underlined by Haddow and Haddow (2014: 95). According to them, four elements need to be taken into account in order to develop a proper mitigation program: first of all, the involvement of all the members of the community, both experts and non-experts, is essential. Second, the possible risks that the community may encounter should be identified; third, the community should point to the development of the proper plan to face these risks. Finally, the element of political and public funding and support should be considered. It is in relation to this fourth step that communication, mostly through education and social media, comes into play.

1.2.2.2 Preparedness

Preparedness is the second phase of the emergency management process. It is often confused with the previous phase, that is mitigation, but its nature is different: in fact, while the first phase should aim to reduce disasters and their impact, preparedness is designed to face them (Haddow and Haddow 2014: 93). This phase can be defined as:

> A state of readiness to respond to a disaster, crisis, or any other type of emergency situation. It includes activities, programs, and systems that exist before an emergency that are used to support and enhance response to an emergency or disaster. (Blanchard 2007: 625)

In short, preparedness is the process of organizing and preparing to face an emergency before it happens.

According to Haddow and Haddow, there are two types of preparedness programs: the first type focuses on the preparation for the next disaster, while the second type focuses on the creation and spread of the "warning information" to the people involved, indicating whether "to evacuate or shelter-in-place as the next disaster approaches" (2014: 98). Basically, a preparedness program should provide the following information: evacuation plans and instructions for emergency kits, water and food provisions; lists of emergency numbers to call in case of need; instructions on what to do and how to deal with, for example, domestic animals; information on how and where to find temporary and safe shelters. In order to make both these programs effective, the element of communication is central.

1.2.2.3 Response

Response is the third phase of the emergency management process. Response takes place during an emergency and it is the capability to immediately react in a disaster situation. According to FEMA (1998: 2), it "includes actions taken to save lives and prevent further property damage in an emergency situation". The above mentioned actions should protect the environment and guarantee all basic human needs, including, among others, victims evacuation, food and medical supplies, and the "establishment of

incident command operations" (ibid.).

It is true that "the primary burden of emergency response" belong to emergency management official organizations and to authorities (Blanchard 2007: 4). Nonetheless, also common citizens and volunteers play a key role in this phase: it is during response that people must act promptly to protect other people and animals, and, most importantly, to save lives. Timeliness is clearly essential, as much as timely communication is.

1.2.2.4 Recovery

Recovery is the fourth and final phase of the emergency management process. As the word itself suggests, it can be defined as the passage that leads from a negative situation to a positive one. Recovery is characterized by activities that might involve a considerable amount of time after an emergency and that "are intended to restore essential services and repair damage caused by the event" (Lindsay 2012: 3).

This phase consists in rearranging your life and the life of a community after a disaster has happened. This, according to Blanchard (2007: 680, 681) should be done in two ways: first, the basic services of the community should be implemented, in order to return operative as soon as possible. Among these services there would be, for example, public safety, housing for people who have lost their homes, and temporary schools.

Second, economic growth and people's confidence in the community and in future improvements should be encouraged. It is important to underline that recovery is strongly linked to the three previous phases of emergency management; as suggested before, the passage from one of the four phases to the other is indeed a continuum. Recovery should, indeed, not only re-establish all the balances in the afflicted community. It should also contain some components of the mitigation phase (Blanchard 2007: 680), and become "an integral part of the response from the very beginning, as actions taken during the response phase can influence the longer-term outcomes for a community" (HM Government 2013: 10).

Once again, timely communication is central: in order to react in a suitable way, communities should be informed not only on how to face an emergency, but also on what types of relief assistance is available and how to use them. Government programs, private donations and voluntary associations should provide this assistance, as underlined by Haddow and Haddow (2014: 115). As can be seen from the considerations made above, information is central in all the phases of emergency management, both in quantity and in quality. This aspect is connected to the concept of communication, which will be introduced in the following paragraphs.

1.3 Emergency Management and Communication

The main aim of emergency management is, as stated by FEMA (1998: 10),

> to provide protection from all hazards for the citizens, properties, and governments within the United States. Effective emergency management includes a functional approach to all emergencies, cooperative planning, appropriate use of resources, and shared responsibilities among the […] levels of government.

Even if it is not mentioned, there is a fundamental word hidden in the previous quotation: information, which can only be provided through communication. The meaning of the previous statement will be explained in the following paragraphs: I will reflect on the role of communication in emergency management.

Haddow and Haddow (2014) argue that "communication is now universally accepted as critical function in emergency management" (p. 1). This assumption is based on the following principle: communication is essential before, during and after an emergency. In fact, each of the four phases of emergency management requires accurate information, and none of them would be effective without the "essential necessity" (de Mooij 2014: 1) of communication.

In an emergency management context, authorities providing the information should pay particular attention to their target public and respect the "customer focus" (Haddow and Haddow 2014: 6). There are different kinds of costumers (term used by Haddow and Haddow to name the public): "internal costumers" are disaster partners, staff and federal and state agencies, and "external costumers" are the general public, leaders and the social media, each with specific "special needs" (ibid.). Moreover, the authorities in charge should be held responsible for the gathering ("collation"), the choice ("assessment" and "validation") and the following distribution ("dissemination") (p. 5) of information both internally and externally. The philosophy that should be followed is: "placing the needs and interests of individuals and communities first, being responsive and informative, and managing expectations" (ibid.). Only then effective communication can be created.

Communicating means, basically, to provide, receive and exchange information. Emergency management strongly depends on such information, but there is a risk: information can often be misleading and dangerous. In fact, "maintaining the flow of information, within agencies, with partners, and to the wider public, is extremely challenging under emergency conditions" (HM Government, 2013: 20). Therefore, the role of the actors involved should not be underestimated. As underlined by the UK authorities, there are special preparatory measures at the basis of an effective information management; these measures should "build situational awareness and the development of the right situational picture at all levels" (ibid.).

It is also true that, as I will explain in greater detail in the following sections, communication has changed over the years: as Haddow and Haddow (2014) suggest, "with every disaster, dependence on the use of social media has increased" (p. xvii). Thanks to the development of new technological devices and social media applications,

people can now have public access to information: in fact, technology "has […] blurred the lines between the reporter and the audience, between the disaster agency and the public" (ibid.). In conclusion, as communication is the key to emergency management, one might suggest that "using all the media mechanisms available to you is the key to success" (ibid.).

1.3.1 Communication and Mitigation

The support needed to develop a proper mitigation plan can be developed, according to Haddow and Haddow (2014), through "marketing" (p. 95). In short, in order to create the proper support and build an effective program, authorities have to be educated: first of all, they must be informed on the development of a mitigation plans for the communities involved; second, they must know how to collect and provide information that the media will then communicate to the public (ibid.). While it is true that this is something valuable for all emergency management phases, it is also noticeable that communication through the media is particularly relevant in the mitigation phase, it being, shortly, "preventing future emergencies or minimizing their effects" (FEMA, 1998: 4).

Among the different examples of mitigation plans communication, the Living Rivers Project in the Napa Valley can be considered relevant: the emergency authorities working on this project produced and distributed a lot of printed material, together with articles and interviews to officials. This is how the proposition for the mitigation plan passed and was later developed. It is in the Napa Valley that, as Haddow and Haddow (2014) underlined, that communication has improved the mitigation phase. In fact,

> flooding impacts have been significantly reduced, sensitive environmental areas have been enhanced and preserved, and the local economy has seen a boom in investments in tourism-related projects (p. 97).

1.3.2 Communication and Preparedness

In order to develop and promote a proper preparedness program, the commitment of all of the parties involved, from the citizens of the areas prone or affected by disasters, to governmental and nongovernmental organizations; the media, too, play a crucial role. The main purpose of preparedness plans is to identify the possible risks in an emergency situation and to prepare to face them, limiting the damage.

As underlined by Haddow and Haddows (2014), there are different elements to consider in the development of an effective preparedness program. These elements are:

> full participation of the communications staff in program design and implementation collection and presentation of all information, identification of target audiences, message development, use of a broad range of communications mechanisms […] and […]monitoring and updating communications strategies and tactics. (p. 99)

Preparedness programs should awake the conscience of all the people involved,

officials and non-officials, and prepare them to deal with disasters.

1.3.3 Communication and Response

As previously suggested, communication is central also in this phase: in fact, "the primary purpose of communications activities in a disaster response is to provide accurate and timely information to the public" (Haddow and Haddow 2014: 107).

It is important to underline that, unlike in the two previous phases, mitigation and preparedness, "communication work in disaster response is about working in partnership with every interested media" in order to provide the public with accurate information. It is not about marketing nor promotional activities: it is about human relationships and trust. It is suggested that the people who have the responsibility and the power to deliver the message play a key role in communication: they should "put a human face on a disaster response and these people are critical to building confidence in the public that people will be helped and their community will recover" (ibid.).

1.3.4 Communication and Recovery

In this phase, as highlighted by Haddow and Haddow (2014), communication of "recovery information" is central (p. 117); this communication can operate through all the media. It is worth mentioning that the possibility of incongruous and misleading information usually increases in recovery, "as more organizations and groups become involved and accurate information about relief programs can be difficult to obtain" (p. 115). As the UK authorities underline (HM Government, 2013: 10), it is up to the appropriate information management systems to deal with the collection, the assessment and the distribution of the right information. The role of social media is fundamental in this phase.

Some of the main elements that, according to Haddow and Haddow (2014), can help develop effective recovery communication are the following: the first step is based on building an "information clearinghouse" (p. 117), which is a structure where the information coming from all kinds of sources is collected and analyzed. The media too are important: they can provide constant new and detailed news and information on recovery actions and programs and, together with "neighborhood communications networks" (p. 118) and "community relations teams" (ibid.), they can reach all the members of the community and "encourage them to apply for assistance" (ibid.).

1.4 The Concept and the Different Types of Communication

As the linguist and researcher Marieke de Mooij quotes, "We cannot not communicate" (2014: 1). The expert identifies two main types of communication: human communication and mediated communication. The first one is something natural and innate into human minds and bodies: "it is *something people do*" (p. 2). It is based

on the relationship between two or more people and it involves the three following basic elements: "the communicator", that is the person who communicates, "the message", that is the element conveyed and transmitted, and, finally, "the receiver" (ibid.), that is the subject to whom the message is directed. Concerning the second type of communication, *i.e.* mediated communication, it "uses some form or medium other than by mouth" (p. 5).

It is relevant to underline the importance of the message as the link between the first and the second subject in the communication process: the message "exists as a sign or a collection of signs with no meaning of its own except […] what the people put into it and what the receivers take out of it, which follow the rules of the society in which they live" (ibid.).

Among the different kinds of communication within human and mediated communication, two elements are relevant in the discourse: intrapersonal communication and interpersonal communication. The first concept can shortly be defined as "the act of having an internal dialogue with oneself" (ibid.).

On the other hand, interpersonal communication exists between "a limited number of people" (p. 6) and it comprehends both verbal and, unlikely mediated communication, nonverbal communication. In fact, mediated communication lacks nonverbal elements such as "tone of voice, facial expression, and body language" (ibid.). Interpersonal communication is the kind of information transmission which is also used by the media and through the Internet. To be more specific, mediated interpersonal communication involves technological devices such as telephones, personal computers and other electronic devices through the Internet channels.

When it comes to channels of communication, it is relevant to notice that, in the passage from the communicator to the receiver, different channels can be used to put the message through; they will be seen in greater detail in the next paragraphs. For now, it is relevant to notice that a "technical or physical means is used" to transform "a message into signals that span time and space" (p. 7). Focus will be placed on mediated communication through mass media and social media. As suggested by Haddow and Haddow, the evolution of media and the diffusion of things such as smartphones and tablets have clearly encouraged the evolution of social media too. In fact, communication and the way communication is done have evolved too, especially in disaster-related situations:

> The Internet and the social media have radically and irreversibly transformed the communication landscape. […] The Internet has created a 'new' news landscape and changed forever the way and speed in which the news is produced and consumed. (Haddow and Haddow 2014: 19)

Moreover, it is not only the way of communicating in today's world which is changing, but also the media world itself, that is: "traditional media – newspapers, radio – and now television is on the decline" (p. 21). In such context, it is useful to try and give a more precise definition to the term *social media.* Haddow and Haddow define

social media as:

> Internet-based tools, technologies, and applications which enable interactive communications and content exchange between users who move back and forth easily between roles as content creators and consumers are all components of social media. (p. 25)

While they state that "traditional media primarily facilitates one-way information dissemination", they also suggest that social media such as social networks, blogs, digital mapping, video and photo sharing and, finally, wikis provide, on the other hand, "the platform for real-time two-way dialogue and interaction between organizations, the public, and individuals" (ibid.).

The actors involved in this new world are "user" and "participant" (Potts 2014: 8). While these terms might seem to have the same meaning, L. Potts cares to underline a basic difference: she uses " 'users' when discussing the use of a system's technology (e.g., single-task systems such as word processors and spreadsheets)". On the other hands, she uses " 'participant' " as a subclass of the previous, in order "to emphasize participatory and community-oriented users who leverage their activities as points of mediation (e.g. writing articles […])" (ibid.). The element of participation is, according to Potts (2014), essential in mediated communication, as much as it is for de Mooij (2014) and for Haddow and Haddow (2014).

Focus will now return to the concept of mediated communication and, more specifically, on mass communication. There are three main characteristics that can define it, paraphrasing Severin and Tankard (2010) in de Mooij (2014: 22): first, mass mediation targets a large and heterogeneous audience; second, each message is provided publicly and often simultaneously to the audience. Third, the source of the information works within a more complex kind of organization.

Mediated communication can also be distinguished between intentional and unintentional; as de Mooij suggests, in most of the cases, it is intentional. The main types of intentional mediated communication that are worth referring to are the following ones, by Schramm (1974: 34) in de Mooij (2014: 9): "informational, instructional, persuasive and entertaining". Concentrating on the aspects of information and persuasion, which are central in this study, there is a number of communication types that have specific purposes: as listed in the de Mooij (2014), these types are public communication, propaganda, development communication, health communication, advertising and public relations (p. 9).

Attention will be paid to public communication and public relations and, only partially, to propaganda and health communication. Public communication aims to inform the public and it "includes all sorts of non-commercial mass communication"; most importantly, it comprehends communications given by governments and what is called "political communication" (ibid.). Public relations are linked to the concept defined above, but they have a slightly different definition: they "involve managing relationships between organizations and publics" and use the mass media indirectly, "by employing good relations with journalists" (ibid.).

I will now shortly explain why propaganda and health communication are, even though only partially, inherent to this work. Propaganda, being "the technique of influencing human action by the manipulation of representations" (Severin and Tankard 2010 in de Mooij 2014: 9) in various forms ("spoken, written, pictorial or musical"), will be relevant when analysing the websites and the texts chosen, all related to flooding. Also, it can be suggested that the topic of health is obviously connected to the one of public security, in emergency situations in particular, as it is our case; health communication is indeed "a form of public communication concerned with public health" De Mooij (2014: 9, 10).

The concepts of intentionality and persuasion will now be highlighted. The Western communication theory is based on an interesting idea that leads to some reflections: not only is communication seen as a process and not a relationship, but also the concept of *intention* of communication constitutes the basis of this perspective (de Mooij, 2014). Moreover, persuasion itself "is assumed to be the conscious intention of the sender; it has a purpose and is expected to be effective" (p. 10). Both the intention and the effects that constitute the act of communication are, of course, influenced by the cultural backgrounds and the values of the subjects involved (ibid.).

As already suggested, communication cannot exist without information; indeed, communication was defined by Schramm (1974) in de Mooij (2014: 13) as "the sharing of an orientation toward a set of informational signs". To be more specific, information can be categorized in three types (de Mooij, 2014): first, "*syntactic information*" (p. 14), that is a "sequence of signals" elaborated by the one who sends the information; second, "*semantic information*" (ibid.), that is "the meaning of the signals" based on social conventions. Finally, "*pragmatic information* […] refers to the social use of information" (ibid.), which is linked to the effect of the syntactic and semantic information on the receivers. It is important to underline that the perception of this information varies from people to people and that this difference can be related and/or influenced by the kind of relation that the people have with the media and with the perception of their contents (ibid.).

Another concept that is bound to the ones of information and communication is *meaning:* a general definition will now be provided, in order to establish a correlation between information and special languages. The Merriam-Webster Online Dictionary defines meaning as "the thing one intends to convey/is conveyed especially by language" (www.merriam-webster.com). In the field of written communication in particular, a new protagonist comes into play: language, that is how we receive and transmit the information. In the following section (1.4), special languages and languages in the scientific and technical fields will be dealt with; my work on emergency texts will be focused on them.

1.5 Language and Languages

It is important to emphasise what can make communication possible, that is language. A precise and homogeneous definition of this term is not easy to find. In fact, as de Mooij (2014) suggests, this term has acquired different nuances in each of its possible definitions: it can be, first of all, "a tool for meaning making and meaning exchange" (p. 43) and, being so, it is perceived as something natural and common to all human beings. It can also be seen "as a medium or machine that transmits messages" from a person to another. It can have a "creative function" (ibid.), but it can also be "a condenser of cultural memory" (Lotman 1990 in de Mooij 2014: 43). Language is thought to have two functions: "external communication with other human beings" and "internal manipulation of inner thoughts" (Vygitsky, first quoted in Goody 1897 in de Mooij 2014: 43).

Moreover, language could be represented through the following "grammar" (de Mooij 2014: 43), or structure: first, there is "the formation and composition of words", that is morphology; second, "the formation and composition of phrases and sentences from these words", that is syntax; third, there are the "sound systems", that is phonology (ibid.).

Language is also the expression of values and the mirror of culture; as such, it can also influence culture (there are controversial opinions on this double influence). Moreover, as the values that influence or are influenced by language vary from country to country, so do the lexical items of each language in the world. As human beings, we cannot avoid feeling emotions; language is there to allow us to express them too.

It is relevant to notice that the word *language* in English, as it is for *Sprache* in German, can refer to two different terms that, even though they belong to the same context, have different meaning. In Italian *language* has two correspondents: '*linguaggio*' and '*lingua*'. Graffi and Scalise (2002) underline this difference and define the Italian terms as follows: '*linguaggio*' is "la capacità comune a tutti gli esseri umani di sviluppare un sistema di comunicazione dotato di […] caratteristiche proprie […] che lo distinguono da altri sistemi di comunicazione" (p. 24). These characteristics are discreetness and '*ricorsività*' (ibid.). '*Lingua*', on the other hand, is "la forma specifica che questo sistema di comunicazione assume nelle varie comunità" (ibid.), that are the different languages around the world. This distinction supports all the definitions listed by de Mooij (2014). It also helps to introduce the concept of *special language* and, in this specific study, the idea of "linguaggi specialistici" (Gotti: 1991) for scientific dissemination.

1.5.1 Special Languages and Scientific Dissemination

First of all, a definition of special language, also called LSP, that is Language for Special Purpose, is necessary. The linguist S. E. Wright (2011) uses the following definition:

> A special language is 'a language used in a subject field and characterized by the use of

> specific linguistic means of expression, [which] always include(s) subject specific terminology and phraseology and also may cover stylistic or syntactic features'. (ISO1087-1: 2000 in Wright 2011: 245)

As will be seen in Chapter 2 later, one should point out that special languages have a vocabulary which "is documented in specialized lexicography and terminological dictionaries and is supported today by electronic terminology-management systems" (Sager, McDonald, Dungworth 1980, Byrne 2006, Felber and Budin 1989 in Wright 2011: 245, 246).

Nonetheless, it is also important to underline that "special languages are not limited to vocabulary" (ibid.). In fact, translating and paraphrasing from Gotti (1991), the term *special language* can be referred to the use of language that experts and specialists do when mentioning to realities and concepts belonging to their field of study. The elements on which the development of this kind of language is based are the following: the type of user, the reality to which the language refers to and the special use of the language itself, that is the "uso specialistico che viene fatto del linguaggio" (p. 8).

Gotti introduces the concept of "poliedricità" (p. 9) of special languages: these kinds of languages can not only be distinguished on the basis of their lexicon and terminology, but also on context. In fact, the context is, together with the target reader, an *internal* element of these special languages. Experts discuss professional and specific topics in three main possible communication contexts: first, in the dialogue about issues related to their field of study, experts share the same knowledge and use the same lexicon. This situation produces, still according to Gotti (1991), a certain level of specificity in the use of the language: Widdowson (in Gotti 1991) calls it "scientific exposition" (p. 11). This is the case of communication through informative texts such as the fact sheets will be analysed later.

Second, experts might need to communicate their knowledge and some specific and important pieces of information to non-experts; they might use, in this case, special languages, but they could also provide explanations and definitions for the target public to understand as much as possible. This specific use of language is called "scientific instruction" (Gotti 1991: 11). The concept of "intento divulgativo" (p. 10, 11) finds its place in this background. Third, experts might choose and/or need to use simple common language in order to give clear and simple information about a technical topic, constantly referring to the everyday experiences of the common reader.

Moreover, contexts can be categorized into three different dimensions: the communicative dimension, the pragmatic dimension, and the semiotic dimension. Focus will be given to pragmatics, first: it "is the study of the purposes for which sentences are used, of the real world conditions under which a sentence may be appropriately used […]" (Stalnaker 1972: 380 in Hatim and Mason 1990: 95). Moreover, the semiotic dimension is defined as the "interactive dimension of context" Hatim and Mason (1990: 59): in fact, semiotic is "the science which studies signs in their natural habit – society" (p. 67). It is crucial to highlight the role that culture plays in all the phases presented above, as a fundamental component in communication.

As underlined by Gotti (1991), a special language is characterized by some specific characteristics; attention will be placed on a few of them: monoreferentiality (p. 17), emotional neutrality (p. 13), precision (p. 21), transparency (p. 22) and syntheticity (p. 25).

Hoffmann (1984) in Gotti (1991) provided a short list of other elements that could be taken into account when considering special languages: accuracy, simplicity and clarity (p. 13), information density and use of technical terms (ibid.). More generally, Shannon and Waver (1949) in Gotti (1991) suggest that special languages should "garantire accuratezza nella trasmissione del messaggio, precisione dei simboli linguistici per esprimere i significati desiderati" and, finally, the efficacy of the message that has to be communicated (p. 14).

The following sections will focus on the definitions of all the above-mentioned elements, to which, of course, there are some exceptions.

First, Bloomfield (1970) in Gotti (1991: 18) refers to monoreferentiality (p.17) with "univocità semantica": this means that, between the term of the special language and the concept that has to be transmitted, there is an " 'accordo di definizione' fisso". In a nutshell, the term cannot be replaced by a synonym, but only by one definition or one periphrasis, limited to the specific disciplinary field and context in which each term is used (p. 18).

Second, a special language is characterized by "non-emotività" (Gotti 1991: 20), as all special terms have denotative functions and not connotative ones. It is also true that this emotional neutrality (p. 13) only prevails when the aim of the text is informative only; "quando invece lo scopo pragmatico diventa quello persuasivo (tipico, per esempio, del messaggio pubblicitario […]) l'enfasi emotiva apparirà anche nei testi specialistici" (p. 21).

Third, "precision" (p. 21) is a characteristic of an immediate communication, and it is correlated to the concepts of accuracy, simplicity and clarity (p. 13). This concept is also linked to the idea of transparency (p. 13) mentioned above, that is the possibility of a "rapida decodificazione del significato di un termine tramite l'analisi della forma superficiale di esso" (p. 22). It is also true that, to paraphrase Lavoisier (1789) in Gotti (1991), special terms, defined as nomenclature in the field of chemistry (p. 22), should "rendere i fatti e le idee nella loro esattezza, senza soppressioni e senza aggiunte, in maniera del tutto speculare" (ibid.) and, one could suggest, without any ambiguity.

Finally, texts written in special languages are usually very synthetic: syntheticity (Gotti 1991: 25) is, in fact, the expression of concepts in the shortest and most minimalistic way possible in special texts, in the scientific domain in particular. This is usually done with the choice of a simple and basic syntax and with the use of expedients such as technical terms (p. 13), passive construction and neologisms. All of these elements provide, despite the brevity of the text, the sufficient information density (p. 13).

According to the British linguist Firth, "a restricted language serves circumscribed fields of experience or action and can be said to have its own grammar and dictionary",

as quoted in Gregory and Carroll (1978: 26). These fields can be otherwise called contexts. The notion of context returns once again: its three dimensions (see Hatim and Mason 1990: 57) will be clarified.

First of all, the idea of context is related to the one of register and register analysis. Wright thinks of register as something " 'polysemic' ": as quoted from Trosborg (1995: 5) in Wright (2011: 246), it can be defined as "an open-ended set of varieties (or styles) of language typical of occupational fields, such as […] medical language, technical language, etc.".

Register can also be "associated with field of discourse (Quirk 1985) or levels of formality: 'very formal, formal, neutral, informal, very informal' " (p. 246). It seems relevant to underline that:

> depending on situational factors and the projected target audience, a given concept may be designated by different terms reflecting different registers within the same special language. (Wright 2011: 247)

Moreover, register and its usage also partially depend on "text type" and "text variety (genre)" (ibid.). On the one hand, text types "reflect the *intention* of the author as a sender of a speech act (Sager et al. 1980: 24) or the *function* of the text itself" (p. 247).

The text types that are most commonly found in the fields of science and technology are the following: "informative", expressive", "appellative" or "persuasive" and "phatic" texts (p. 248). Quoting from Wright (2011), while it is true that "informative texts" are the ones that prevail in science, it is also true that phatic elements can be found in science, when texts aim to support, for example, ideas or controversial positions. On the other hand, "text varieties have been related to special language levels: theoretical, experimental, applied sciences – technology, manufacturing, consumption – advertising, etc." (ibid.).

Regarding science, the continuum of scientific and technical texts is represented in Figure 1.3 on the following page. With the words of Wright, this table distinguishes scientific texts on the basis of "presentation values, separating content-oriented texts with minimal print values from published works" (p. 249), where an important role is played by both the layout and the display (p. 251).

It is also noticeable that, always according to Wright:

> given the current sophistication of word-processing, web design, and desktop publishing applications, the gap between 'simple' reports and theses on the one hand and 'print-quality' articles and web pages on the other is rapidly narrowing. (2011: 251)

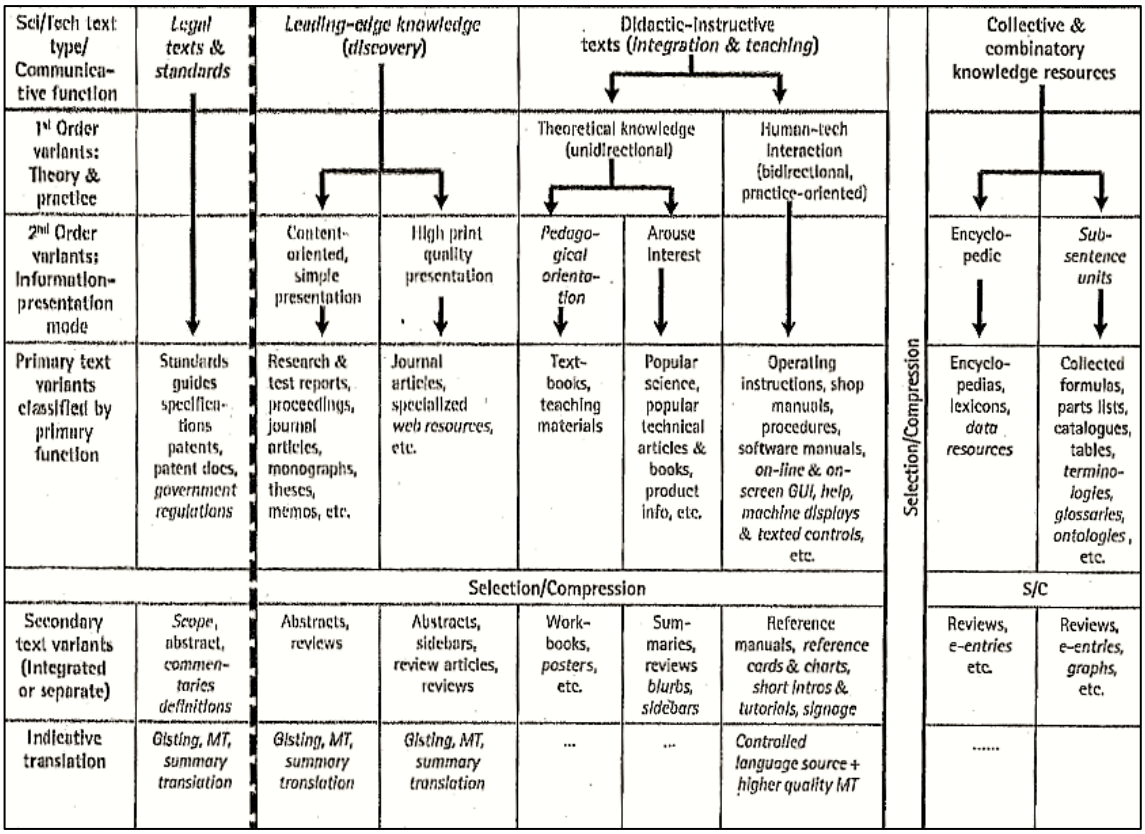


Figure 1.3 Continuum of scientific and technical texts; based on chart from Göpferich (1995) in Wright (2011: 250). Italics indicate instrumental modifications in the chart.

Based on the notion that there is a correlation between "ST" (Scientific and Technical) "register" (Gerzymisch-Arbogast H. in Wright 1993: 21, 22) and the function of the St text, research on ST register has been "systems- or *langue*-oriented, concentrating on such important lexical phenomena as frequency and distribution of terms and term-formation patterns resulting in neologisms and *faux amis"*. Moreover, as already mentioned, it has been studied that ST texts are usually characterised by long sentences, frequent nominalizations and much use of the passive (p. 22).

As quoted from Bühler (1934) in Wright (1993), it is true that ST texts, more specifically their structure, mirrors the text language functions: this "can be described as alternating sequences of 'given' and 'new' information" (p. 23). The terms "given" and "new" should be explained: information is "given" or "new" […] when the author of the text perceives such information as something that is, accordingly, "known" or "unknown" for the readers (p. 24). In fact, the authors' final aim is to get the message through to the reader, and they do it by organising it "in a way that makes" it "identifiable to the reader" (p. 23).

The following consideration should be underlined: not only the information and the way it is given is influenced by the culture of both the author and the reader, but also

> the implicit agreement between author and reader about how (1) the information that the author thinks is 'given' or known to the reader and (2) information that the author thinks is

> ‘new’ to the reader is proportioned” and “varies cross-culturally”. (Grice 1975: 46 in Wright 1993: 24, 25)

There are two main forms of the so called “reader-author contract” (ibid.), that is the relationship between them: on the one hand, in the “reader-oriented contracts” the authors aim to get “the reader’s ‘empathy’ towards the information presented” (p. 25). Their attention is focused on establishing a link between the “ ‘new’ information” and a situation which is familiar to the readers, thus creating what Gerzymisch-Arbogast called “closeness” (ibid.). On the other hand, “author-oriented register types” are focused on the “ ‘new’ message”, which is part of the competence and knowledge of the authors: they aim “to convince the reader of the importance of the ‘new’ message” (ibid.).

As suggested by Garzone (2006) scientific reporters and experts aim to the construction of their “average readers” (p. 88). More specifically,

> there are specific relations of power between writers and addresses, and a gap between them in terms of pre-existing knowledge, beliefs and shared values. In each case, as journalists address their ‘particular’ audience (Perelman, Olbrechts-Tyteca 1958), they ‘construct’ it by presupposing certain sets of values, shared beliefs and pre-existing background knowledge (ibid.).

Emphasis should now be placed on the two main perspectives that lead to the creation and the communication of information, in a ST context in particular, as these notions could be useful in my later work.

The first perspective is, quoting from Wright (1993), a dynamic macro-level of Scientific and Technical texts, called “Information Dynamics” (p. 26): it is the description of how “authors proportion and sequence the ‘given’ and the ‘new’ information they want to convey” (ibid.). It consists of three main steps: the choice of the title, the process of initiating and the one of sequencing. Titles basically have their own conventions: they provide informative background, that is the information on what the text is about and on the attitude of the authors towards the text itself; they should also attract the readers’ attention, in order to induce them to continue their reading. Then, “initiating refers to the type of information presented […] at the beginning of a whole text or chapter” (ibid.); it has the same function of the titles. Finally, “information sequencing” is the way the information is presented throughout the text; it follows that chronological order or other rules are determined by cultural norms.

The second perspective is the static micro-level of ST texts, called “Information Packaging” (p. 31): “it is a static parameter” which measures the way in which the information is provided to the readers in a specific part, or “stage” in the text. It may include the passage from a certain degree of formal register to an informal one according to the reader the text is written for, the use of examples, references and the use of specific terminology and “terminological co-reference” (ibid.).

Moreover, in the field of special languages, a tendency known as internationalization has spread over the last few years:

> i vari linguaggi specialistici si arricchiscono […] sempre più di internazionalismi, vale a dire di termini mistilingui che utilizzano lessico di origine straniera, adattato in genere alle lingue riceventi. (Gotti 1991: IX)

It is worth dedicating a short reflection to an idea that is spreading more and more not only throughout the academic world, but also in everyday common speech and life: English has become and is increasingly becoming "the hegemonic language in science" Wright (2011: 256). English is in fact called "the global language" (Crystal, 2002: 1). According to D. Crystal, this concept can be explained as follows: "A language achieves a genuinely global status when it develops a special role that is recognized in every country" (p. 3).

English is, due to political, economic and, most of all, historical reasons, the predominant language of globalization and of scientific dissemination; it is the language of power. In fact, as Wright (2011) underlines that English has been adopted as the working language all over the world. The reason for this is the following:

> English today is the predominant language for leading-edge science. Not only are most scholarly articles originally published in English, but a relative low percentage of these articles are translated into other languages. (p. 256, 257)

Moreover, it is also true that there are a lot of differences, both in quality and in quantity at all linguistic levels, between the English which is used in common speech and the English used in technical contexts (Bareš 1972: 129 in Gotti 1991: 1).

1.5.1.1 Popularization of Scientific and Technical Texts

It is significant, at this point, to introduce one of the central concepts in our discourse: *popularization*. It finds its origins in the Victorian Age, more specifically from the Victorian patronizing "do-goodism" and detachment that result with being "irrelevant to today's needs" (Goldsmith 1986: 14 in Garzone 2006: 81). In fact, being, according to Garzone (2006), "a largely unexplored territory […] carried out in a wide range of different channels" (p. 101), popularization needs to be revised.

The basic principle of this tendency is that specialized knowledge, science and technology in particular, should be spread and understood by all contemporary society, and not only by experts and by erudite people. The world of discoveries and progress is evolving constantly and rapidly and the public needs to be constantly updated. Popularization should involve different communication events such as mass-media, exhibitions and books, and provide "lay versions of scientific knowledge, as well as opinions and ideologies […] among the public at large" (p. 81).

Following the same line of thought, Wright (2011) highlights the need, even though only in some situations (not specified), to "create whole sets of terminology in order to communicate basic science at even the most rudimentary level" (p. 259). Also, to return to Garzone (2006), the writer needs to use some discursive practices for non-specialized readers: since these texts involve a form of re-writing" (p. 87), they can be compared to

translations.

There is more than one reason for the desire of popularized scientific knowledge: first, the "*practical argument" (*Henriksen and Frøyland 2000: 393 in Garzone 2006: 83), that is the need to for a basic understanding and knowledge of technological and scientific matters in order to manage with daily life. Second, the "*democratic (civil) argument"*, that is the possibility to understand and deal with today's modern society's scientific questions. Third, "*the cultural argument*", based on the notion that science is culture and everybody should have access to it and, last but not least, the "*economic (professional) argument*": "a scientifically literate work-force is", quoting Allan (2002: 55) in Garzone (2006: 83), "necessary for a sound and flourishing economy".

There is another significant consideration to make; it was inspired by Garzone (2006: 83): as previously mentioned, in today's society the demand for constant and accessible information is more and more undeniable. Issues such as climate change, food and disease crises and natural disasters are most of all managed by experts and reported worldwide by the media. While people should, of course, trust experts and the information given by the authorities, they should also be able to assert their own judgement and be prepared for a critical understanding of the facts and, most of all, conscious of the possible problems and solutions that the above mentioned agents have proposed.

In order to achieve balance between the experts delivering information and the public receiving it, what can be called bonding should be established. As suggested in one of the previous paragraphs, a "reader-author contract" needs to be sealed: writers should use some linguistic and discursive strategies, such as "different forms of definitions, reformulation and explanation terms" (Garzone 2006: 87); they should also remember that the public might have a limited shared knowledge or even no previous knowledge at all.

1.5.1.2 Popularization and Globalization

In order to create a connection between the idea of English as a global language and the need for popularization, the concept of globalization needs to be introduced. The definition of globalization by Robertson (1990) in de Mooij (2014) seems quite essential but complete: it is "the concrete structuration of the world as a whole" (p. 27).

Globalization has different meanings and applies to the most different fields, from business, to the world of culture and to media. In all of these contexts, nevertheless, globalization maintains one unchanged element: "interindependence" Giddens A. (2005) in de Mooij (2014: 27). In fact, "we have started to be much more dependent on other people than ever before, and part of the reason is that we are constantly in communication with them" (ibid.).

In the light of this knowledge, another concept which is strictly linked to the one of language, will be introduced: "hegemony" (De Mooij 2014: 24). This term was introduced by the philosopher A. Gramsci, who suggested the idea of "*cultural*

hegemony" as "the complex ideas used by social groups to assert their legitimacy and authority". On the basis of this supremacy and on consent, ideological order can be created (ibid.).

Different forms of hegemony have developed during the centuries. Today, as de Mooij proposes, "the popular press and television", as much as all other media, "represent mass culture and, at the same time, shape an identity of the masses, with mutual consent" (p. 25). It is on the basis of these suggestions that the following sections will concentrate on the real communication channels used by the Italian Protezione Civile and by the American FEMA to provide their information, and, in short, to communicate.

1.6 Communication and the Media

This section will start with the assumption that information is not only communicated person-to-person, but everyone can be considered both a producer of information and a consumer (Haddow and Haddow 2014: xvii). In fact, the international and intercultural movement and spread of information that de Mooij (2014) calls "the global [..] flow of information" (p. 28) is produced and spread not only by the experts and by the agencies in charge of this communication, but also by the people who receive and consequently use this information in their everyday life.

As already suggested, the media play an important, if not essential, role in communication, and it is an active one: in fact, according to Garzone (2006), "The mass media are not passive mediators of scientific knowledge, but actively contribute in the production of new common knowledge and opinions about science and scientists" (p. 84). Of course, this is true in different fields, from scientific knowledge, to fields such as political issues, economic and health problems and gossip.

The anthropologist A. Appadurai (1990), quoted by de Mooij (2014), studied the global flow of information and categorised the process into five dimensions, or scapes: ethnoscapes, technoscapes, finanscapes, ideoscapes and mediascapes. Attention will be placed on the latest, mediascapes: they are represented by the "distribution of the capabilities to produce and disseminate information (newspapers, magazines, television stations, the Internet) and […] the images of the world created by these media" (p. 28). Moreover, the quantity of information is so wide that the distinction between real and unreal, or fictional scapes is not so clear, and the question of trust comes into play (p. 29).

It seems appropriate to point out that, as underlined by Haddow and Haddow (2014) the las five years have completely changed communication on and in disaster situations. In fact:

> the explosion of Internet and social media tools, in new technologies and applications, and in public access to information instantly through smartphones and tablets changed the way news is gathered, distributed, and used. It has also blurred the lines between the reporter and the audience, between the disaster agency and the public. (2014: xvii)

In such a chaos, the need for effective communication is evident, as it is evident that there needs to be team work among all the components involved, that is individuals and communities (p. 15). The use of the media should be used as a central component in the dialogue between official organisations and volunteers, and common citizens; the media should allow to "meet people where they are, using tools and platforms they are already familiar with" (ibid.). Moreover, information should allow to take action for a "real-world impact"; only thus the authorities providing the information could contact and help the people involved in emergencies more quickly, and make communication effective. It is worth mentioning, quoting Haddow and Haddow (2014), how the media and, most of all, "the mix of old and new media" (p. 47) can contribute to improve emergency management actions and to save properties and, most of all, people's life:

> Gone forever is the old, one- way, top-down communications model government agencies once used to control the release of filtered, often dated information to the public – though a public information officer to traditional media outlets. (p. 53)

In fact, today people do not learn about a disaster after it has occurred: this model has been replaced by an "interactive exchange" that gave power to citizens by creating information networks that they themselves can use (p. 55). In the words of the experts, citizens can see "how the 'sausage is made'" in real time" (p. 35) and act accordingly. This new news gathering process will continue to evolve together with technology itself. Indeed, "these technologies create new ways for citizens to be heard, governments to be held accountable, and the state to answer the failure of governance" (p. 56).

Moreover, as a result of the media having become, quoting de Mooij (2014), "an integral part of daily activities, personal relationships […] and media" (p. 243), the very first news of a disaster often comes from the voice of the citizens themselves; as a consequence:

> information in the hands of citizens continues to instil fear and loathing in the minds of those who wish to manufacture public opinion to their benefit by the careful selection and publication of information. (Haddow and Haddow 2014: 57)

In a few words, the accuracy of information remains a problem (p. 85). In the following paragraphs, focus will be on communication channels, with specific reference to the channels used by the American FEMA and by the Italian Protezione Civile.

1.6.1 Communication Channels

De Mooij (2006) argues that, quoting from Jensen (1995), "mass communication is" constituted, philosophically speaking, by "a set of aesthetic products", or machines, "and an everyday process or social practice" (p. 11).

A definition of communication channel could now be useful. When referring to mass communication, the word channel indicates some specific means of communication. These channels can be distinguished between traditional media, that are

press, radio and television, and modern, or "hybrid" (De Mooij 2014: 243) media, that are mobile phones and the World Wide Web, commonly known as the Internet, which is directly or indirectly linked to all of the channels mentioned before it (p. 244).

In each of the following paragraphs, the reader will be able to understand the use of all the above mentioned channels, used both by FEMA and Protezione Civile: firstly, a very brief introduction to each channel will be provided. Secondly, the use of each of these channels will be studied, first for the FEMA and second for Protezione Civile.

1.6.1.1 Press

Press can be defined as a "written medium, the medium for literate cultures" (p. 244). This term usually refers to real and printed newspapers and to news magazines. However, as pointed out by M. G. Busà (2014), in today's modern society, publishers of printed newspapers and magazines also manage their online versions, and "maintain sites issuing news that is similar, in both presentation and content, to that of their printed papers" (p. 14).

FEMA and Press

FEMA provides a weekly Technical Bulletin. It was created on the 26th of July 2013, it is issued by the FEMA Mitigation Directorate and it focuses on the NFIP, that is the National Flood Insurance Program. These bulletins, according to the FEMA's *Technical Bulletin 0*:

> are intended for use primarily by State and local officials responsible for interpreting and enforcing NFIP regulations and by members of the development community, such as design professionals and builders. (March 2009: 1)

They can be downloaded from the FEMA website. People can also subscribe to the official FEMA website: as suggested in the *Technical Bulletin 0*, they can order it from the FEMA Distribution Centre by calling or by faxing, after having filled in the Order form uploaded online. For more precise instructions, the reader can see the document in the notes. FEMA publications are also available in paper format in different public libraries.

Protezione Civile and Press

Protezione Civile manages an online independent newspaper which is called *Il Giornale della Protezione Civile.it*. It provides information on Italy and on the rest of the world, focusing on emergency management, environmental catastrophes and human migration. Protezione Civile also possesses a printed periodical magazine entitled *Protezione Civile*; it was first published on 6th December 2010 and its main aim is "approfondire – con taglio divulgativo – temi di prevenzione, previsione e gestione

delle emergenze" (www.protezionecivile.org). There is also an online magazine, first edited in 2013: it targets both the voluntary workers and the citizens that wish to know more about the work done by Protezione Civile.

1.6.1.2 Radio

Ever since its invention in the XIX century, radio has always been one of the main sources of information, together with newspapers. It is a source of news, but it also provides a lot of entertainment programs that people find pleasing to listen to in their leisure time. For what concerns news, the radio has always been an important source for it; it is also an important instrument of communication in difficult and emergency situations, thanks to its wide range of frequencies.

FEMA and Radio

FEMA provides information on emergency situations and instructions on what to do before, during and after a disaster through advertisements on the radio. It uses some specific frequencies in order to communicate with the experts and the authorities involved; the list of these frequencies in available online and it varies from State to State in the U.S.A. Specific information on emergency communication through the radio (SHAred RESources High Frequency Radio Program in www.dhs.gov). Moreover, FEMA provides some podcasts online; they are available on the FEMA official website, in the Media-library section (www.fema.gov) and they can be downloaded for free.

Protezione Civile and Radio

Protezione Civile uses the radio in two ways: as underlined in the document *Protocollo d'intesa Tra il Ministero dello Sviluppo Economico Dipartimento per le Comunicazioni e la Presidenza del Consiglio dei Ministri Dipartimento della protezione civile* re-edited on 29th July 2011, there are two main types of frequencies to be used in an emergency context:

- "frequenze a copertura nazionale" to be used exclusively by the Presidenza del Consiglio dei Ministri and the Dipartimento della protezione civile "per lo svolgimento dei propri compiti istituzionali" (p. 4).
- "frequenze a copertura regionale/semi-regionale o provinciale ad esclusiva finalità di protezione civile" to be used to communicate among "le strutture istituzionali che concorrono alla gestione delle emergenze" and the "strutture di volontariato" (ibid.).

1.6.1.3 Television

In the words of de Mooij (2014: 246), "television viewing varies by country, but everywhere TV plays a significant role in the leisure activities of people"; the way

people watch TV around the world is indeed influenced by culture. Television is a channel that has reached and keeps reaching a wide spectrum of public, providing programs for everyone, such as films, cartoons, documentaries and entertainment programs. It is also one of the main channels of daily information and news through various TV networks.

FEMA and Television

FEMA offers a wide range of TV commercials and spots, created with the aim of arousing the conscience of citizens and inform and prepare them for all kinds of emergency. As focus will be (also) on children and families as target audiences, the TV spot *The House* is worth mentioning; it can be found online on www.ispot.tv.

Protezione Civile and Television

With the supervision of Presidenza del Consiglio dei Ministri, Protezione Civile created some commercials in the form of films and in the form of cartoons. These spots aim to inform the public on what the organization of Protezione Civile is, on what it can do in emergency situations and, most importantly, on what people can do to face a disaster. For the same reason mentioned for FEMA and television, the TV spot *Emergenza Alluvione* (www.protezionecivile.gov.it) is an example of commercial that can be worth seeing

1.6.1.4 The Mobile Phone and the Internet

In the words of de Mooij (2014: 250), “online communication is a hybrid form between interpersonal and mass communication, as well as between oral and written communication”. The mobile phone has become a medium for interpersonal communication, both orally and in the written form, as much as the Internet does. Moreover, mobile phones use the Internet as a way of communicating using, for example, e-mails, blogs and tweets. The Internet is, in fact, “a global communication channel, with the potential to reach people anywhere in the world” (p. 251).

FEMA, Mobile Phones and the Internet

In the words of Haddow and Haddow (2014: xvii) “FEMA” has “embraced social media”. In fact, especially in the last years, FEMA has become very active in the Internet world and it provides a lot of services, or contacts:

- FEMA has got a rich and well organized official webpage. Moreover there is, linked to it, a webpage for children and families (Ready.gov Kids) that I have used as a source for the documents that will be analysed later in this work;
- FEMA is very active in the social media too: it has got a Facebook page, a

LinkedIn page, an Instagram account, a Twitter account and a YouTube channel where basic information on emergency management, updates, photos and videos is provided. The necessity and the desire for a constant and engaging relationship with people is evident;

- there is a FEMA App available for free for Apple, Android, and Blackberry mobile devices; it provides weather alerts, gives suggestions and instructions on how to prepare for emergencies and allow the users to upload and share their videos and photos in order to help first responders. There is also the Commercial Mobile Alert System (CMAS) that provides Wireless Emergency Alerts (EMA), that are messages by authorised government authorities to mobile phones in emergency situations. It has got a special tone and vibration and it is free.

Protezione Civile, Mobile Phones and the Internet

In recent years, Protezione Civile has indeed engaged in more than one relationship with the world of the Internet:

- it has got a rich and well organized official webpage. Moreover there is, linked to it, a webpage for children and families (www.civilino.it);

- *Il Giornale della Protezione Civile* has got its own official Facebook page, its own Instagram account and its own Twitter account and a YouTube channel; moreover, almost every Italian region has its own Protezione Civile Facebook page. Protezione Civile has got a LinkedIn page. Even though it seems to be less present on the social media than FEMA, Protezione Civile plays an important and developing role in its relationship with the public.

The Italian Protezione Civile has also created a cartoon for children and their families in 2005, in collaboration with the Protezione Civile in Regione Umbria: it is called *Civilino* and it can be seen on YouTube and followed on Facebook, on Twitter and on Instagram. Some DVDs are also available for television and it is very useful to talk about emergency management in schools. One of the documents that will be analysed later is taken from the website www.civilino.it.

Protezione Civile nationally promotes an emergency awareness campaign called “Io Non Rischio”; it was created in 2011 and focuses mainly on natural hazards such as floods, earthquakes and tsunamis. It has its own Facebook page, a LinkedIn profile, its Instagram and Twitter accounts and a YouTube channel;

- there is an App called *Protezione Civile* for Android downloadable from Google Play: it provides up to date information on all types of emergency situation and natural hazard, assistance and answers to questions and doubts; it focuses mainly on two main aspects of Protezione Civile: “gestione dell’emergenza da parte degli operatori e risposta dei cittadini alla calamità” (play.google.com).

1.6.1.5 Written Documents: Fact Sheets

In the following section, the notion of fact sheets will shortly be introduced. A fact sheet is simply defined as "a written document containing information for the public" (www.dictionatycambrige.org) about some particular issues. This type of document is the perfect example of the indisputable role of modern media in our daily life, and of the way the press still is an important channel in communication today.

As already specified, interest is placed on emergency management and disasters. Therefore, the documents I will analyse later (see Chapters 3, 4 and 5) provide information on emergency management, and on the disasters caused by floods in particular. The public for which these documents have been produced can be categorized into two categories: first, experts and officials in emergency management; second, the general public, that is non experts, families and children in particular.

The list of the chosen documents will be provided in the Methods section is Chapter 3. At the moment, it is relevant for the reader to have a general idea of what fact sheets are from the point of view of "ST texts" (Scientific and Technical Texts). Returning to Figure 1.3 in Section 1.5, it can be suggested that, on the one hand, informative fact sheets for experts:

- partially belong to *Legal texts and standards*, as they are *guides* for experts in emergency management and they are provided by governments as *government regulations*; they also provide definitions;
- are *leading-edge knowledge (discovery) texts*, as they are also based on research and test reports and on specialized web resources.

Fact sheets for non-experts, that is for the general public, for families and for children, on the other hand:

- are *didactic-instructing texts (integration & teaching)*: they are sometimes used in schools for a pedagogical aim; most of all, they are *popular science* and *popular technical articles* and *books* created to arise interest. Moreover, focusing on the Human-tech interaction aspect, they are, among others, *operating instructions and procedures*; therefore, as mentioned in the last box of the very same column, they are characterized by "controlled language".

This chapter focused on emergency management and its fundamental relation with communication. Focus was given to emergency situations, the ones caused by floods in particular: the process of emergency management was introduced, and its four phases were presented in relation with communication. Communication was defined and described; attention was placed on mediated communication in particular.

Then, focus was on special languages and scientific dissemination; the central concept of popularization was introduced. Finally, communication channels were presented, and attention was placed on the one used by the American FEMA and the Italian Protezione Civile. In conclusion, fact sheets were introduced as examples of the undeniable role of the media in modern society and in our daily life communication.

Chapter 2

Terminology

2.1 Introduction

Since their initial development in the 1930s, terminology studies have acquired importance in the field of language-related scientific disciplines. Terminology, defined as "the lexical components of specialized languages" (Geeraerts in Kockaert and Steurs 2015: xvii), has known continuous changes both in theory and in practice, and its development is still in progress. The interest in terminology emerged out of the need to respond to the development and the spread of new technologies, and the consequent need for new terms for naming new concepts in science.

It is precisely from the field of scientific and technological development that terminology spread to other domains. Among these domains, emergency-related terminology is one of the most challenging: emergency-related studies are improving not only emergency management procedures and solutions, but also their communication methods and contents. In today's multicultural and multilingual world, emergency-related terminology studies aim to create a connection between emergency situations and the people involved, both experts and non-experts, with the essential aim of saving lives. This is the context and purpose of the present study.

This chapter is organised as follows: first, a brief historical and linguistic overview of terminology studies will be delineated; definitions of terminology will be provided, thus highlighting its challenging complexity. Second, the main concepts belonging to today's terminology will be introduced and explained; attention will be given to two approaches in particular, one more theoretical and one more practical. On the one hand, an overview of contemporary "Sociocognitive Terminology" will be given, as a new approach developed by the Belgian linguist Temmerman (2000: 34). On the other, focus will be on terminology in today's digital society: terminological projects (TP) will be introduced, and their main characteristics and issues will be presented. Finally, terminology in emergency management situations will be considered. Project Slándáil can be considered an example of the increasingly important use of disaster-related terminology in emergencies. I will conclude the chapter with an explanation of the reasons why the Slándáil Terminology Wiki can be considered not only a relevant example of terminology study, but also a substantial piece of this work.

2.2 Defining Terminology

Starting from the assumption that terminology studies are a challenging and complex research field in continuous development, it is evident that the concept of

terminology itself is not easy to define. Auger (Auger 1998 in Cabré 1999) classifies the history of the development of terminology into four different periods: the initial period, the origins, goes from 1930 to 1960. It is the phase in which the first traditional ideas and approaches to terminology were developed. The second period, called "the structuring of the field" (p. 5), goes from 1960 to 1975: in these years, technology and computers were created, together with the first terminology processing procedures and the first databanks. The third period, from 1975 to 1985, is the period of main development for terminology, which became the subject of language projects all over the world. Finally, the fourth period goes from 1985 to the present, and terminology has finally become, as stated earlier, an important, if not fundamental, component in today's society (ibid.).

According to the classical approach and, more specifically, to one of the fathers of modern terminology, E. Wüster (1898 - 1977), terminology is a scientific discipline which aims to categorize reality by providing specific terms for specific concepts. Not only the Vienna school, but also the Czech school and the Soviet School based their research in terminology on concepts, that are, evidently, the starting point in traditional studies: the concept is the idea that has to be conveyed by the term, it is the meaning of the term itself (Temmerman 2000: 36). In fact, traditionalists believed that "one can know the concept, which exists objectively, define it, and name it with a term" (p. 40).

Cabré (1999: 7) suggests that the previously mentioned traditional schools were based on the following approaches: according to the first approach, terminology is a subject that is both autonomous and interdisciplinary in scientific and technical fields. The second approach sees terminology linked to philosophy: it allows the classification of the world through terms and the consequent understanding of the world. The third approach is a linguistic approach, in which terminology becomes a component of language; more specifically, terminology is "a subcomponent of a language's lexicon and special languages" are "subsystems of general language" (p. 7). The Vienna school in particular was based on the following five principles: the onomasiological perspective, the idea that concepts are clear-cut, the three types of terminological definition, the univocity principle, and the synchrony principle. Since the aim of this section is to provide a very brief introduction on the history of terminology, attention will be placed only on the last two principles. The first principle is univocity, which is when "a concept is referred to by one term and one term only designates one concept" (Temmerman 2000: 16). Related to it is the second principle, synchrony, which is when a concept is permanently assigned to a term, and vice versa.

From the considerations made above, it appears that traditional terminology aims to give a precise definition of a concept through terms, in the name of a unified standardisation of language. It could be argued that the scientific method on which traditional terminology was based is often in contrast with the natural flexibility of language. There are two important elements that traditional approaches did not include in their studies: "language development and language evolution" (Temmerman 2000: 14). Traditional Terminology conceived terminology as something adapted to the

linguistic system; it sees terms as passive actors that transpose an idea or a concept into language. But language is, in its very essence, communication. As Cabré (1999) puts it, terminology should not be seen as "an end to itself" (p. 9). It serves the fields of science, of technology and, most of all, of communication; it involves real social needs and aims to improve communication first among experts and specialists, and second among specialists and non-experts.

In addition, Cabré seems to provide the perfect combination between the role and the dimension of terminology: terminology for "end-users", that is for direct or intermediary producers and receivers, is composed of a set of communication units. Direct users are specialists, who need to conceptualize and standardize their subjects of study; intermediary users are, for example, interpreters or translators who need it in order to facilitate communication to others. On the other hand, terminology for language specialists, that is terminologists, is a target to be reached: "their work", in fact, "consists of compilation, description, processing and creation of terms" (p. 12). Based on the previous considerations, one could therefore suggest that, if language is communication, and it evolves and develops in time, concepts too can evolve, as much as their designation (Temmerman 2000: 15).

From the considerations made above, it appears that providing a precise and exhaustive terminological definition to an entity is not easy. To define something means, basically, to explain its meaning. Hacken suggests that the definition of a term involves the creation of a new object which has an abstract dimension and "that exists independently of speakers' linguistic competence" (Hacken in Kockaert and Steurs 2015: 3, 5). This intuition suggests one of the main problems of terminology and terminological definitions, that is the fact that concepts, both natural and relevant, have a basic common element: prototypes. While it is true that strict rules and clear boundaries are needed when defining terms belonging to scientific and technical fields, since their value depends on such precise definitions, it is also true that some concepts already belong to people's mind and competence, and their boundaries are "fuzzy" (p. 3).

The distinction between terms and words can help clarify the problem and delimit the lines of a definition of terminology: words are linguistic units that convey a meaning; this meaning can be vague and, most importantly, it can change according to the communicative pragmatic situation in which the speakers are involved. The discipline that studies words is linguistics, more specifically lexicography. A term is, on the other hand, "a linguistic unit delimited by the concept it conveys" (Depecker in Kockaert and Steurs 2015: 36); it belongs to the scientific and technical domain of terminology and it is, or should be, precise and strict. Some experts even suggest that terminology is a sub-field of lexicography itself. This suggestion is supported by the fact that terms are, linguistically speaking, words, and they are the formal realisation of concepts into signs.

It is in this regard that one of the main purposes of terminology finds its place: the creation of the perfect connection between "sign", "concept" and "object" (p. 36) in

technical and scientific contexts. More specifically, terminology studies aim to identify a specific "concept" (unit of thought) and represent it through a specific "sign" (linguistic representation) which undoubtedly identifies one and only one "object" (entity that has to be described). Nonetheless, the boundaries between terms and words are not always so neat: experts suggest that some words can also be used as terms in some specific technical contexts; some also suggest that words can become terms through the process of "technicity" (p. 38). "Technicity" can be defined as follows:

> the process for a word or group of words to acquire a technical or scientific sense in special contexts or situations […] as unit of language for special purposes (LSP), […] a bundle of units – terms, words, expressions – and combination rules, which comprises a whole language used in a domain of knowledge. (p. 38, 39)

The following definition completes the one above: terminology can also be defined as "an interdisciplinary field of enquiry whose prime object of study are the specialized words occurring in natural language which belong to specific domains of usage" (Cabré 1999: 32).

As can be seen in the quotations above, the concept of LSP returns (see Chapter 2). Special languages and their vocabulary belong to general language and change according to the use that their linguistic communities make of them, depending on expectations, on social conventions and on possible limitations, including the context, the degree of formality and informality to which the terms belong and the predilection of a form rather than another (Wright 2011: 246). Moreover, it is also true that special languages and their vocabulary *are* language, and, as such, they are not fixed and immutable forms in space and time.

Special languages, and, in this case, disaster-related terminology, involve the subject fields of emergency management, but they should not be considered on the basis of simple necessary and sufficient conditions. The following quotation from Temmerman (2000) perfectly summarizes the point: "the understanding of the world and of the words used to communicate about the world is based on human experience" (p. 1, 2).

Since each concept is based, once again, on prototypes, and the way we perceive and categorise the world is part of our own experience, one might suggest that terminology itself should therefore be studied in what Temmerman calls the sociocognitive perspective. This approach belongs to the fourth period of the development history of terminology studies, and the following sections will be devoted to it.

2.3 Sociocognitive Terminology

Not only is the discipline of terminology difficult to define and its considerations vary; terminology also needs to find new, alternative values and approaches for its description and development. In support of these observations, Temmerman coined the

term “Sociocognitive Terminology” (2000: 34) as a new approach in the study of terminology. Her theory start from the assumption that terminology has two main components: its subject matter is the “vocabulary of specialised (spoken and written) discourse” (p. 2), technically called LSPs. The object of study is, on the other hand, “the identification, collection and description of terms which can be applied to the purpose of qualitatively enhancing communication” (ibid.).

2.3.1 Understanding Terminology

In this section, a few basic notions will be proposed, in order to clarify the notion of terminology itself and, more specifically, of “Sociocognitive Terminology” (Temmerman 2000: 34). As previously suggested, concepts are the starting point in traditional terminological studies: they can be traditionally defined as “the unit of thought constituted through abstraction” (p. 223). Temmerman, on the other hand, takes the term itself as a starting point. The expert pays attention not only to the understanding of the lexical elements in one or more texts, but also of the “extra-linguistic conceivable reality” (p. 40), that is the world around the term itself.

The main sources of information about the words of a language are, indeed, texts. Texts are the products of individuals, and they are both a testimony and a proof of how the words of a language (“*parole*”) (ibid.) are understood. More specifically, they are the proof of how their authors conceive reality, how they perceive and use the language in order to represent it and, finally, how new terms can be created. Moreover, starting from the assumption that language is in constant evolution, and that texts are the testimony and the representation of language itself, texts can also suggest the history of the evolution of the meaning of each term (p. 37). Texts provide what is called “encyclopaedic information” (p. 36), which is the context and the world, or communicative environment, around each word (and term) in a text. As the readers may notice, texts and textual information appear fundamental in terminology: texts involve the meaning of each term in them, their historical information and the way these terms are perceived and understood in that specific context.

All the elements mentioned above contribute to another elementary notion in the sociocognitive perspective: the understating of language. Each word, to paraphrase Temmerman (2000: 42), does not simply have a meaning in an objective sense, because its meaning is part of the linguistic communication process and depends on an external reality, the world, which should not be ignored or misunderstood. If the aim of terminology is to represent and understand the world through terms, and if these terms cannot exists on their own, but only in their contexts, then it appears clear that the study of texts as “communicative environment of textual information” (p. 37) is fundamental.

The sociocognitive perspective aims to provide new propositions in terminology studies, and its novelty and importance is on the fact that it does not consider terms as mere expressions of fixed and one-way concepts: concepts are, in fact, units of understanding, as much as categories are. Some basic principles need to be taken into

consideration when dealing with units of understanding: first, understanding is a process which evolves in time; second, "each unit of understanding can be looked at from a variety of vantage points" (p. 74). Finally, the intention of the person who sends the message will influence both the contempt and the perception of the unit. The hypothesis that supports these principles is that terms are entities which have a meaning, and this meaning varies and, most importantly, evolve together with "the world and human understanding" (p. 15).

It is starting from this idea that the following considerations can be made: language is a means of communication, and it is a real and constantly changing interaction among worlds and among people in today's multilingual and multicultural society. The field of terminology itself belongs to special languages, that are part of language, and it is the expression, in terms, of concepts. Language evolves and develops through time, as much as terminology does: therefore, terminology should always be considered inside a context, and terminology studies should not remain fixed on the concept of standardization. On the contrary, they should deal with language "both sociologically and historically" (ibid.) and the elements of encyclopaedic information and human understanding should not be forgotten.

2.3.2 The Two Theoretical Bases of Sociocognitive Terminology

The two theoretical backgrounds upon which the Sociocognitive Terminology is based will now be introduced: they are hermeneutics and cognitivism in semantics.

2.3.2.1 Hermeneutics

The first theoretical basis upon which Sociocognitive Terminology relies is the theory of hermeneutics, which takes texts as main object of study. The definition provided by Geeraerts (1995: 184) in Temmerman (2000: 54) can help understand this concept: "hermeneutics is a philosophical tradition, inaugurated by Wilhelm Dilthey at the end of the previous century, which takes interpretation to be the basic methodological concept of human sciences". Sociocognitive researchers focus on text analysis in order to study the process of "categorization and its intricate relation with language" (ibid).

It was hermeneutics that criticised and opened a new debate on the traditional ideas of rationalism and structuralism. Short definitions of these concepts will be provided, in order to support one of the basic principles of the sociocognitive approach, which is the dynamism of language. The theory of rationalism perceives reason as "the Truth of things" (p. 55); language is the rational means that allows the perfect representation of the world in its very essence. Structuralism, on the other hand, conceives language as a system (*langue*) that finds its realization in writing and in speech through *parole*. It is the structure of language itself that allows to think in a meaningful way; and it is by studying this structure that academics tried to highlight what the rules at the basis of

language and language making are, and understand, basically, how the process of communication through language works.

The theories of rationalism and structuralism were criticised by the philosopher J. Derrida, a post-modernist who elaborated the notion of deconstructionism and who suggested some valuable considerations for the sociocognitive perspective. In short, Derrida believed that "meaning is not inherent to signs" (p. 55): meaning does not only depend on the term, or terms, that are used to express a concept only; it also depends on who he called the observer, that is the person who perceives the language and understands it. The philosopher stated that "to observe is to interact" (ibid.): therefore there can be no such a thing as detachment in studying language, as there can be no stable and unchangeable meaning. In fact, language, and meanings with it, change: "any meaning or identity (including our own) is provisional and relative, […] it is never exhaustive" (ibid.): they evolve in time and space and, as such, they can be deconstructed and, then, studied.

2.3.2.2 Semantics

The second theoretical basis upon which the sociocognitive approach is based is semantics and, more specifically, a re-worked view of the traditional semantic triangle.

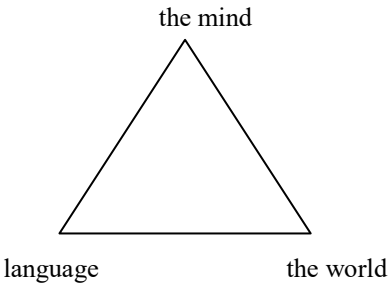


Figure 2.1 The semantic triangle (Temmerman 2000: 59).

Figure 2.1 is a diagram of the relationships among the three basic elements of linguistic communication: the world represents reality, which is created, communicated and described through language; finally, the mind is "the centre of reasoning about and of understanding both the world and the language" (Temmerman 2000: 59). The semantic triangle was first introduced in the first decade of the 20th century by Gompertz (1908) in Felber (1984: 100), and it was traditionally interpreted as follows: the world is the reality that can be objectified "regardless of human observation and experience" (Temmerman 2000: 66); language is the means through which the world can be named and objectified. Finally, the mind classifies the world basing on some precise characteristics, or prototypes, which are commonly known by everyone communicating that idea or concept (p. 60).

While it appears evident that traditional terminology exploited the semiotic triangle in a very limited way, the sociocognitive approach makes a step forward, taking into

consideration the three elements and their interaction in a social and communicative context. The three elements might be interpreted as follows: man experiences the world not simply as an object that has to be perceived and ordered; on the contrary, the most part of what we know and understand of the reality around us depends on and results from the sensory perception we have of it. The remaining part results from cognition (p. 61); in both cases, this world already exists in our minds. This experience of the world is perceived by the mind and is categorized and communicated among people through the medium of language, which has both an interpretative side and a "creative potential" (p. 62). Figure 2.2 below is a summary of the above mentioned two interpretations of the semantic triangle:

	Traditional terminology	Sociocognitive terminology
the world and language	the world exists objectively and can be named	language plays a part on the understanding of the world
the world and the mind	the world can be understood by the human mind thanks to the classificatory capacity of the mind	the world is (partly) in the human mind
language and the mind	the creative potential of language is disregarded	the understanding of language cannot be separated from the understanding of the world

Figure 2.2 The interpretation of the semantic triangle in traditional Terminology and in sociocognitive terminology (Temmerman 2000: 62).

The sociocognitive approach evidently represents an important step forward in the fourth and present period of terminological studies: while it appears that terms remain one of the central components of terminology, one should also point out that these terms are not seen as univocal and synchronic elements that simply designate one and only one concept. Terms are the subject of terminology, but they are perceived inside a framework, which is the one of language and, more specifically, of special languages: language evolves, language exists in our minds as much as our perception and understanding of the world do.

In a nutshell, one should not approach nor study the world of terminology without taking into account the following consideration: it is true that terminology focuses on special languages, that has specific fields and contexts, and that aims to study their vocabulary. It is also true that it is not something fixed: it evolves in time and space, and it is continuing to do it especially nowadays, in the field of emergency management and

emergency-related studies in particular.

The following sections constitute an example of the prominent and central role of terminology in today's technological world, and they will provide an example of its importance in communication, and of its beauty.

2.4 Terminological Projects

> Today's digital society has profoundly changed […] working methods. It has paved the way for new data processing practices revolving around terminology: translation tools, […], digital libraries and specialised encyclopaedias, etc., all of which rely on terminology *operationalization*, i.e. a computational representation of their concept system. (Roche in Kockaert and Steurs 2015: 128)

In a world which depends more and more on up-to-date technology and machines, humans, and in this case specialists in terminology studies, tend to become lazier and lazier and let computers do all the work they themselves should do. While it is true that our new digital society can provide us with new means and methods of study, it is also true that it cannot provide the data and the results we want on its own: terminology studies should not become a simple amount of data to process through a machine. As pointed out also in section 2.3.1, terms do not exists without what makes them unique, that is their meaning and their encyclopaedic information. Lexical data can be collected through machines, but must consequently be organised on the basis of their semantic features and their context of use. To this purpose, ontologies constitute a relevant new way to perceive and "understand the world, plot out reality and […] propose formal and computational modelling for it" (p. 129).

In today's society, languages and the means in which they are used, that is, for example, texts and social media messages, are in constant evolution; it follows naturally that, as confirmed by some studies, terminology linked to the fields of technical and scientific fields is growing constantly. The increasing amount of new terms has brought the need for a more evident categorization, and the development of new computer applications for language processing has allowed this need to take root and develop.

Terminology work can be defined as "work concerned with the systematic collection, description, processing and presentation of concepts and their designation" (ISO 1087 – 1 2000, 18 in Kockaert and Steurs 2015: 222). It is in this context that terminology work has been developing in the form of projects that are called terminological projects (TP).

2.4.1 Terminological Projects: Aims, Structure and Characteristics

Terminological projects (TPs) aim to the achievement of "better professional communication" (Dobrina in Kockaert and Steurs 2015: 198) and they can be classified on the basis of the some general characteristics (see pages 181, 182). Each TP should, first of all, has one main objective, that is the choice of a subject field and its terminological domains. Second, they should have a precise target user in mind, and

their work should meet the needs of this group. Finally, after establishing the domain and the target users of the project, that usually are domain experts and stakeholders, researchers should follow three main phases in order to be created and established as a source:

1) The preparatory phase is the one in which researchers collect the material they need. It consists of two steps: first, the collection of the documents to be used as a source of data (e.g. national and international standards, encyclopaedia, handbooks and general language dictionaries). Second, the extraction of such data (term and concept information) both manually and through apposite softwares;

2) The main phase is the one in which the terminology information is analysed. Focus is given, specifically, to terms and concepts (p. 189): first of all, terms must be identified and ordered into concept fields. In the phase of the choice of the terms, the "term acceptability rating is usually applied": it consists in "identifying preferred terms (the most established), admitted terms (less established) and deprecated terms (terms the use of which is not recommended)" (p. 193).

Several variables need to be taken into account when selecting the terminological data and evaluating their quality: among these, the frequency and the occurrence of the terms in internal and external sources, and the help of some specialists in the study domain. Finally, one should not forget the respect of some established standards and rules, and, most importantly, "internal language guidelines" (Bauer 2015: 336) Second, indications on the grammatical, phonetic and etymological information of each term is provided. Third, concept must be described through procedures such as definitions, explanations and encyclopaedic information. Finally, concept relations and concept systems are elaborated on the basis of three main relation types, that are, namely, generic, partitive, associative (Dobrina 2015: 190).

Providing a definition to a term is essential in the second phase of the creation of a TP. Generally, definitions should be, for example, neither too broad nor too narrow; they should be "general enough to fit in more than one domain and at the same time sufficiently specific not to miss some of the essential delimiting characteristics" (p. 192). Moreover, definitions should also agree with the role of the concept itself in its concept system. In order to be considered valuable, definitions should have a reliable source, respect the target readers' expectations and needs, and be, of course, linguistically correct (p. 72).

Researchers in terminology planning identified different types of definitions; the main ones are intensional and extensional definitions (p. 189). Quoting the experts, an intentional definition "describes the intension of a concept by stating the superordinate concept and the delimiting characteristics" (ISO 1087-1 2000: 6 in Lockinger, Kockaerts and Budin 2015: 62). These types of definitions are among the most frequently used ones, and they are characterised by three main elements, which are objectivity, preciseness and conciseness: they describe the concept without any

ambiguity, briefly delineating all its necessary characteristics and using terms that can be understood by all the readers.

Extensional definitions are, on the other hand, the "description of a concept by enumerating all of its subordinate concepts under one criterion of subdivision." (ISO 1087-1 2000 in Nilsson 2015: 85). Experts suggest that extensional definitions it is not a terminological definition is a proper way, but they propose a definition, although partial, of the term. Other kinds of definitions are the following: enumeration definitions, partitive definitions, "headline definitions" (p. 90) and, finally "comprehensive" ones (p. 94).

3) The final phase is the presentation phase, where information is presented as a resource. In order to become a valuable terminological resource, each TP should respect the four following points (p. 182, 183):

1 – a project should have a purpose ("scope");

2 – a resource should provide the information and indication of what kinds of terminological information are presented (e.g. terms, notes on term usage, definitions, explanations and reference to related concepts);

3 – a resource should specify, first, the language or languages of the project. Second, it should underline the "directionality" (p. 182), that is the indication of the source language of the entry terms in the project, more specifically "the native language of the project team and the target languages are usually those of the countries with which the target users most often communicate" (p. 183);

4 – an indication of the "prescription level" (p. 182) of the project, that is if the kind of terminology it includes and the approach through which it is presented. These levels are the following three:

- a resource can focus on standardized language and terminology;
- a resource can be prescriptive, which means it uses some specific criteria in order to select and present the information (it might, for example, decide not to include jargon);
- a resource can be descriptive, and provide, for example, a comprehensive view of the terminology of a specific field.

An additional element that suggests the importance and validity of each TP is the fact such projects are based on revised existing terminology and on established principles and methods that can eventually enhance current terminology studies. In the following section, the Slándáil Wiki Terminology will be introduced as a relevant example of the development of new Terminology Projects in current terminology

studies.

2.5 Terminology and Project Slándáil

Project Slándáil and the Slándáil Wiki Terminology can be considered an innovative and challenging step forward in today's emergency management studies and, most of all, in contemporary disaster-related terminology studies. First, a short description of the project will be proposed, underlining its aim and its history. Second, attention will be placed on the Terminology Wiki, as an important example of terminology study: its structure will be outlined, together with the process that led to its creation. Some screenshots will be provided, thus allowing the readers to get an idea of what it look like.

2.5.1 Project Slándáil

Slándáil (which means 'security' in Irish), is a three-year multi-lingual and multi-cultural project funded by the European Union Seventh Framework Programme. The countries involved are the Republic of Ireland, Northern Ireland (UK), Italy and Germany, and the languages of the project are their official languages, namely English, Italian and German.

As stated by the coordinator of the project, Khurshid Ahmad: "The goal of Project Slándáil is to ethically use social media information in times of natural crisis and natural disasters to better inform emergency services of the worst affected areas" (Slándáil Project 2015: 2). To be more specific, it aims to provide an accurate study of the use of social media in disaster situations and, more specifically, of the way information is communicated to and from the social media. The project will eventually contribute to the creation of software services that will be used in emergency management and disaster response.

As already suggested, information is created and communicated by everyone to everyone on a daily basis. Thanks to the Internet, almost everybody has access to some kind of social information and can, therefore, be influenced by it, as well as contribute to it. This bidirectional relationship becomes more and more relevant when dealing with disaster situations and their management. In fact, when an emergency situation occurs, all the people involved in the catastrophe become both creators and distributors of information: on the one hand, for example, the organisations in charge of the management will declare the possible state of emergency and provide information on how to deal with it. On the other hand, the people whose homes will be destroyed by a flood or by a hurricane will ask for aid and denounce their situation to the authorities, to families and friends.

This bidirectional relationship can sometimes turn into a three-directional one or more through social media. The amount of information is then so massive and various that it becomes impossible to filter what is relevant from what is not and, most

importantly, what is real from what is not. This problem appears more consistent when one realizes that information can travel all around the world and it is subject to elements such as culture, language and needs. Slándáil tries to limit, if not solve, this ambiguity problem, by collecting all types of information and virtually "harnessing disaster zone information that is shared over social media" (Slándáil Magazine 2015: 3) from different modalities, cultural backgrounds and languages.

In order to gather the data from all forms of social media, analyse them, filter them and eventually put them to an effective use in emergency management procedures, Slándáil is developing a prototype specific software: the new Emergency Management System (EMS). The EMS should, in brief, process the collected data from all social media and provide technological images (videos and photos) and text analytics. Moreover, they should take into consideration all the information collected from the digital media and provide useful feedbacks and messages to the authorities and the personal managing the emergency (ibid.). As a result, the chosen information will be delivered and reported to the public, both to the institutions and the victims of emergencies, and hopefully contribute to a more accurate and effective emergency management. The above mentioned system will operate on data collected not only from social media in general, but also from the Slándáil Terminology Wiki, from a disaster lexicon and from a conceptual ontology. In the words of the Slándáil Magazine:

> the result will ultimately be an increase in the efficiency and effectiveness of disaster management personnel and their ability to harness digital media. Ultimately, saving people and property in times of natural disaster and planning better for future events. (2015: 6)

It is precisely to this scope that the disaster terminology lexicon Slándáil Terminology Wiki has been created and is being developed. First of all, the Slándáil Terminology Wiki will be used as "the multilingual knowledge base for the project ontology." Both the ontology and the lexicon will then be considered for the analysis of contents deriving from the social media and other formal sources, which will be used in order to detect possible emergency risks, disasters and events, and keep up to date on the well-being of the people and on the areas involved. To be more specific, the long-term aim of the project is precisely to "use specific terms found on social media to highlight potentially affected areas during a natural disaster" (www.slandail.eu).

The University of Padua (UNIPD), more specifically the Dipartimento di Studi Linguistici e Letterari (Department of Linguistic and Literary Studies, DiSLL), has made the previously mentioned aims as its own, and it actively contributes to Project Slándáil. Among its different areas of contribution, the University constitutes a fundamental component in the creation and the development of the Slándáil Terminology Wiki; Padua's researchers are currently working on it, thus contributing to disaster- and emergency-related terminology studies.

At the beginning of last semester, while beginning my research for the dissertation, I was given the opportunity to access the Slándáil Project office of the University and to work on the Slándáil Terminology Wiki itself. In the following sections, this relevant

component of the project will be introduced: I will explain how the Terminology Wiki was developed, how it is organised and how it works.

2.5.1.1 The Slándáil Terminology Wiki

"Using words to save lives" (www.slandail.eu): this is one of the dearest mottos of Project Slándáil, and the Slándáil Terminology Wiki makes this statement both the basis and the end of its work. As explained in the project website, Slándáil has dedicated and is still dedicating much time to text and image analysis; the reason for this is simple: the researchers believe that the thorough study of specific terminology related to natural disasters could help manage emergencies in all (potentially) affected areas.

The study of this emergency-related terminology can be perpetuated through the creation of a vocabulary where terms related to the fields of natural disasters and management have been can be collected and found. This terminology compendium would contribute to the creation of digital disaster management systems (EMS) that could not only help manage emergency situations, but even prevent them from happening.

The Slándáil Terminology Wiki is an online platform that officially contains 137 of these emergency-related terms. These terms (335 in the online Wiki homepage) are inserted into wikis, which are, basically, "web pages where people work together as a community to create and edit content" (Haddow and Haddow 2014: 27), and they belong to different fields, including, among others, engineering administration, natural hazards, emergency management and people involved in disaster situations (Slándáil Magazine 2015: 20). Each wiki provides, briefly, terms, definitions and contexts for the three main languages of the Slándáil Project, which are English (the main language of the project), Italian and German.

2.5.1.1.i The Three Development Phases of the Slándáil Terminology Wiki

In the European Union, a huge quantity of materials related to emergency-management, from glossaries to term-banks, are available. Nevertheless, even though the process of collecting the data and organizing the selected terms into a vocabulary is not completely new in the field of the developing terminology and terminology plans, what Slándáil is doing remains relevant.

As briefly explained in the Slándáil Magazine, the study of documents and images related to emergencies and natural disasters has been carried out and funded by the European Union and by national funding partners. To this purpose, a lot of systems for text and image analytic are being used by specialists and researchers; the main systems that provide the text analytic extraction for Slándáil are "CiCui and Rocksteady at TCD and the Leipzig Corpus Miner (LCM) at INFAI, which will be incorporated into the Topic Analyst system developed by CID" (2015: 18).

A specific system has been created and developed within the Slándáil TP itself: "the

Slándáil Text Analytic Module (STAM)" (Slándáil Magazine 2015: 19). This programme allows the combination of the functionality of each of the analytics systems mentioned above and, together with other systems, it is being exploited to provide graphic representations of the frequency of terms belonging to texts from both traditional and social media. The Slándáil Terminology Wiki plays a key role in the development and use of such a system: it is the basis on which the Slándáil ontology will be developed and, once inserted in the system, the Terminology Wiki and the ontology will both allow the analysis of emergency-related documents and materials in the media. This will eventually lead to the possibility to focus on the events happening around the world, manage them and save as many lives as possible. The target of the project is precise and ambitious: researchers believe in the creation of a "harmonised" lexicon, which could constitute a further step in terminology studies.

"The validation of our lexicon against EU best practices" (www.slandail.eu) was a fundamental step to take into account: as previously suggested, in fact, the validity and reliability of the source of information is important when developing a TP. The preparatory phase (see point 1 in Section 2.4.1) of the Slándáil Terminology Wiki consisted on a wide and complex corpora of data that have been and are being collected from different sources.

The first source of information were international agencies: Slándáil experts chose different emergency management institutions in order to compare, contrast and select the data for the Terminology Wiki and "to ensure a more comprehensive approach to terminology extraction and management" (ibid.). The most authoritative sources were the European Union itself, the European Environment Information and Observation Network (EIONET), United Nations Office for Disaster Risk reduction (UNISDR) and the International Red Cross.

The second source of information was the social media, which, as previously suggested, play a key role in today's communication: the social media are not only changing the way people receive, perceive and, most of all, share the information, thus collaborating in times of emergency. They are also considered a step forward from traditional media, because they are more rapid and more flexible. The reason that motivated this choice is that social media are examples of real communication. One should point out, once again, that real does not always stand for true: information, and most of all information provided and communicated through the social media, can often be misleading and false; therefore, real stands for effective, in-time communication. Proof of these considerations is that, among the sources needed to build the corpora, social networks such as Facebook and Twitter played a prominent role.

Among the many other important sources used for the Terminology Wiki, there were the legal, government, business and high-tech information sources provider Lexis Nexis, the Slándáil Newsletter corpus, the FEMA major disaster declaration corpus, the European Union's multilingual term base (IATE) and, finally, the University of Padua corpus, which is constituted of different manuals, glossaries, reports, protocols and bulletins.

The second phase of the TP development is the terminological analysis (see point 2 in section 2.4.1) of the content of the corpora: it was from all the multilingual corpora (English, Italian and German sources) previously listed that the lexicon to build the Terminology Wiki was extracted and collected.

The final phase, that is the presentation of the data (see point 3 in section 2.4.1), was developed by the researchers of the team of the University of Padua (UNIPD). The previously collected lexicon was organised in a dedicated wiki, where each term is displayed, side by side, in all the three languages of the project.

Two essential elements were considered in the development of this TP, and they respected the characteristics that make a TP valid and valuable. First of all, the languages of the project should be indicated: all the terms were collected and then inserted in the source language, that is the first main language of the project, that is English. The English-Italian and the English-German equivalents, were selected considering the cultural and pragmatic differences among languages. Second, the attention was paid on the potential target users of the TP: as underlined on the Slándáil website, "dialogue with potential end-users at various stages of the design of our terminological work allowed" the integration of "further useful sources that could be used to extract terminology" (ibid.).

2.5.1.2 Structure of the Slándáil Terminology Wiki

These sections will deal with the third and final phase in the development of a TP, that is the presentation phase. More specifically, the structure of the Slándáil Terminology Wiki as a multilingual term base will be delineated first, the general structural parameters followed in this TP will be given. Then, a more systematic presentation of the Slándáil Terminology Wiki will be provided; some figures will give the readers a visual idea of its structure.

The Terminology Wiki was developed according to the ISO standards for terminology, more specifically the ISO 1087 (my.pbworks.com). In order to manage terminology and create the Slándáil Terminology Wiki, the ISO has adopted I-Term, a tool that was developed in 2002 and that is: "a state-of-the-art terminology and knowledge management tool which allows users to store, structure and search for knowledge about concepts via web browser" (Steurs, De Wachter and Malsche in Kockaert and Steurs 2015: 226).

Several parameters are followed in the development of the ISO for different Terminology Projects. The parameters that can be considered valuable also for the Terminology Wiki will now be taken into account; they are the following:

- the Interface (p. 240): it can be accessed only online, through web browsers; there are no applications for the desktop and no need to update the programme nor to possess compatible software;

- the Record Structure (p. 241): each structure, or wiki page, is divided into different sections: there are some predefined text fields in which there is information about terms, concepts and concept systems; there are up to 10 additional fields to be used at the discretion of the user, and, finally, a multimedia field for complex representations;

- the in-/output Process (p. 241): each term can be added manually; if the same term occurs more than once, the tool itself informs the user. All the text fields of each term in a given language must be completed and saved individually, before moving to other languages. Moreover, the information of each field can be extracted, if the user needs to check the spell.

2.5.1.2.i The Homepage

The Slándáil Terminology Wiki can be accessed only through the web. The lexicon is not publicly available yet, as underlined in the Slándáil Magazine (2015), as it is still under construction and only project members have access to it. Therefore, only authorized people can access it on the online platform *My PBworks* and, more specifically, in *My Workspaces* section.

The Homepage (see Figure 2.3 below) provides some general information on the project and on the content of each page. In short, quoting the Slándáil Project site:

> The Terminology Wiki has been structured so as to display every term on a dedicated page where the English, Italian and German equivalents are provided along with definitions and references to contexts of use as well as morphosyntactical and usage information. (www.slandail.eu)

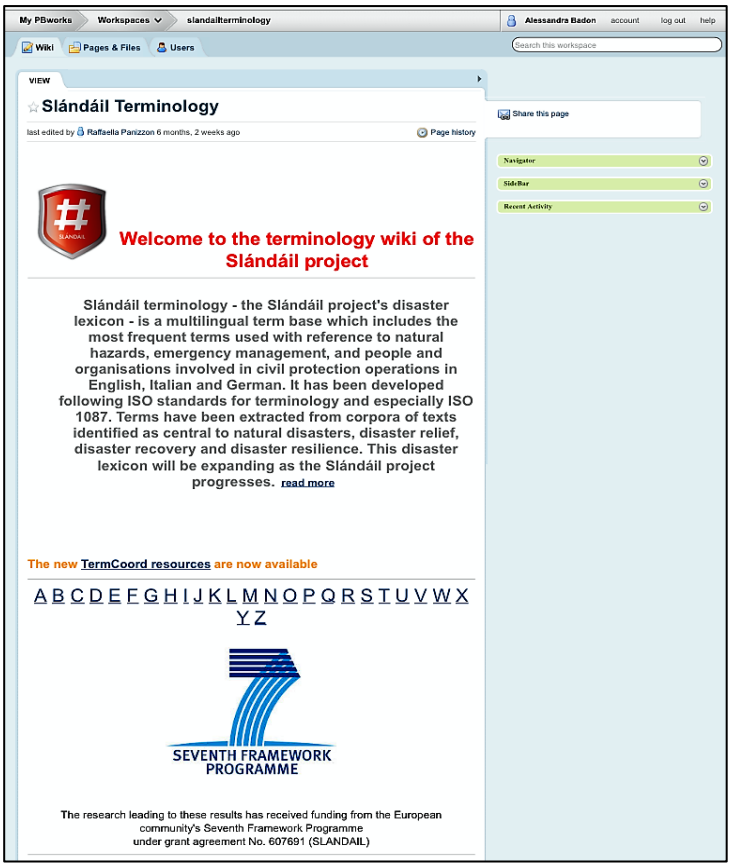


Figure 2.3 Homepage of the Slándáil Terminology Wiki (my.pbworks.com).

The terms are collected and presented in alphabetic order, and the main index is available on the main page of the website. To each letter of the index corresponds a link to the list of terms beginning with that specific letter. Then, clicking on each word of the list, readers can enter the page dedicated to the chosen term.

On the right side of the home page, there are the following three boxes:

1) the Navigator, where the users can access all the documents and the files previously uploaded and quickly access all the term pages with a click of the mouse. In Navigator, readers can also find the Wiki terms list and, in the Wiki folder, the public version of the lexicon, updated more or less one year ago;

2) the SideBar, which appears everywhere in the workpage and allows us to add a link to a specific website or anything we need;

3) the table of Recent Activity, which shows the latest changes or integrations (activities) on the Wiki pages in chronological order.

Finally, in the lowest part of all the pages in the work spaces, there is some space dedicated to possible comments.

2.5.1.2.i.i Inside a Wiki Page

Insight into one of the Wiki pages will now be given, in order to show their structure. Since the present work focuses on emergency situations linked to floods, the wiki page of the *flood* will be taken as an (almost complete) example of the structure of each term page.

Before proceeding with a more detailed description, it is relevant to highlight that all the wiki pages are essentially structured as shown in Figure 2.4 below. Each term of the main index (in English) has a wiki page. In each wiki page there are three columns; in each column there is the term in the three languages of the project. The language of the first column is English, while the languages of the second and of the third columns are, respectively, Italian and German.

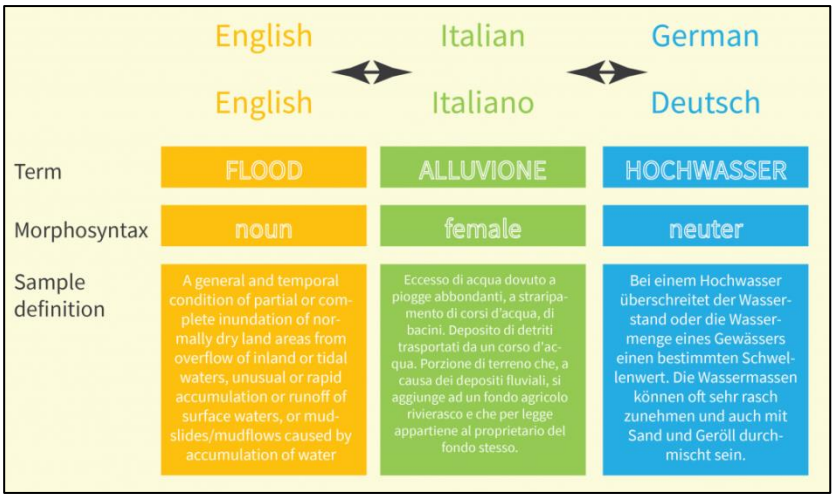


Figure 2.4 Example of the term *flood* in English, Italian and German (Slandail.eu).

As the readers will see in the figures below, the Italian and the German columns will not be visible, due to space reasons. As specified in the Homepage, the entries in the Wiki include different textual fields: there are the main terms, together with synonyms abbreviations and acronyms. Each page also includes the following elements:

> linguistic, conceptual and encyclopaedic information to promote awareness, knowledge and action before, during and after disasters and attendant civil protection operations for all stakeholders […] and resilience organisations - and all types of communication - ranging from technical reports through alerts and notices to the population at large to social media messages. (www.slandail.eu)

The elements and parameters that constitute each page are the following:

A. Subject;

B. Subfield;

C. Term;

c. Source (of the Term);

D. Morphosyntax;

E. Definition;

e. Source (of the Definition);

F. Context;

f. Source (of the Context);

G. Concept Field;

H. Conceptual Relations;

I. Phraseology;

J. Related Terms;

K. Synonyms;

L. Notes;

M. Equivalence;

N. References;

O. Usage register;

P. Other elements.

In the following sections, a short definition or explanation will be provided for each of the previously listed elements. Each short text will be preceded by a screenshot of the *flood* wiki page (each figure will contain some of the elements in the list).

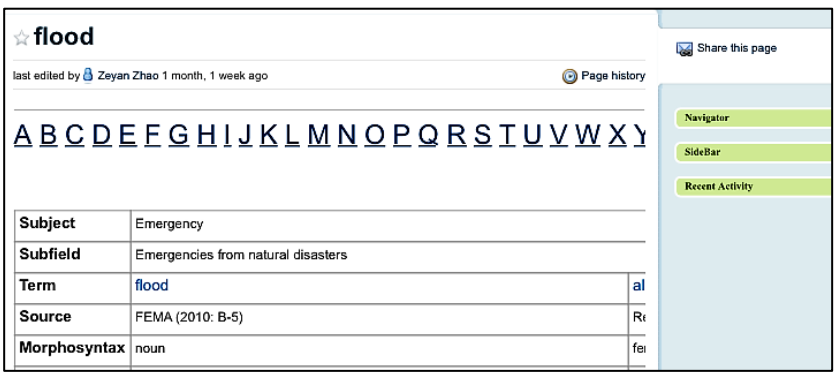


Figure 2.5 Wiki page of the term *flood* – from A. subject to D. morphosyntax (my.pbworkds.com).

A. Subject

The *Subject* refers to the macro-context where the term (*flood* in our specific example case) can be inserted: it is the topic, the subject field upon which the researchers and users of the system have discussed and agreed: as this is an emergency-related TP, it appears evident that the main terminological domain is *emergency*.

B. Subfield

The *Subfield* is related to the *Subject*, and it provides a more specific restriction to the macro-context, or the subject field. The *Subfield* is the same for all the terms in the lexicon: the topic on which the study is focused are emergencies and, more specifically, *emergencies from natural disaster*.

C. Term

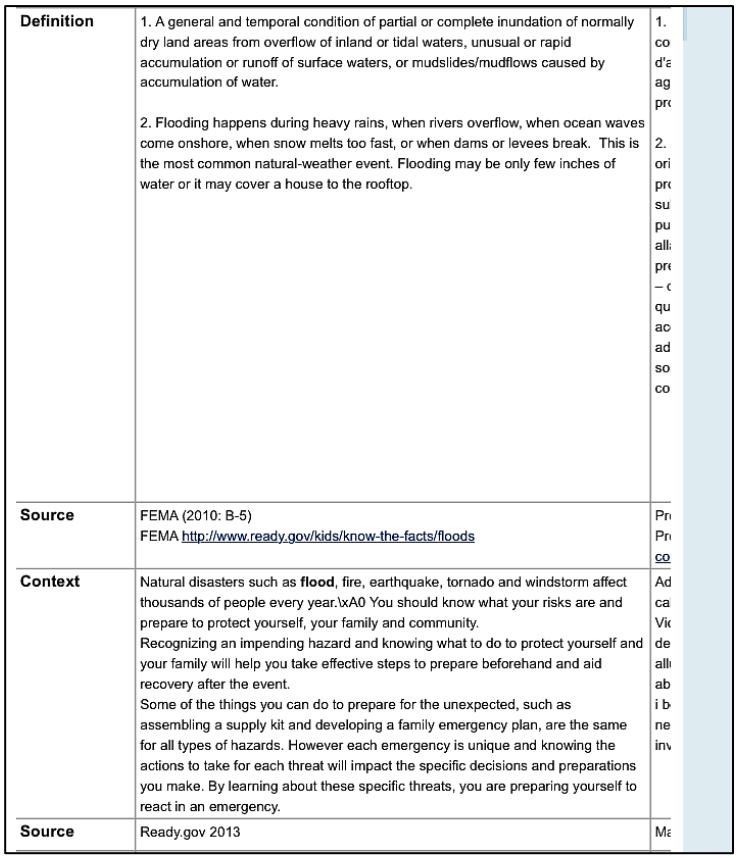
This space provides the indication of the term, which has been inserted after thorough research and analysis of the sources and the data previously collected (see Section 2.4.1.1.i): *flood* has indeed been selected as a recurrent term in emergency related situations.

c. Source (of the Term)

Reference to the *Source* of the term is indicated in this row. This indication is provided in order to inform the user, but also to underline the validity and reliability of the source of the term.

D. Morphosyntax

The *Morphosyntax* of the main term is the linguistic indication of its gender and its number. One might observe that, while in the Italian and in the German columns the number and gender of the terms are delivered, in the English column there is only an indication of the lexical category of the term; number is not mentioned. This choice might be due to the fact that English in the main source language of the project.



Definition	1. A general and temporal condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters, unusual or rapid accumulation or runoff of surface waters, or mudslides/mudflows caused by accumulation of water. 2. Flooding happens during heavy rains, when rivers overflow, when ocean waves come onshore, when snow melts too fast, or when dams or levees break. This is the most common natural-weather event. Flooding may be only few inches of water or it may cover a house to the rooftop.	1. co d'a ag pr 2. ori pr su pu all pr – c qu ac ad so co
Source	FEMA (2010: B-5) FEMA http://www.ready.gov/kids/know-the-facts/floods	Pr Pr co
Context	Natural disasters such as **flood**, fire, earthquake, tornado and windstorm affect thousands of people every year.\xA0 You should know what your risks are and prepare to protect yourself, your family and community. Recognizing an impending hazard and knowing what to do to protect yourself and your family will help you take effective steps to prepare beforehand and aid recovery after the event. Some of the things you can do to prepare for the unexpected, such as assembling a supply kit and developing a family emergency plan, are the same for all types of hazards. However each emergency is unique and knowing the actions to take for each threat will impact the specific decisions and preparations you make. By learning about these specific threats, you are preparing yourself to react in an emergency.	Ad ca Vi de all ab i b ne inv
Source	Ready.gov 2013	Ma

Figure 2.6 Wiki page of the term *flood* – from E. definition to *f.* source (of the context) (my.pbworks.com).

E. Definition

An accurate and objective *Definition* is central in the work of terminology: in the Slándáil Terminology Wiki there are both intentional and extensional definitions, and they can be one or many according to the quality of the information collected in the sources and the need for specification of each term.

e. Source (of the Definition)

The sources of the definitions of *flood* are the perfect example of the types of sources from which users take the information: the first definition was found in an official document issued by FEMA, which was already uploaded in the Navigator section. The second definition comes from the FEMA website for families and children, where general information on this kind of natural phenomenon is provided. In both cases, the sources are reliable, but they differ in target.

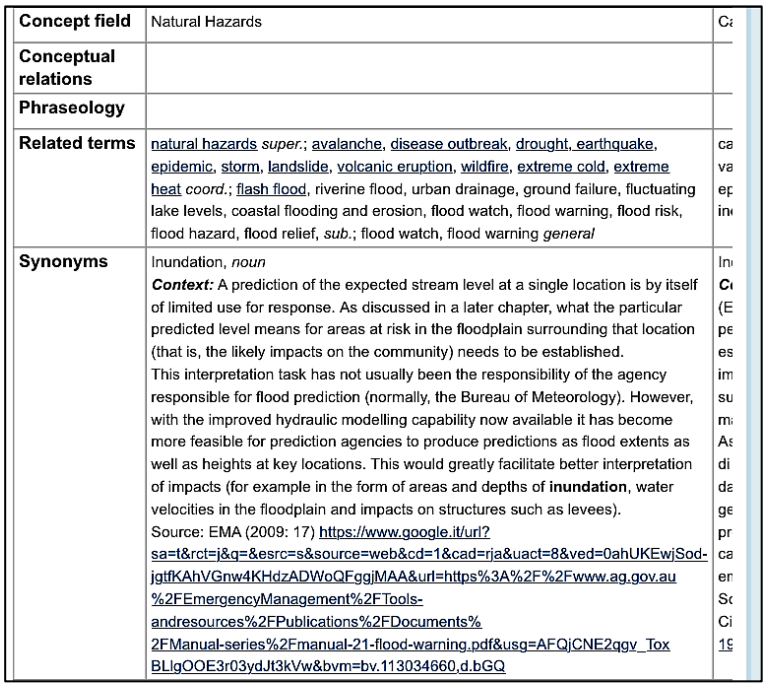
F. Context

The *Context* contributes to the meaning of the term, by adding new information to the specification of the term itself and providing the readers with a more complete idea of its meaning. They provide an example of where such term can be found and help the

readers catch the encyclopaedic information in it; this is why contexts are often more discursive than the definitions and often present a simpler choice of words.

f. Source (of the context)

The *Source* of the context must be provided too. The context should appear clear and simple, in order for everyone to understand the term and its meaning: the source of *flood* is, for example, Kids.gov, a website for children and families managed by FEMA.



Concept field	Natural Hazards	Ca
Conceptual relations		
Phraseology		
Related terms	natural hazards *super.*; avalanche, disease outbreak, drought, earthquake, epidemic, storm, landslide, volcanic eruption, wildfire, extreme cold, extreme heat *coord.*; flash flood, riverine flood, urban drainage, ground failure, fluctuating lake levels, coastal flooding and erosion, flood watch, flood warning, flood risk, flood hazard, flood relief, *sub.*; flood watch, flood warning *general*	ca va ep in
Synonyms	Inundation, *noun* ***Context:*** A prediction of the expected stream level at a single location is by itself of limited use for response. As discussed in a later chapter, what the particular predicted level means for areas at risk in the floodplain surrounding that location (that is, the likely impacts on the community) needs to be established. This interpretation task has not usually been the responsibility of the agency responsible for flood prediction (normally, the Bureau of Meteorology). However, with the improved hydraulic modelling capability now available it has become more feasible for prediction agencies to produce predictions as flood extents as well as heights at key locations. This would greatly facilitate better interpretation of impacts (for example in the form of areas and depths of **inundation**, water velocities in the floodplain and impacts on structures such as levees). Source: EMA (2009: 17) https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjSod-jgtfKAhVGnw4KHdzADWoQFggjMAA&url=https%3A%2F%2Fwww.ag.gov.au%2FEmergencyManagement%2FTools-andresources%2FPublications%2FDocuments%2FManual-series%2Fmanual-21-flood-warning.pdf&usg=AFQjCNE2qgv_ToxBLlgOOE3r03ydJt3kVw&bvm=bv.113034660,d.bGQ	In Cr (E pe es im su m As di da ge pr ca en Sc Ci 19

Figure 2.7 Wiki page of the term *flood* – from G. concept field to K. synonyms (my.pbworks.com).

G. Concept Field

The *Concept field* is the domain to which terms with some common features belong to. Four areas of interest have been studied in the Slándáil Project: *natural hazards*, *emergency management*, *people in emergencies* and *authorities*. The field helps us understand to which of these areas the term belongs to. The concept field of *flood* is, clearly, *natural hazards*.

H. Conceptual Relations

Conceptual relations are the associations that link together the terms belonging to the same conceptual field and the relation between the terms. These relations can be of different types: "equivalent" (Sambre and Wermuth 2015: 101); they can be "associative" (ibid.), or coordinate, as indicated in the Terminology Wiki; finally, they

can be "hierarchical" (ibid.), which means that the terms indicated are in a superordinate or subordinate position. No indication concerning this point was found for the term *flood*.

I. Phraseology

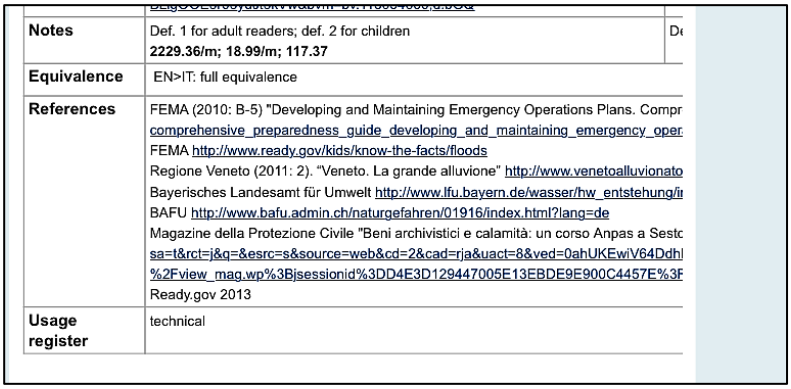
With the term *phraseology* one usually refers to the way language is used through words, phrases and expressions. There is no phraseology indication in the *flood* wiki page.

J. Related Terms

To each term corresponds a list of *related terms.* These terms can often be found in the Wiki main index itself and they are, as the name suggests, terms strictly related to the main one: some are superordinate, *i.e.* they belong to a higher conceptual level, like *natural hazards*. Some are coordinated, which means they belong to the same conceptual level, like *extreme heat*, which is, like flood, a natural hazard. Others are subordinated, that is on a lower conceptual level, like *flash flood*, that is a type of flood).

K. Synonyms

Synonyms are, very plainly, two or more different words that have (almost) the same meaning. The choice of a term instead of another depends on their contexts of use: even though, for example, *flood* and *inundation* have the same basic meaning, there is a different *nuance* in them, and this slight difference can be found in the context indicated below each synonym, together with their morphosyntactical information.



Notes	Def. 1 for adult readers; def. 2 for children **2229.36/m; 18.99/m; 117.37**
Equivalence	EN>IT: full equivalence
References	FEMA (2010: B-5) "Developing and Maintaining Emergency Operations Plans. Compr comprehensive_preparedness_guide_developing_and_maintaining_emergency_oper FEMA http://www.ready.gov/kids/know-the-facts/floods Regione Veneto (2011: 2). "Veneto. La grande alluvione" http://www.venetoalluvionato Bayerisches Landesamt für Umwelt http://www.lfu.bayern.de/wasser/hw_entstehung/i BAFU http://www.bafu.admin.ch/naturgefahren/01916/index.html?lang=de Magazine della Protezione Civile "Beni archivistici e calamità: un corso Anpas a Sestc sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwiV64DdhI %2Fview_mag.wp%3Bjsessionid%3DD4E3D129447005E13EBDE9E900C4457E%3F Ready.gov 2013
Usage register	technical

Figure 2.8 Wiki page of the term *flood* – from L. notes to O. usage reference (my.pbworks.com).

L. Notes

As shown in the Homepage, there is a *Notes* field for each terminology wiki: it usually provides frequency values of each term. More specifically, "the first is the

frequency of the term in the Slándáil corpus, the second in the COCA corpus and the third indicates the weirdness index" (www.slandail.eu). For example, the term *flood* (Figure 2.8) displays the following values: 2229.36/m indicates the frequency in the Slándáil corpus; 18.99/m is the frequency in the COCA corpus, and 117.37 indicates the Weirdness index. Moreover, specific indication is given of the target public to which the definitions refer: the first one is for adult readers, whereas the second one is for children.

M. Equivalence

Equivalence establishes the relationship among the meanings of the terms in the three languages of the project, with the passage from English, the main language, to Italian (EN-IT) and from English to German (EN-DE). Concerning the concept of equivalence, it is fundamental to underline that, in the passage from a source language to one or more target languages, that is, in our case, in the passage from English to Italian and German, equivalents must not be thought of as synonyms or translations, but as simple correspondents.

N. References

In this section, the indication of all the sources of information on the terms are indicated: each *reference* of the sources information previously given is followed by a link to a page on the Internet or to a document (Pdf, Word, etc.) that has been previously updated in the Document folder of the Navigator section.

O. Usage Register

In the last row, additional encyclopaedic information on the terms can be found. This concept is related to the one of "prescription level" (see Dobrina: 183 in section 2.3.1), and it specifies what kind of terminology as selected and previously analysed. In the case of the Slándáil Terminology Wiki, all the terms belong to the *technical* register.

P. Other Elements

In some of the wikis, there are also other elements that might provide extra information on the term. As specified on the Slándáil website, many terms have visual representations that represent terms and their relation with other terms. These images can help the readers to have "a more immediate understanding of the possible number of different meanings and the type of relationships it has with other terms (hyponymy, hyperhonymy, antonymy etc.)" (www.slandail.eu). Figure 2.9 is an example of ontology created with the software Protégé (it can be found in the *flood* page). Figure 2.10, on the other hand, represents an example of a visual map (it can be found in the *flood* page).

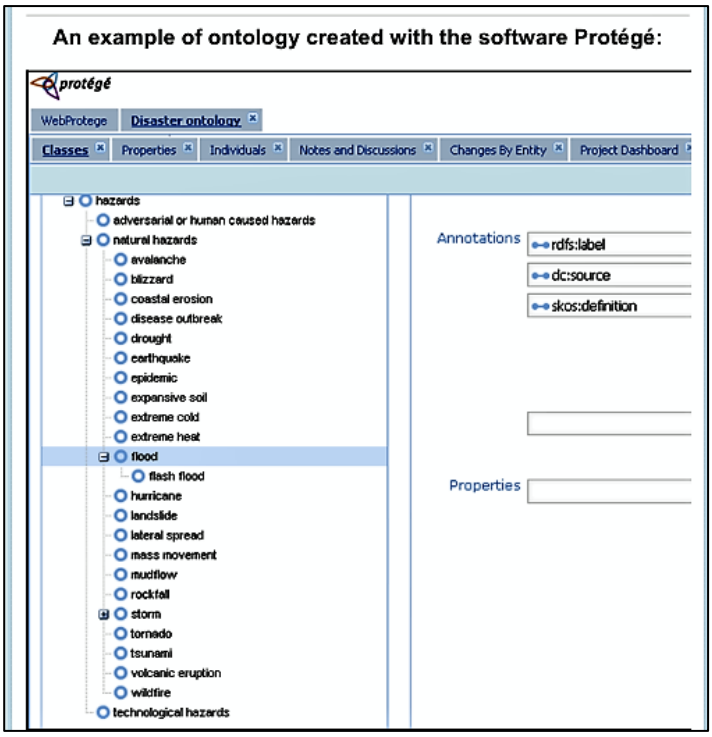


Figure 2.9 Example of ontology of *flood* created with the software Protégé (my.pbworks.com).

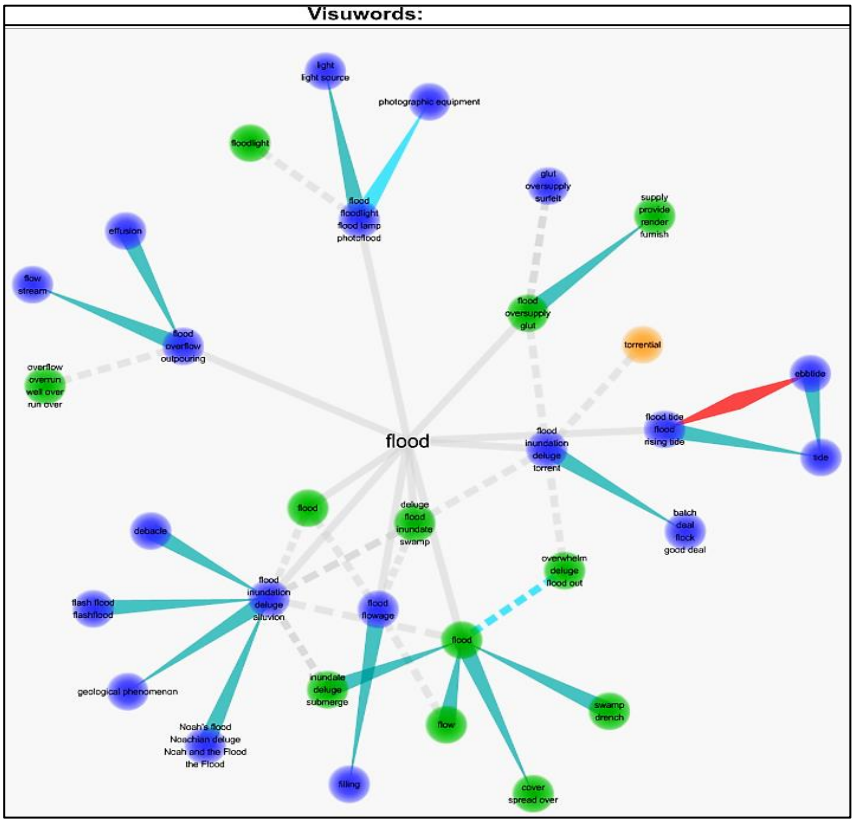


Figure 2.10 Visual map of the term *flood* and of words linked to it (my.pbworks.com).

This chapter dealt with terminology, and more specifically emergency-related terminology studies.

A short overview of the history of terminology was provided, focusing on some central concepts of the traditional approaches and concluding with an overview of today's Sociological approach. The following sections were devoted to the general description of digital terminology plans, a new approach to terminology studies. Finally, the Slándáil Terminology Wiki was presented as an interesting example of TP, and as an example of my personal contribution to the Slándáil Project, to which Chapter 6 of this work will be devoted.

Chapter 3

Textual Analysis of the Emergency Texts: Methods

3.1 Introduction

Disaster-related emergencies are a consistent problem in our society. Emergency related studies have therefore become central: their focus is, in particular, on emergency management and on its possible improvement both in communication and in action. Nevertheless, they are still in progress. While it is clear that "terminology needs to find methods for studying and describing all the aspects that play a role in the process of […] understanding" (Temmerman 2000: 221), it is also true that the scientific and technical texts should "be described […] with a variety of potential user groups in mind" (ibid.).

These considerations suggest some of the difficulties in the work on emergency-related terminology and communication; this work intends to propose some reflections on such considerations, thus contributing to the development of emergency-related studies. The aim of this work is to understand the relation between the information provided in disaster situations and the way this information is communicated to the public. More specifically, I wish to understand whether the texts provided to the general public (non-experts) by official authorities (experts) are an example of effective and clear communication.

This chapter will focus on the textual analysis of some selected emergency-related texts. It will offer a description of the methods used to carry out the mentioned analysis. First, a short overview of the data selection procedure will be offered, together with a list of the documents that will be analysed. Second, the different steps of the textual analysis will be introduced: focus will be on the tools used to process the data, on the data storage organization and on the variables and models used for the analysis.

The results of the work will be presented in Chapter 5: focus will be on the textual aspects of Italian and English texts both for experts and for non-experts, and on the visual aspects of the texts for non-experts.

This part will be structured as follows: it will begin with the 6 texts for experts, analysing the 3 Italian ones first, and the 3 English ones after; it will conclude with the 6 texts for non-experts, analysing the 3 Italian ones first and the 3 English ones after. Each text will have its own section. Each section will be organised as follows: first, the data obtained using WordSmith Tools 4.0 for some selected keywords, and Tint and Word for the readability index of, respectively, the Italian texts and the English ones, will be provided. The frequency of the selected keywords will be represented by histograms.

Second, the obtained results will be commented. Texts will then be grouped in corpora of 3 texts each, and the results previously exposed will be discussed and

compared. These groups will be, namely, the 3 Italian texts for experts, the 3 English texts for experts, the 3 Italian texts for non-experts, the 3 English texts for non-experts.

3.2 Methods and Materials

3.2.1 Collecting and Selecting Documents and Information

The first step in the analysis of emergency-related communication is the collection of data. In the present study, the material was collected mainly through the Internet. The documents were downloaded from the official websites of the Italian Protezione Civile and the American FEMA and by pages linked to them. More specifically, the document of Associazione Civilino, which is in collaboration with Protezione Civile, was available on zip format on the Civilino's website (www.civilino.it).

I began with a preliminary selection of 28 documents, 13 in Italian and 15 in English: among the 13 Italian texts, 5 were for experts and 8 for non-experts; among the 15 English texts, 6 were for experts and 5 for non-experts. These documents focused on different kinds of natural hazards and emergency-related problems: they provided instructions on what to do before, during and after disasters and how to deal with them. Texts for experts presented specific technical instructions and notions to be used by the associations and the volunteers responsible for emergency management. On the other hand, texts for non-experts provided information on how to deal with disasters, on what can be done to prevent and/or limit them and on how to keep the people involved safe; some of these texts were for families, others for children only.

The reason for this choice of material is simple: I aimed to analyse texts for experts and non-experts, compare them from a textual and a visual point of view and understand what information is communicated to the general public and how this is done in emergency-related situations.

After a detailed analysis of the 28 candidate documents, I came up with a final selection of 12 documents; they will be listed in Section 4.2.2.

This final selection was based on specific criteria, first of all the topic. As already mentioned, focus was on the topic of flood and, therefore, on flood-related documents. The initial corpora focused on many kinds of natural hazards, such as earthquakes, tsunamis, homefires and floods.

To be more specific, the 5 Italian texts for experts provided specific information on flood. Among the English texts for experts, on the other hand, 3 texts out of 6 focused on all kinds of hazards, flood included.

Concerning the texts for non-experts, 7 Italian texts out of 8 were about all natural hazards, including flood. 3 English texts for non-experts out of 5, on the contrary, focused mainly on flood. Provided that the analysis could not be based on flood-related only documents, I opted for a balanced final selection of 12 texts: while all the 6 texts for experts have flood as the main topic, 2 Italian texts out of 3 and 2 English text out of 3, all for non-experts, focus on emergency-related disasters in general, including floods.

The second variable taken into account was the target reader: concerning Italian texts for experts, I selected 3 government decrees on how to deal with floods; the target are public institutions and emergency management agents. The targets of English texts for experts are, on the other hand, disaster managers to-be.

The third variable taken into consideration specifically for texts for non-experts was the visual presentation: I selected the texts that could be visually more engaging and clearer for non-experts readers. This aspect is central in the analysis of the communicative potential of texts edited for the general public.

3.2.2 List of the Documents

In the following passages, the complete lists of the documents will be provided: the list of the Italian and English texts used for text analysis will be presented, distinguishing between texts for experts and for non-experts.

The Italian texts for experts are the following:

- Text 1: Autorità di Bacino del Fiume Po. (2016). *Piano per la valutazione e la gestione del rischio di alluvioni.* III A. Relazione di piano. Primo piano di gestione del rischio di alluvioni (PGRA 2015-2021). Sezione A (D. Lgs. n. 49/10 art 7, comma 3 lettera a);

- Text 2: Regione del Veneto. (2012). *Protocollo operativo per la gestione delle emergenze.* Redatto ai sensi della DGR N. 666/2012. Documento Operativo del Piano Regionale di Protezione Civile;

- Text 3: Ministero dell'Ambiente, della Tutela del Territorio e del Mare. (2013). *Documento conclusivo del Tavolo Tecnico Stato-regioni.* Indirizzi operativi per l'attuazione della direttiva 2007/06/CE relativa alla valutazione ed alla gestione dei rischi da alluvioni con riferimento alla predisposizione delle mappe della pericolosità e del rischio di alluvioni (Decreto Legislativo n. 49/2010).

The Italian texts for non-experts are the following:

- Text 4: Janinski R. R., Tommasoli L., Di Tomizio-More B. (2004). *Come deve comportarsi un cittadino PRIMA, DURANTE E DOPO un'emergenza*;

- Text 5: Presidenza del Consiglio dei Ministri. Dipartimento della Protezione Civile. (2005). *Protezione civile in famiglia*;

- Text 6: Associazione Civilino. (2013). *Scheda Alluvione*.

The English texts for experts are the following:

- Text 1: FEMA. (March 1998). *Managing floodplain development through the National Flood Insurance Program.* Unit 1: Floods and floodplain management;

- Text 2: FEMA. (March 1998). *Managing floodplain development through the National Flood Insurance Program*. Unit 3: NFIP Flood studies and maps;

- Text 3: FEMA. (March 1998). *Managing floodplain development through the National Flood Insurance Program.* Unit 10: Disaster operations and hazard mitigation.

The English texts for non-experts are the following:

- Text 4: FEMA. (2004). *Are You Ready?* An In-depth Guide to Citizen Preparedness;

- Text 5: FEMA. (February 2007). *Fact sheet: Floods*. FEMA 555;

- Text 6: FEMA. (August 2013). *Floods fact sheet for kids*.

3.2.3 Variables, Tools and Models

3.2.3.1 The main variable

The main variable considered in the analysis of the previously listed texts is language and its use in texts both for experts and non-experts.

As already mentioned, emergency-related studies are a field in continuous expansion, and emergency-related terminology is developing too. The "lexical components" of this "specialised language" (Geeraerts in Kockaert and Steurs 2015: xvii), that is the terms, belong to specific semantic fields: emergency management, natural hazards, people in emergencies and authorities. Moreover, emergency-related terms can be extrapolated from different domains such as, among others, politics, environmental sciences and technical engineering.

The language on which this analysis is based varies from technical terms and keywords used in political, economic and scientific domains (in texts for experts in particular) to words used in daily life by a wider range of readers (in texts for non-experts). The corpus of terms and keywords this work could be based upon was, evidently, wide and heterogeneous: a consistent amount of technical terms related, for example, to politics and government decrees, would not be found in texts for non-experts, and vice versa.

Since the aim is a balanced comparative analysis of the textual content in each text,

I selected a list of 5 keywords likely to appear both in texts for experts and for non-experts; my future work will investigate if these keywords are used and how they are used in the reference corpus. The keywords considered for the analysis are not only characteristic of emergency-related studies, but they also belong to the Slándáil Terminology Wiki.

As we will see, the selected keywords seem to be commonly used words, but they have become terms through the process of 'technicity' (Depecker in Kockaert and Steurs 2015: 38). They are listed below, in alphabetical order.

The Italian selected keywords are:

- *alluvione/alluvioni;*
- *danno/danni;*
- *emergenza/emergenze;*
- *gestione*[1]*;*
- *rischio/rischi.*

The English keywords (equivalent to the Italian ones) are:

- *damage/damage;*
- *emergency/emergencies;*
- *flood/floods;*
- *management;*
- *risk/risks*.

The study of the selected keywords proceeded as follows: the frequency of the words in texts for experts and non-experts, both in Italian and in English, was analysed, and the data compared; the words that are used more than others were highlighted and studied.

3.2.3.2 Steps in the Textual Analysis

The analysis of the textual aspects is based on two main steps, each of them developed through the use of specific tools.

[1] It should be pointed out that the entry in the Slándáil Terminology Wiki is *gestione delle emergenze* in Italian and 'emergency management' in English. Even though these terms often appear together as a collocation, I will focus on *gestione* and 'management' and *emergenza/e* – 'emergency/cies' separately.

3.2.3.2.i First Step

The first step focuses on elements such as frequency lists and word count. Attention was placed on these elements because they provided us with specific quantitative information on the keywords used in the selected texts.

Frequency lists are lists of words grouped by frequency, that is occurrence, within one or more texts; these lists provide a quantitative analysis of the words in a chosen document. In this work, indication of how many occurrences of each selected keyword (listed in the previous section) there are in each text will be given, together with some reflections on the results.

Focus will also be on word count, that is the calculation of how many words, both lexical and grammatical, are in each text. It was used to compare the length of texts and the percentage of occurrence of the selected keywords, thus allowing us a more accurate and objective assessment.

3.2.3.2.i.i Tool Used

The tool used to analyse each of these components was the fourth version of Oxford WordSmith Tools (Scott: 2008). The first version of this programme (WordSmith Tools 1.0) was created by the British linguist Mike Scott in 1996, in Liverpool, and the following versions, version 4.0 included, were developed and provided in collaboration with the Oxford University Press department. All the versions are distributed and made available online by Lexical Analysis Software Ltd, and they are widely used for international academic research.

This software package is constituted of three modules, or components: WordList, KeyWords and Concord.

WordList provides the frequency list of the running words in the text files, providing also the frequency percentages. It also shows in how many text files each word can be found. Words are listed in alphabetic order or in order of frequency.

KeyWords analyses the keywords in a reference corpus, comparing a chosen source corpus and a chosen target corpus. These corpora are the word lists previously created through WordList. It should be underlined that keywords are usually defined as words which can serve as key to other words' meaning or that embody a central concept in a text. Nonetheless, the keywords that will be analysed are not considered by their meaning in the text, but by their high or low frequency within a specific text range.

Concord provides concordances in the corpora, that is all the times a word appears (instances), in context, in one or more texts. The words inserted in Concord are the words selected in the Wordlist and/or Keywords sections.

WordSmith 4.0 also provides word count.

3.2.3.3.i Second Step

The second step in terminological analysis is the indication of the readability index of all texts.

Readability index is based on algorithms that give a statistic calculation of how much a text is easy to read for a specific audience with a specific level of study.

While the purpose of the readability index remains unvaried throughout all languages, its formula and its parameters change, of course, with respect to the language of the text one needs to analyse.

Concerning Italian, the readability formula for Italian texts is called *indice di leggibilità Gulpease.* It was created in 1988 by the GULP (Gruppo Universitario Linguistico Pedagogico) researchers at the University La Sapienza in Rome, with the supervision of Maria Corda Costa and Tullio di Mauro (www.xoomer.virgilio.it). The linguistic variables taken into account are the length of each word (in letters) and the length of each sentence. It can be read as follows: it is on a scale from 1 to 100, therefore the higher the index, the easier it is to read the text.

Concerning English, the readability formula used in this study is the Flesh Reading Ease, created by the Austrian Rudolph Flesh in 1948. The linguistic variables taken into account are the length of each word (in syllables) and the length of each sentence (in words). It can be read as follows: it is on a scale from 1 to 100, therefore the higher the index, the easier it is to read the text. The lower it is, the more difficult the text is.

The readability index was provided both for texts for experts and for non-experts; the results were analysed, compared and discussed. The choice to take the readability aspect into consideration is evident: it provides a quantitative and objective analysis of the difficulty of texts and points out the differences between scientific and technical texts for experts and texts for non-experts. It allows us to debate on whether texts for non-experts can be easily read by the general public and if they can be considered examples of clear communication.

3.2.3.3.i.i Tools Used

Tint

The tool used for the readability index of Italian texts was Tint, the Italian NLP (Natural Language Processing) tool based on the toolkit Stanford CoreNLP (www.stanfordnlp.github.io). It was created by some researchers of the institute Fondazione Bruno Kessler in Trento in order to provide an “easy to use” (Aprosio, Moretti 2016: 1) instrument for text analysis. Tint is made up of nine modules, each of them focusing on specific element of the text. Nonetheless, the only element considered is the result of the readability index calculation.

The formula is the following:

$$89 - (Lp / 10) + (3 \times Fr)$$

Where:

- LP is the result of the following calculation: (100 × total number of the letters) / total numbers of the words.
- Fr is the result of the following calculation: (100 × total number of the sentences) / total number of the words (www.xoomer.virgilio.it).

Word

The tool used for readability index of English texts was the readability tool incorporated in the Microsoft Word programme; the 2010 version, released on July 2010, was used. Microsoft Word provides functions such as grammar and spelling check, but it also provides the readers with some information on the reading level of the document.

The formula used by Word is the following and it can be found on the webpage (www.support.office.com):

$$206.835 – (1.015 \text{ x ASL}) – (84.6 \text{ x ASW})$$

Where:

- ASL is the Average Sentence Length, that is the number of words divided by the number of sentences;
- ASW is the Average number of Syllables per Word, that is the number of syllables divided by the number of words.

3.3 Analysis

In the following section, each step of my contribution will briefly be delineated: the analysis will start with the description of the analysis of the texts, focusing on how the tools and the modules mentioned before were used for the purpose.

3.3.1 Analysis of the Texts

The textual analysis of the texts was developed as follows: first, all the files were converted from pdf format into txt format and into doc format; second, the texts were investigated with Oxford WordSmith Tools 4.0 for keywords, frequency lists and word count, and with Tint and Word for the readability index.

This analysis focused on texts for experts, starting with the Italian ones and proceeding with the English, and continued with the texts for non-experts, Italian first and English second.

It is relevant to draw attention on the conversion of texts from pdf format into txt

format: some arrangements had to be made in order to make the texts legible for WordSmith Tools 4.0 and for Tint.

Particular attention was paid to punctuation: full stops can indicate the end of a sentence or of a paragraph, but they are also used in numbers, abbreviations, acronyms and websites page indications. The programmes used in this work do not distinguish among these different types of full stops; on the contrary, they read each point as an indication of the end of a sentence. Therefore, in order to avoid incorrect data analyses, I went through all the texts and deleted the unnecessary full stops. Extra line spacing was deleted for the same reason.

The (English) texts in pdf converted into doc were simply reorganised; I deleted extra spaces and symbols indicating lists before the analysis with Word.

A detailed description of each phase of use of the tools will be provided.

3.3.1.1 WordSmith Tools 4.0.

The first tool was WordSmith Tools 4.0. The work proceeded as follows: first, the module WordList was used first, then KeyWords and finally Concord. Figure 3.1 provides an idea of the homepage of the software.

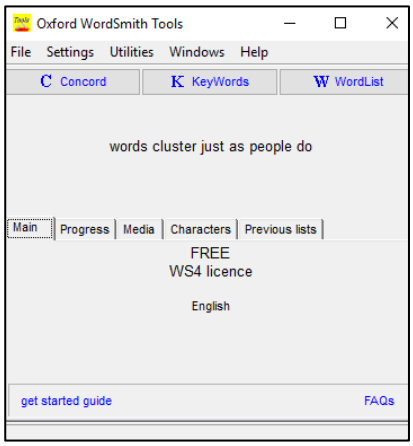


Figure 3.1Screenshot of the home page of WordSmith Tools 4.0.

First of all, the languages in which the documents were written was selected from the list proposed in the software itself.

Second, the corpus of all the texts (in txt format) was selected, first the 3 Italian texts for experts, then the 3 English texts for experts, and then the 3 Italian texts for non-experts and, finally, the 3 English texts for non-experts.

To obtain the desired frequency lists, I opened WordList (which appeared on the Controller page of the software). Each of the 12 texts was then selected individually. I pressed on the button *Make a Wordlist now* and obtained the word list of each text in quantitative order; the number of times each word appeared and the percentage of its frequency were provided. I chose to see the words in alphabetic order and saw what was

the frequency of the words I had selected (see the lists in section 3.2.3.1). After an analysis of single word lists, one for each text, selected all the 3 Italian texts for experts, the 3 English texts for experts, the 3 Italian texts for non-experts and the 3 English texts for non-experts were selected; the indication of the words frequency in each group, the percentage of running words and in how many texts each word occurred were obtained.

Then, focus given to the KeyWords module: I opened it from the Controller page and selected each of the word lists previously created and saved through WordList. The word list of the text was inserted, together with the word list comprehensive of all the texts belonging to the same groups above listed. I pressed on *Make a keyword list now* and the module returned the list of the keywords found comparing the source text and the target corpus. It is worth mentioning that, as we will see, keywords do not always correspond to the highest frequency words provided by WordList; in some cases, no keywords were provided.

Finally, Concord was used to obtain all the possible concordances of the selected keywords (see again section 3.4) in each text. First, I chose the reference text pressing on the *Choose Texts Now* button, and then I chose the word that had to be enquired. A list of all the occurrences of each keyword were obtained, together with the indication of the position of the first entry of the keyword both in number and in percentage, and the number and type of collocations. Concerning collocations, the top collocates were selected as an example.

It is thanks to this work on Concord that the software provided the number of words (word count) for each text.

3.3.1.2 Tint and Word

The second and the third tools used are the programmes for the measurement of the readability index, namely Tint for Italian texts, for experts first and for non-experts then, and Word for English texts, for experts first and for non-experts then.

The steps followed with Tint were the following: I opened the demo online, pressed on the *Process text* button and obtained a page divided into four sections. More specifically, the left side is occupied by the text that had been analysed; on the upper right side there is an indication of the number of sentences, the tokens, the words and the content words; on the lower right side there is a graph indicating the part-of-speech distribution. On the central right side of the page, there was the element of my interest, the *Difficulty levels*, that is the readability index Gulpease. Finally, on the lowest part of the page, there are three Linguistic notations sections, namely Part-of-Speech, the Named Entity Recognition and the indication of the Basic Dependencies.

Figure 3.2 represents an example of the readability statistics produced analysing the text proposed by the demo itself. As we can see from Figure 3.2, the lower the index is (closer to 0), the more difficult the text is; on the contrary, the higher the index is (closer to 100), the easier the text is: if the index is less than 40, the text is difficult for someone

at high school; if it is less than 60, it is difficult for someone at middle school. Finally, if it is less than 80, the text is difficult for someone at elementary school.

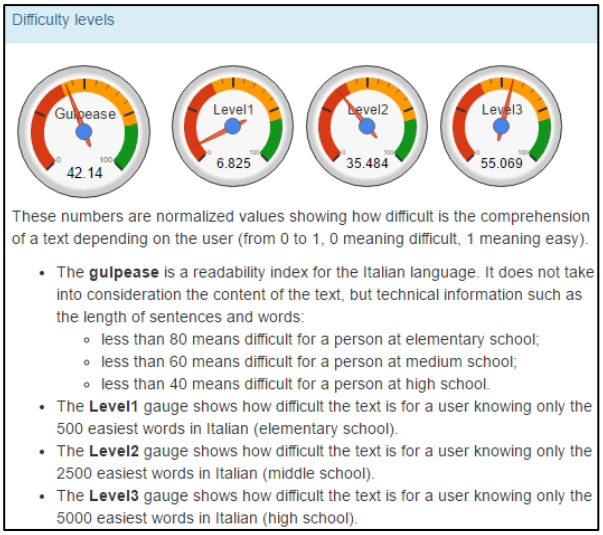


Figure 3.2 Example of the indication of the Gulpease readability index produced by Tint.

The steps followed with Word were the following: I opened each text in doc format, clicked *File* and *Options* in the menu: I selected *Proofing* and then *Check grammar with spelling* and selected the *show readability statistics* box. I ran the spelling and grammar checker and, by clicking on the appropriate icon, a table similar to the one in Figure 3.3 was produced. Figure 3.3 represents an example of the readability statistics produced analysing a short passage of the present chapter:

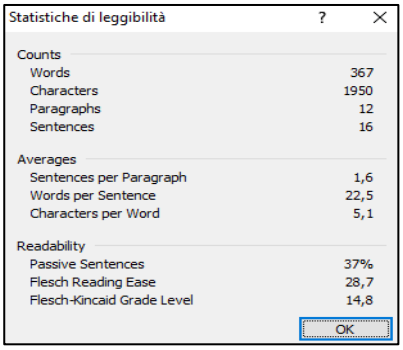


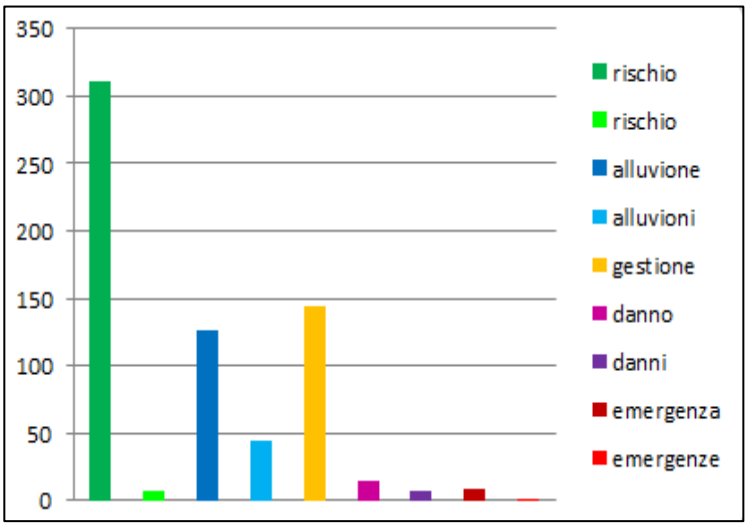
Figure 3.3 Example of the readability statistics produced with Microsoft Word.

As the readers can see, Word provides us with some information: the number of words, characters, paragraphs and sentences have been presented under the caption *Counts*; the average number of syllables per words and the number of words per sentence, taken into consideration for the readability index calculation are indicated in *Averages*, together with the average number of characters per word. In the *Readability* section, which is the one I am interested in, the percentage of passive sentences is

indicated, together with the Flesch Reading Ease (from 0 to 100), and the Flesch-Kinkaid Grade Level, which, in a nutshell, indicates the difficulty of the text based on U.S. school grade levels.

Finally, the individual readability results were reported, together with the word count previously obtained with Concord.

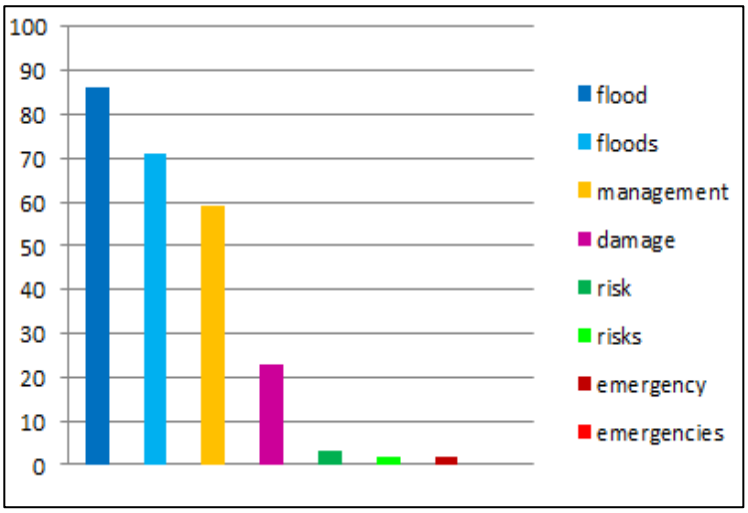
At the end of each analysis with the previously mentioned tools, the entries of the selected keywords collected in WordList and, when possible, in KeyWords were represented in the form of histograms. Figures 3.4 and 3.5 are examples of histograms: figure 3.4 represents the frequency of the keywords in the first Italian text for experts; figure 3.5 represents the frequency of the keywords in the first English text for experts.



INDEX

x = keyword	y = frequency
rischio	entries: 311
rischi	entries: 7
alluvioni	entries: 127
alluvione	entries: 44
gestione	entries: 144
danni	entries: 14
danno	entries: 7
emergenza	entries: 9
emergenze	entries: 1

Figure 3.4 Example of histogram: frequency of the Italian selected keywords – Text 1 for experts.



INDEX

x= keyword	y= frequency
flood	entries: 86
floods	entries: 71
management	entries: 59
damage	entries: 23
risk	entries: 3
risks	entries: 2
emergency	entries: 2
emergencies	entries: 0

Figure 3.5 Example of histogram: frequency of the English selected keywords – Text 1 for experts.

Both singular and plural forms of the same keyword will be represented; each form will be associated with a specific colour: dark and light green for risk/risks; orange for management; dark and light blue for flood/floods; fuchsia for damage and purple for *danni*; dark and light red for emergency/emergencies. These charts provide a visual idea of the frequency of each specific keyword in each text, allowing us to compare the selected keywords in each text, Italian and English texts for experts first, and Italian and English texts for non-experts then. These visual representations also help understand what the general tendency of emergency-related language is.

3.3.3 Comparing the Data

The results of the textual analysis will be compared in groups of three: after the individual analysis of the data of each one of the texts, the percentage of running words in all the 12 texts (obtained with WordList) will be presented; it will be seen in how many of the 12 texts each selected keyword (see section 3.2.3.1) occurred. The word count of all texts will also be provided. In the end, all the readability indexes obtained with Tint and Word will be presented, and the data will be compared.

The results and their discussion will be presented in Chapter 4.

Chapter 4

Textual Analysis of the Emergency Texts: Results and Discussion

4.1 Introduction

This chapter will focus on the analysis of the texts listed in Section 3.2.2 in Chapter 3. The results of my work will be presented, focusing on the textual analysis of Italian and English texts for experts and for non-experts: the analysis will begin with the six texts for experts, the three Italian ones first, and the three English ones after. It will end with the three Italian texts for non-experts and the three English ones for non-experts.

For each text, the data obtained using WordSmith Tools 4.0 will be provided, focusing specifically on frequency lists, keywords and collocates. Tint and Word will be used to obtain the readability index of, respectively, the Italian texts and the English ones. Finally, the obtained results will be commented and discussed, first individually, and then in groups of three.

4.2 Texts for Experts

The first documents that will be analysed are fact sheets for experts, *i.e.* texts providing technical information about a specific topic for a specific public. More specifically, the topic is emergency management, disasters caused by floods in particular; the targets are experts and officials in emergency management. These documents contain guiding principles on emergency management; they are based on government regulations and scientific and technical research and reports.

The six chosen texts are expected to have the following characteristics: an extensive use of emergency-related keywords, high degrees of syntactic and sematic complexity and, consequently, low readability indexes.

4.2.1 Italian Texts

The first three texts for experts that will be analysed are the Italian ones. The title and a short summary of each document will be provided, followed by the analyses with the software Oxford WordSmith Tools 4.0 and Tint.

The first tool that will be used is Oxford WordSmith Tools 4.0. First, the module WordList will deliver the following information: the list of the frequency of the Italian keywords is reported below (in alphabetical order):

- *alluvione/alluvioni*;
- *danno/danni*;

- *emergenza/emergenze*;
- *gestione*;
- *rischio/rischi*.

Second, the first three keywords delivered by KeyWords will be presented. Third, the concordances and the occurrences of the same keywords delivered by Concord will be listed. The second tool that will be used is Tint: it will offer the readability index of each text.

Finally, the results of the three Italian texts together will be discussed and compared, focusing on the percentage of running words and selected keywords, on word count and on the readability indexes of all texts. The analysis of the three Italian texts will follow.

Text 1

Autorità di Bacino del Fiume Po. (2016). *Piano per la valutazione e la gestione del rischio di alluvioni.* III A. Relazione di piano. Primo piano di gestione del rischio di alluvioni (PGRA 2015-2021). Sezione A (D.Lgs. n. 49/10 art 7, comma 3 lettera a).

This text is an official government emergency plan that provides principles, methods and activities for flood risk management. *PGRA* stands for *Piano di Gestione di Rischio Alluvioni*: the document aims to limit the negative consequences of flood-related emergencies on health, economy and environment, and allow the best mitigation and recovery possible.

The target readers belong to two categories: the authorities of the national Autorità di Bacino and the regions interested by floods (Padua's and Po's authorities in particular), and the officials of Protezione Civile. The document begins with a general description of flood and flood-related situations, later focusing on their management.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following data. The following list provides the frequency of the selected keywords. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one). The frequency number of each word and the correspondent percentage of frequency in the text will be presented.

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
rischio/rischi	**322**	
rischio (sing.) *rischi* (pl.)	315 7	0,81% 0,02%
gestione	**144**	0,47%
alluvione/alluvioni	**171**	
alluvioni (pl.) *alluvione* (sing.)	127 44	0,33% 0,11%

danno/danni	**20**	
danno (sing.) *danni* (pl.)	14 6	0,4% 0,2%
emergenza/emergenze	**10**	
emergenza (sing.) *emergenze* (pl.)	9 1	0,02% 0,00%

Figure 4.1 Frequency of the selected keywords provided by Wordlist – 1st Italian text for experts.

a.2 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus and a target corpus. The source corpus is the wordlist of the text itself, while the target corpus is the wordlist of all the 3 Italian texts for experts. The module highlighted 2 keywords; they will be reported below:

- *regionale*: frequency 27 = 0,07% of the text;

- *civile*: frequency 41 = 0,10% of the text.

The words above do not belong to the list of selected keywords analysed with WordList. *Regionale* and *civile* are, nonetheless, keywords: the organization that manages the issues addressed in the document is Protezione Civile Regionale; it is therefore possible that these are the words that appear most frequently in KeyWords. They can be considered valuable in this terminology study (they also belong to the Slándáil Terminology Wiki), but, since the aim is to understand what keywords and terms are relevant in emergency related texts and how they are used in such a context, focus will not be on them.

a.3 Concord

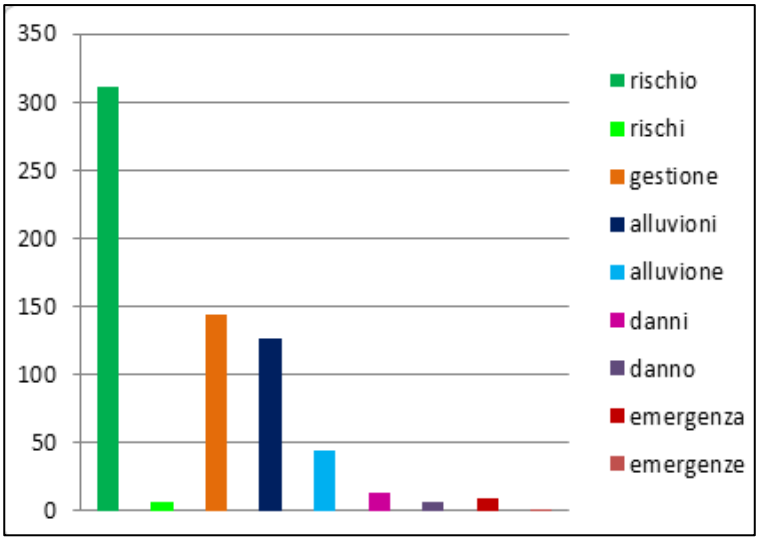
This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of instances of the word and the first most frequent collocate of each word.

KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
rischio/rischi				
rischio (sing.)	311	36.939' word = 100% of the text	90	*alluvioni* (57 times)
rischi (pl.)	7	36.721' word = 99% of the text	1	0
gestione	144	36.938' word = 100% of the text	43	*alluvioni* (58 times)
alluvione/alluvioni				
alluvioni (pl.)	127	36.904' word = 100% of the text	37	*gestione* (58 times)
alluvione (sing.)	44	36.700' word = 99% of the text	17	*rischio* (29 times)
danno/danni				
danno (sing.)	6	29.708' word = 80% of the text	5	0
danni (pl.)	14	34.673' word = 94% of the text	5	*conseguenti* (6 times)
emergenza/emergenze				
emergenza (sing.)	9	33.472' word = 90% of the text	5	*pianificazione* (6 times)
emergenze (pl.)	1	35.445' word = 96% of the text	0	0

Figure 4.2 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 1st Italian text for experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.3) is the representation of all the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same forms will be represented.This chart provides a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice of terms and keywords is related to the readability of the texts (which will be seen in section d.)



INDEX

x = keyword	y = frequency
rischio	entries: 311
rischi	entries: 7
gestione	entries: 144
alluvioni	entries: 127
alluvione	entries: 44
danni	entries: 14
danno	entries: 7
emergenza	entries: 9
emergenze	entries: 1

Figure 4.3 Histogram of the frequency of the Italian selected keywords – Text 1 for experts.

The previously obtained data will be analysed. More specifically, focus will be given to the WordList section (see Figure 4.1) and, when relevant, on the Concord section (see Figure 4.2).

The data reported in Figures 4.1 and 4.3 above clearly show that the most frequent keywords in this text are ***rischio/rischi*** (322), ***alluvione/alluvioni*** (171) and ***gestione*** (144). From these results, it can be observed that:

- ***rischio/rischi*** has a frequency of 322, and it is the keyword which appears most frequently in the text compared to the other selected keywords. This value highlights the fact that the majority of the information in this document focuses on plans and activities to reduce risks in flood-prone situations: risk is what the authorities aim to identify, limit and manage, in order to protect the environment and the people involved. *Rischio* appears 57 times in the collocation *rischio alluvioni*: experts aim, first, to identify the area which is vulnerable to this kind of natural hazard, and second, to study the possible implications of an emergency situation in such area. On the other hand, there is no collocation of the plural *rischi*; according to Concord, it only appears alone;

- ***alluvione/alluvioni*** has a frequency of 171: even though one would expect this keyword to be the most frequent one, flood being the main topic of the document, it is the second in order of frequency. There are neither definitions nor detailed explanations of this natural hazard, because the readers already possess such information. Moreover, the document focuses on how to deal with floods in flood-prone areas, and on the consequences and risks of such an event, more than on what floods are. This consideration is supported by the following data: there are 17 instances of the *alluvione*,

and the most frequent collocation is *rischio alluvione* (29 times); there are 37 instances of the plural and its top collocate is *gestione*;

- ***gestione*** has a frequency of 144 and it is the third keyword in order of frequency in the text. There are 43 instances of *gestione* in the text, and the collocation which appears most frequently is, as reported above, *gestione alluvioni* (37 times in the text). First of all, it can be suggested that this keyword is so frequent because it is central in every emergency management process. This document is a plan which focuses on all the phases of emergency management: the experts clearly aim to provide precise indications and effective solutions on how to deal with floods. Moreover, as shown by Concord, *gestione* appears in almost all the collocations of *emergenza/emergenze*, which has a frequency of 9 times in the text; the reason is clear: management is about emergency and disaster-related situations.

The keywords with the lowest frequency are the following: ***danni/danno***, with a total frequency of 21 (*danni*: frequency of 14; *danno*: frequency of 7), and ***emergenza/emergenza***, with a total frequency of 10 (*emergenza*: frequency of 9; *emergenza*: frequency of 1). From these results, it can be observed that:

- despite the low frequency, the presence of ***danno/danni*** indicates that officials are aware of the possible damage caused by disasters, and that they operate to reduce them and, when possible, to prevent them from happening;

- despite the low frequency, ***emergenza/emergenze*** remains a keyword in the discourse, but the focus in more on the prevention of flood risks, and less on the emergency itself; this is supported by the following data: the most frequent collocate of the singular *emergenza* is *pianificazione*, which shows the experts focus planning and management of an emergency situation.

c. Word Count

The second variable considered is the word count, that is the number of words, both lexical and grammatical, in the text. This quantitative indication is useful in order to compare the length of the text and the percentage of occurrence of the selected keywords.

The result provided by Concord is: 39.061 words.

From the comparison the length of the text in words and the occurrence of the keywords previously analysed, it results that the number of times each selected keyword appears in the text is generally very low compared to the total number of words in the text. This depends on the fact that the most frequent words in the text are grammatical

words and not lexical words; grammatical words constitute the basic structure of the text by relating each part together. Moreover, it is known that specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent.

d. Readability Index

The third variable considered in the analysis is the readability index of texts. This value provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100 (see section 3.2.3.3.i.i for the formula): the higher the index, the easier it is to read the text for a specific category of people. The software that was used was Tint.

The *indice di leggibilità Gulpease* of this text is: 59.4.

The readability index of this text is between the values of 40 and 60: the value is less than 60 and less that 80; this means that the text is difficult for people who attend or attended middle school and elementary school respectively. On the other hand, the value is not less than 40, and this means that the text can be understood by people who attend or attended high school.

One might conclude that the readability index of this text is quite high, despite the fact that this document was written for national emergency-management authorities, therefore experts: in fact, it seems quite easy for people with a high level of education, from high school to university, to read. On the other hand, as expected, the text cannot reach easily children or elderly who didn't finish their schooling years: it seems that people who went to middle school and highschool could understand this text quite easily, but they would surely face some difficulties. Considering that the text targets the experts in emergency management, and not ordinary citizens and families, it can be observed that, first, the number of words in this text is high, and that its length might influence its complexity: the more words there are, the more sentences there are, and the more chances there are for the text to be syntactically and semantically more complex and more difficult to read. Moreover, the complexity of the text is related to its language and terminology: the lexicon contained in these texts is official and technical. It contains terms belonging, among others, to politics and environmental science. It can, of course, be read easily by people who have proficiency in it.

Text 2

Regione del Veneto. (2012). *Protocollo operativo per la gestione delle emergenze.* Redatto ai sensi della DGR N. 666/2012. Documento Operativo del Piano Regionale di Protezione Civile.

This text is an official emergency management plan for officials of Protezione Civile in Veneto. It focuses on all kinds of natural hazards, flood included. It is organized as follows: it provides information on the up-to-date government decree on emergency management, on the organization of Protezione Civile, and on the management of different emergency situations. The target readers are the officials of Protezione Civile Regionale.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

This list provides the frequency of the selected keywords. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one). The frequency number of each word and the correspondent percentage of frequency in the text will be presented.

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
emergenza/emergenze	**55**	
emergenza (sing.)	18	0,68%
emergenze (pl.)	37	0,68%
gestione	**22**	0,39%
rischio/rischi	**16**	
rischio (sing.)	13	1,23%
rischi (pl.)	3	0,05%
danno/danni	**10**	
danno (sing.)	0	0,00%
danni (pl.)	10	0,18%

alluvione/alluvioni *alluvione* (sing.) *alluvioni* (pl.)	0 0	0 0

Figure 4.4 Frequency of the selected keywords provided by Wordlist – 2nd Italian text for experts.

a.2 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 Italian texts for experts. The module highlighted the following 3 keywords; they will be reported below:

- *Civile*: frequency 84 = 1,51% of the text;

- *Regionale*: frequency 75 = 1,34% of the text;

- *Protezione*: frequency 84 = 1,51% of the text.

As can been above, the words listed above do not belong to the list of selected keywords proposed by WordList. *Protezione Civile Regionale* is the name of the organization that manages and responds to the emergencies denounced in the document; this justifies the fact that these words are considered keywords. They belong to the Slándáil Terminology Wiki and are important in this study, but there is no need to focus on them.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

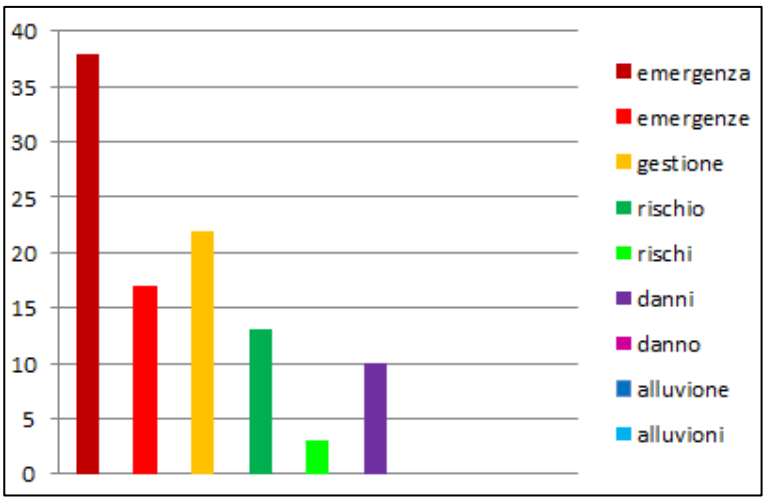
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
emergenza/emergenze *emergenza* (sing.)	38	5.152' word = 98% of the text	16	*coordinamento* (8 times)

emergenze (pl.)	17	5.264' word = 100% of the text	7	*gestione* (14 times)
gestione	22	2.562' word = 100% of the text	10	*emergenze* (14 times)
rischio/rischi				
rischio (sing.)	13	5.187' word = 99% of the text	5	*tipologie* (6 times)
rischi (pl.)	3	1.841' word = 34% of the text	1	0
danno/danni				
danno (sing.)	0	0	0	0
danni (pl.)	10	4.921' word = 93% of the text	2	0
alluvione/alluvioni				
alluvione (sing.)	0	0	0	0
alluvioni (pl.)	0	0	0	0

Figure 4.5 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 2nd Italian text for experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.6) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same lemmas will be represented. This chart provides a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice of terms and keywords are related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords	y= frequency
emergenza	entries: 38
emergenze	entries: 17
gestione	entries: 22
rischio	entries: 13
rischi	entries: 3
danni	entries: 10
danno	entries: 0
alluvione	entries: 0
alluvioni	entries: 0

Figure 4.6 Graphic of the frequency of the Italian selected keywords – Text 2 for experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.4) and, when relevant, on the Concord section (see Figure 4.5). The data reported in Figures 4.4 and 4.6 clearly show that the most frequent keywords are ***emergenza/emergenze*** (55), ***gestione*** (22) and ***rischio/rischi*** (16). From these results, it can be seen that:

- the frequency of ***emergenza/emergenze*** is 55: it is the keyword which appears most frequently in the text. This text deals with all kinds of emergencies caused by natural hazards: emergency itself is, therefore, the topic on which experts need and aim to focus the most. The following results support this consideration: Concord proposed 16 instances of *emergenza* in the text*;* the most frequent collocation is *coordinamento emergenza* (it appears 8 times). In WordList, *emergenze* (pl.) has a frequency of 17; the most frequent collocation is *gestione emergenze* (14 times): these data above (and also the one below) show that experts are mainly interested in what how to manage emergencies;

- ***gestione*** has a frequency of 22 and it is the second keyword in order of frequency. As already suggested, this documents aims to propose the plan to be used in emergency situations and, to be more specific, in emergency management; *gestione* appears, therefore, central. There are 10 instances of *gestione* in the text and the main collocation (14 times) is *gestione emergenze* (as suggested before): these keywords often appear together, and this increases the percentage of frequency, and of importance, of both;

- the total number of frequency ***rischio/rischi*** is 16; it is the third keyword in order of frequency. *Rischio* (singular) has a frequency of 13. Its plural, *rischi*, has a frequency of 3. This result is influenced by the purpose of the document: it aims to provide information for plans and activities to reduce the impact of natural hazard on the

Region. *Rischio* appears 10 times in the collocation *tipologie di rischio* , and it is very often followed by natural hazards terms: it is evident that experts aim to identify, limit and manage all the possible types of risks of an emergency situation and its consequences.

The keywords with the lowest frequency are the following:

- ***danno/danni*** has a very low frequency; there are only 10 entries of *danni* (plural) in the text. Concord provided only 2 instances of *danni*, and it appears alone for 5 times. The aim of the authors is to manage emergency situations and limit all the possible damage caused by them;

- ***alluvione/alluvioni*** has no entry in the text; this seems strange, since this text focuses on all kinds of emergency situations. Also, flood is the main natural hazard on which our study is based. Nonetheless, the indication of the fact that officials focus on emergency in general and that they aim to a general plan to be used in all kinds of emergency situations is relevant.

c. Word Count

The second variable considered is the word count, that is the number of words, both lexical and grammatical, in the text.

The result provided by Concord is: 5.578 words.

From the comparison the length of the text in words and the occurrence of the keywords previously analysed, it results that the number of times each selected keyword appears in the text is generally very low compared to the total number of words in the text. This depends on the fact that, clearly, the most frequent words in the text are grammatical words and not lexical words. Moreover, it is known that specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent.

d. Readability Index

The third variable considered is the readability index of the text, which provides a quantitative and objective analysis of the difficulty of texts on a scale from 1 to 100: the higher the index, the easier it is to read the text for a specific category of people. The software that was used was Tint.

The *indice di leggibilità Gulpease* of this text is: 64.1.

The readability index of this text is between the values of 60 and 80: if the value is less than 80, the document is difficult for people who attend and attended elementary school. On the other hand, it is a bit higher than 60, and this means that it can be read, respectively, by people who attend or attended middle school and high school. All in all, despite the fact that the target readers are the experts of Protezione Civile, that the terminology is technical, and that the text is long and complex, the readability index is not as high as one might think. Therefore, the text can be read by people with a relatively low degree of education.

Text 3

Ministero dell'Ambiente, della Tutela del Territorio e del Mare. (2013). *Documento conclusivo del Tavolo Tecnico Stato-regioni.* Indirizzi operativi per l'attuazione della direttiva 2007/06/CE relativa alla valutazione ed alla gestione dei rischi da alluvioni con riferimento alla predisposizione delle mappe della pericolosità e del rischio di alluvioni (Decreto Legislativo n. 49/2010).

This text is a national emergency management plan for the evaluation and the management of flood-prone areas in Italy. The document takes into consideration the European and Italian legislations on flood management and proposes an effective plan for the creation of flood maps and their use. It provides information on the steps followed in the elaboration of the plan and, finally, on the effects of climate change on hydrology in Italy. The target of the document is experts belonging to the *Autorità di Bacino* and the Regions responsible for environmental management.

a. Oxford WordSmith Tools 4.0.

a.1 WordList

I uploaded the document in WordList and obtained the following findings. This list provides the frequency of the keywords I selected. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one):

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
rischio/rischi	**124**	
rischio (sing.)	118	1,09%
rischi (pl.)	6	0,06%
alluvione/alluvioni	**55**	
alluvione (sing.)	7	0,06%
alluvioni (pl.)	48	0,44%
danno/danni	**42**	

danno (sing.) *danni* (pl.)	34 8	0,43% 0,07%
gestione	**39**	0,36%
emergenza/emergenze *emergenza* (sing.) *emergenze* (pl.)	**2** 2 0	 0,02% 0,00%

Figure 4.7 Frequency of the selected keywords provided by Wordlist – 3rd Italian text for experts.

a.2 KeyWords

KeyWords proposes a list of words that appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 Italian texts for experts. The module highlighted the following 3 keywords; they will be report below:

- #: frequency 585 = 5,83% of the text;

- *danno*: frequency 34 = 0,31% of the text;

- *pericolosità*: frequency 77 = 0,71% of the text.

As the readers can see, only one of the words listed above belongs to the list of selected keywords proposed by WordList. # is a symbol that indicates numbers and it is very frequent due to numbers in tables, data and, of course, the numeration of pages; it is therefore not relevant. *Pericolosità* is a term that we can encounter in other documents linked to emergency management: it can be considered important in our terminology vocabulary, since it is semantically linked to risk and damage; but it does not belong to the list of our selected keywords. *Danno*, on the other hand, belongs to this list; it appears in 0,31% of the text and it will be discussed it later.

a.3 Concord

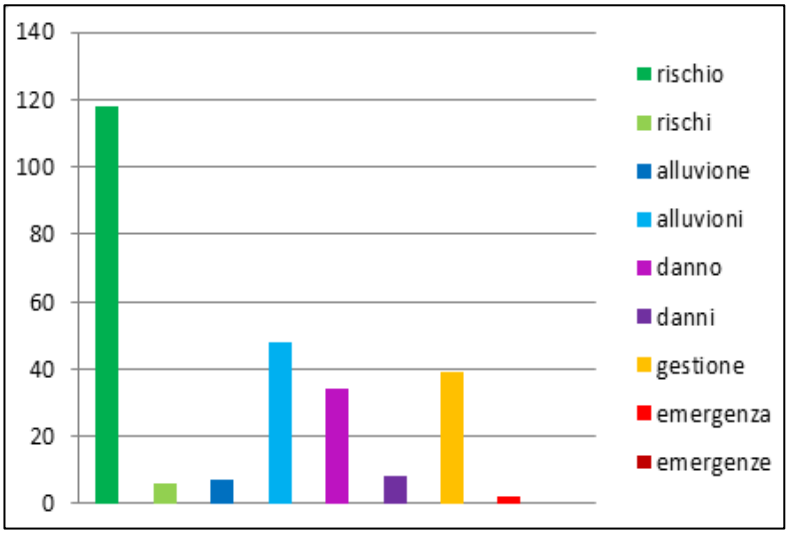
This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each word, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
rischio/rischi				
rischio (sing.)	119	9.935' word = 1% of the text	42	*alluvioni* (30 times)
rischi (pl.)	6	9.494' word = 96% of the text	4	*valutazione* (5 times)
alluvione/alluvioni				
alluvione (sing.)	48	9.273' word = 93% of the text	14	0
alluvioni (pl.)	7	9.451 word = 95% of the text	2	*rischio* (30 times)
gestione	39	9.555' word = 96% of the text	15	*alluvioni* (24 times)
danno/danni				
danno (sing.)	34	7.943' word = 81% of the text	7	*potenziale* (20 times)
danni (pl.)	8	8.677' word = 88% of the text	1	0
emergenza/emergenze				0
emergenza (sing.)	2	2.470' word = 25% of the text	2	
emergenze (pl.)	0	0	0	0

Figure 4.8 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 3rd Italian text for experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.9) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same keyword will be represented. These charts provide a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice of terms and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keyword	y = frequency
rischio	entries: 118
rischi	entries: 6
alluvione	entries: 7
alluvioni	entries: 48
danno	entries: 34
danni	entries: 8
gestione	entries: 39
emergenze	entries: 0
emergenza	entries: 2

Figure 4.9 Graphic of the frequency of the Italian selected keywords – Text 3 for experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.7) and, when relevant, on the Concord section (see Figure 4.8). The data reported in Figures 4.7 and 4.9 clearly show that the three most frequent keywords are ***rischio/rischi*** (124), ***alluvione/alluvioni*** (55) and ***danno/danni*** (42). From these results, it can be observed that:

- the total number of frequency of ***rischio/rischi*** is 124: *rischio* (singular) has a frequency of 118 and it is the keyword which appears most frequently in the text compared to the other selected keywords. Its plural, *rischi*, has a frequency of 6. According to Concord, the most frequent collocation of the singular is *rischio alluvioni* (30 times), while the most frequent collocation of the plural is *valutazione rischi* (5 times): it can be deduced that these results are connected to the primary aim of this text: studying and estimating the territory at risk of flooding, developing the right possible measures for that specific territory and reduce or prevent the impact of flood-related accidents;

- the total number of frequency of ***alluvione/alluvioni*** is 55: *alluvione* (singular) has a frequency of 7, while its plural, *alluvioni*, has a frequency of 48. Concord proposes 14 instances of *alluvioni*; the most frequent collocation is, in fact, *rischio di alluvioni* (30 times). The frequency of this keyword depends, once again, on the fact that flood is the major topic of the text. The repetition of this keyword is important in order to underline the natural hazard, that is the problem, that should be analysed;

- ***danno/danni*** has a total frequency of 42: *danno* (singular) has a frequency of 34 in the text; it has also been selected as a keyword by the KeyWords module. *Danni* (plural) has a frequency of 8. As already suggested, this document aims to reduce the

potential damage and the risk of damage caused by floods; it is therefore evident that this keyword appears with such high frequency, most of all in the collocation *danno potenziale* (20 times);

- ***gestione*** has a frequency of 39 and it is one of the most frequent keywords in the text. The plan that this document intends to propose regards the management of flood-related situations, more specifically of potential flood-prone areas. The term management is, evidently, central, most of all if linked to the hazard that has to be managed, that is flood: Concord proposes 15 instances of *alluvioni, and the* most frequent collocation is *gestione alluvioni* (24 times).

The keyword with the lowest frequency in the text is ***emergenza/emergenze***: *emergenza* has a frequency of 2; there is no entry of the plural form. Since it appears only in relation to the term *plans*, even though no collocate has been selected by Concord, it cannot be considered as central as it is in the previously analysed texts. Its low frequency is probably due to the fact that this text aims to the prevention of possible emergencies, and not on emergencies that have already occurred; it remains, nonetheless, a relevant in this study.

c. Word Count

The second variable considered is the word count, that is the number of words, both lexical and grammatical, in the text.

The result provided by Concord is: 10.875words.

From the comparison the length of the text in words and the occurrence of the keywords previously analysed, it results that the number of times each selected keyword appears in the text is generally very low compared to the total number of words in the text. Not only grammatical words and naturally more frequent than lexical words; also, specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent.

d. Readability Index

The third variable considered in our analysis is the readability index of the text. This value provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100. The software used is Tint.

The *indice di leggibilità Gulpease* of this text is: 46.8.

According to the value scale proposed by Tint, if the Gulpease index is less than 60, then it is difficult for somebody who attend/attended middle school to understand it. Since it is higher than 40, it can be deduced that this text is almost incomprehensible for people with a high school degree. This readability index is very low, and it confirms one of the hypotheses mentioned in the introduction: this document is a text for experts; it contains terms that belong to specific scientific and technical fields, and it is therefore not easy to read for people who do not have the sufficient proficiency. Also, it can be observed that the number of words in this text is quite high and its length might contribute to its complexity: the more words there are, the more sentences are, generally, complex, and the more the text results difficult to read.

4.2.1.i Comparative Analysis of the Three Italian Texts for Experts

In the following section, the three Italian texts for experts will be taken into consideration. The previously obtained results will be discussed following a comparative approach.

First of all, the information represented in the histograms will be taken into consideration: the frequency of all the keyword will be reported in a table, and the data will be compared considering each keyword individually. Second, focus will be on the word count. Finally, the readability indexes of all texts will be commented and discussed.

e. Analysis of the Frequency of Keywords

Figures 4.3, 4.6, 4.9 (above) give us a simple yet clear visual idea of the frequency of the selected keywords in each text. They also provide the occasion for a simultaneous comparison of the keywords and for understanding what the general tendency of emergency-related language and terminology is.

To be more specific, WordList did not only provide the individual frequency lists of the three texts: it also allowed us to study the frequency of the selected keywords in the three texts at the same time. The data are presented in the table below (Figure 4.10) in order of frequency (each form of the same word is considered individually):

KEYWORDS	FREQUENCY	FREQUENCY OF THE KEYWORD IN PERCENTAGE	NUMBER OF TEXTS IN WHICH THE KEYWORD APPEARS
Rischio	**446**	**(0,80%)**	**3 (100%)**
Gestione	**205**	**(0,37%)**	**3 (100%)**
Alluvioni	175	(0,32%)	2 (66,67%)
Alluvione	51	(0,09%)	2 (66.67%)
Emergenza	**49**	**(0,09%)**	**3 (100%)**
Danno	40	(0,07%)	2 (66.67%)
Danni	**32**	**(0,06%)**	**3 (100%)**
Emergenze	18	(0,03)	2 (67,77%)
Rischi	**16**	**(0,03%)**	**3 (100%)**

Figure 4.10 Frequency of the selected keywords in the three Italian texts for experts[2].

As the table above shows, the most frequent keywords in all the texts are, in order of frequency: ***rischio/rischi*** (462), ***gestione*** (205) and ***emergenza*** (49), and ***danni*** (32).

[22] **Data in bold** = keywords that appear in 3 texts; underlined data = keywords that appear in 2 texts out of 3; data in *italics* = keywords that appear in 1 text out of 3.

From these results, it can be deduced that:

- the singular form ***rischio*** (446) and the plural ***rischi*** (16) appear with the highest frequency (462 indicates the frequency of both singular and plural forms of the keyword) in all texts. Experts want to identify the possible risks of an emergency situation: identifying the consequences of the emergency could limit the damage and allow a faster and more effective response;

- the keyword ***gestione*** is the second in order of frequency (205). It is considered the central part of the emergency management process: finding effective solutions and providing clear indications on how to deal with emergency are the main goals of Protezione Civile;

- the singular ***emergenza***, which is, together with *gestione*, the central term in emergency management, despite its low frequency (49), it appears in all texts for experts, because the association Protezione Civile aims, first of all, to identify the problem and focus on it;

- the keyword ***danni*** (plural), despite its low frequency (32), indicates that officials are aware of the possible damage caused by disasters and that they operate to reduce them and, when possible, to prevent them from happening;

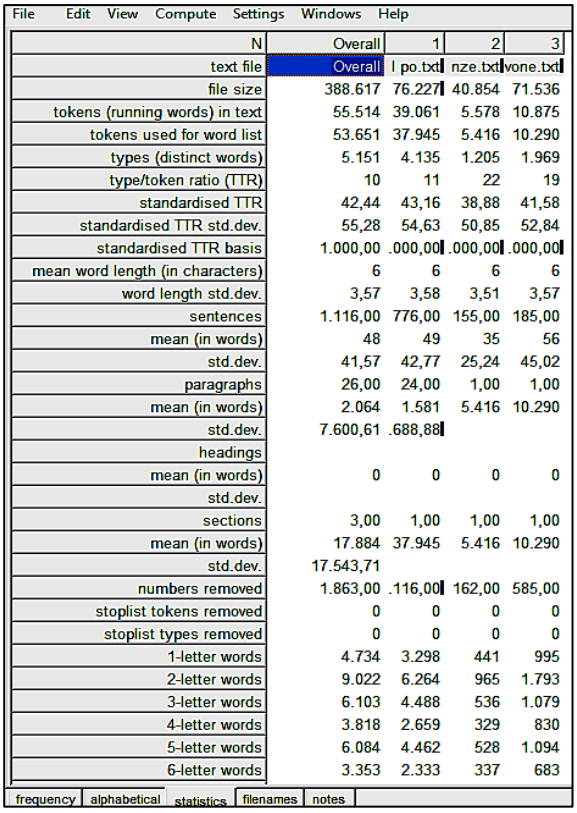
Figure 4.10 highlights a contradictory element: despite its very high frequency, the keyword *alluvione/alluvioni* (total frequency of 226) appears in two texts only. Flood is the main topic in all of the texts: it would consequently be expected *flood*/*floods* to appear as the most important and frequent keyword. Nevertheless, according to this analysis, this is not the case: it seems that, in text number 2, Protezione Civile chose to focus on emergency in general, rather than on flood in particular.

f. Word Count

The degree of difficulty of a text depends on different variables, both quantitative and qualitative: quantitative elements are the word count, the tokens, the words and the content words, the mean word length and the number and the mean of sentences and of paragraphs. Quantitative elements that can also be considered qualitative elements are the following: linguistic notations such as the part-of-speech and its distribution, the basic dependencies inside each element of the text, and passive sentences.

Figure 4.11 below is a screenshot of the Statistics Section in the WordList module, which exemplifies how the information is organized in the three texts. The elements I will draw attention on are: the tokens, that is the running words in the text, the mean

word length, the number of sentences, and the mean of sentences (in words) and of the paragraphs.



File Edit View Compute Settings Windows Help

N	Overall	1	2	3
text file	Overall	l po.txt	nze.txt	vone.txt
file size	388.617	76.227	40.854	71.536
tokens (running words) in text	55.514	39.061	5.578	10.875
tokens used for word list	53.651	37.945	5.416	10.290
types (distinct words)	5.151	4.135	1.205	1.969
type/token ratio (TTR)	10	11	22	19
standardised TTR	42,44	43,16	38,88	41,58
standardised TTR std.dev.	55,28	54,63	50,85	52,84
standardised TTR basis	1.000,00	.000,00	.000,00	.000,00
mean word length (in characters)	6	6	6	6
word length std.dev.	3,57	3,58	3,51	3,57
sentences	1.116,00	776,00	155,00	185,00
mean (in words)	48	49	35	56
std.dev.	41,57	42,77	25,24	45,02
paragraphs	26,00	24,00	1,00	1,00
mean (in words)	2.064	1.581	5.416	10.290
std.dev.	7.600,61	.688,88		
headings				
mean (in words)	0	0	0	0
std.dev.				
sections	3,00	1,00	1,00	1,00
mean (in words)	17.884	37.945	5.416	10.290
std.dev.	17.543,71			
numbers removed	1.863,00	.116,00	162,00	585,00
stoplist tokens removed	0	0	0	0
stoplist types removed	0	0	0	0
1-letter words	4.734	3.298	441	995
2-letter words	9.022	6.264	965	1.793
3-letter words	6.103	4.488	536	1.079
4-letter words	3.818	2.659	329	830
5-letter words	6.084	4.462	528	1.094
6-letter words	3.353	2.333	337	683

frequency | alphabetical | statistics | filenames | notes

Figure 4.11 Screenshot of the Statistics section in WordList.

The figure above shows that all three texts have a high word count: the general tendency is the prevalence of grammatical words and numbers on lexical words (selected keywords included); it is known that specific terminology constitutes, in fact, only 10%-20% of scientific and technical texts. It could also be suggested that the length of the texts might have influenced the level of complexity of the texts and, therefore, the readability index (see section g.).

g. Readability Index

I plotted the results obtained from the analysis of the readability index of each text in Figure 4.12:

TEXTS	Readability index (Gulpease)
Text 1	59.4
Text 2	64.1
Text 3	46.8

Figure 4.12 Readability Index for the three Italian texts for experts.

On a first impression, these texts do not appear difficult: there are only 40 points of distance from the maximum readability index (100 points). Nonetheless, considering the value scale proposed by Tint, the results will appear slightly different: in fact, the three indexes are all lower than 80; the texts cannot be understood by people who attend/attended elementary school. They are lower than 60, except for Text 2, which is slightly over 60: they cannot be understood by people who attend/attended middle school. Finally, they are higher than 40, and this means they can be read, with little difficulty, by people who attend/ attended highschool. The terminology in these texts belongs to scientific and technical domains such as, for example, politics and environmental science; therefore, not only are they syntactically and semantically complex, but also unreachable for people who do not possess any background.

In a nutshell, these texts can be read and partially understood by people with a high degree of education, but they cannot reach children or elderly people. Therefore, they do not target the general public, but people with a good knowledge of emergency-related terminology and, of course, experts.

4.2.2 English Texts

The analysis will proceed with the 3 English texts for experts. The title and a short summary of each document will be provided, followed by the analysis with Oxford WordSmith Tools 4.0 and Word. The first tool that will be used is Oxford WordSmith Tools 4.0.

First, the module WordList will deliver the following information: the list of the three most frequent words in the text and the list of the frequency of the English keywords reported below (in alphabetical order):

- *damage;*
- *flood/floods*;
- *emergency/emergencies*;
- *management*;
- *risk/risks*.

Second, the first three keywords delivered by KeyWords will be presented. Third, the concordances and the occurrences of the same keywords delivered by Concord will be listed.

The second tool is Word, which will offer the readability index of each text. Finally, the results of the three English texts together will be discussed and compared, focusing on the percentage of running words and selected keywords, on word count and on the readability indexes of all texts. The analysis of the three English texts will follow.

Text 1
FEMA – (March 1998). *Managing floodplain development through the National Flood Insurance Program.* Unit 1: Floods and floodplain management.

This text belongs to a study manual provided by the FEMA for people who already have experience in emergency management. More specifically, it is a guide for local officials who intend to apply to become emergency officials. The main topics of Unit 1 are the notions of floods and floodplain management. The text provides information on the most common types of floods, on the methods and activities planned in order to manage floods, and the specific terminology used in the course and in emergency management in general.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following data. This list provides the frequency of the selected keywords. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one). The frequency number of each word and the correspondent percentage of frequency in the text will be presented.

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
flood/floods	**157**	
flood (sing.)	86	1,12%
*floods (*pl.)	7	0,93%
management	**59**	0,77%
damage	**23**	0,30%
risk/risks	**5**	
risk (sing.)	3	0,04%
risks (pl.)	2	0,03%

emergency/emergencies	**2**	
emergency (sing.) *emergencies* (pl.)	2 0	0,03% 0,00%

Figure 4.13 Frequency of the selected keywords provided by Wordlist – 1st English text for experts.

a.2 Keywords

KeyWords proposes a list of words that appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 English texts for experts. The module highlighted 3 keywords; they will be reported below:

- *floods*: frequency 71 = 0,93% of the text;

- *water*: frequency 79 = 1,03% of the text;

- *flooding*: frequency 80 = 1,05% of the text.

Only the word *floods* is among the ones chosen as selected keywords. It is relevant to underline that words such as water and flooding also belong to the semantic field of floods. Water is, evidently, the basic element that constitutes this natural hazard; flooding is, on the other hand, the consequence of the flood. Nevertheless, even though they are relevant in this study, the analysis will not focus on them.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

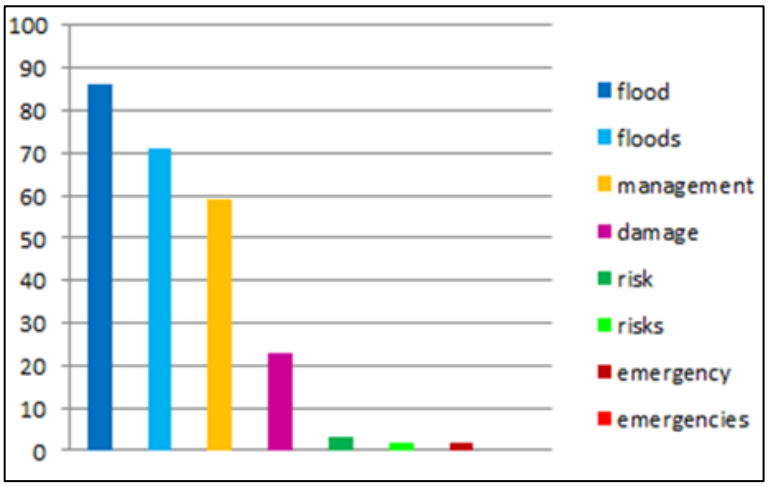
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
flood/floods				
flood (sing.)	86	7.186' word =	19	*control* (12 times)

floods (pl.)	71	89% of the text 7.190' word = 29% of the text	14	*management* (36)
Management	59	7.193' word = 71% of the text	11	*floodplain* (61 times)
Damage	23	6.723' word = 52% of the text	7	*flood* (8 times)
risk/risks				
risk (sing.)	3	6.564' word = 78% of the text	0	0
risks (pl.)	2	6.648' word = 70% of the text	0	0
emergency/emergencies				
emergency (sing.)	2	6.879' word = 93% of the text	0	0
emergencies (pl.)	0	0	0	0

Figure 4.14 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 1st English text for experts.

b. Analysis of the Frequency of Keywords

The following histogram (Figure 4.15) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same keyword will be represented. This image not only provides a visual idea of the frequency of each specific keyword in the text; It also helps understand what the general tendency of emergency-related language is and how the choice of keywords and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords	y= frequency
flood	entries: 86
floods	entries: 71
management	entries: 59
damage	entries: 23
risk	entries: 3
risks	entries: 2
emergency	entries: 2
emergencies	entries: 0

Figure 4.15 Graphic of the frequency of the English selected keywords – Text 1 for experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.13) and, when relevant, on the Concord section (see Figure 4.14). The data reported in Figures 4.13 and 4.15 above clearly show that the most frequent keywords are ***flood/floods*** (157), ***management*** (59) and ***damage*** (23). From these results, it can be observed that:

- ***flood/floods*** has a frequency of 157 and it is the keyword which appears most frequently in the text. As can be seen from the data provided by Concord, there are 19 instances of *flood* (sing.) in the text: it appears alone for 92 times; it can be deduced it appears alone in titles and in definitions. The most frequent collocation is *flood control* (12 times). The same applies to the plural *floods*, which has a frequency of 71 and it is the second keyword in order of frequency among our selected keywords. There are 14 instances of floods in the text; it appears 75 times alone and 53 times before and 36 times in *floods management*. These results were predictable: the analysed text is a manual focused specifically on floods and flood management: flood is what the authorities study and try to manage and control in order to protect the environment and the people involved;

- ***management*** has a frequency of 59 and it is the third keyword in order of frequency in the text. There are 11 instances of *management* in the text, and the collocation which appears most frequently is *floodplain management* (61 times in the text). Since this document is meant to provide information on how to deal with floods and floodplains situations, the reason why this keyword appears so frequently seems evident, most of all considering that its top collocate is floodplain. Future experts need to be provided clear indications on how to face such hazards;

- ***damage*** has a frequency of 23; there are 7 instances of *damage*; the most frequent collocation is *flood damage*, which appears 8 times in the text. Its low frequency depends on the following reason: experts should, first of all, know and solve any flood-related problems before disasters occur and cause any damage, most of all damage caused by flood.

The keywords with the lowest frequency are the following: ***risk/risks*** (frequency of 5), and ***emergency/emergencies*** (frequency of 2). Unit 1 of the manual provides a general overview of floods and flood management; consequently, it follows that the aspects of damage (see above), emergency and risks are not dealt with the same degree of attention of the most frequent keywords. Nonetheless, despite their low frequency, the presence of *risk*, *risks* and *emergency* confirms that officials are, as it is the case of *damage*, aware of the possible consequences and risks caused by floods.

c. Word Count

The second variable considered is the word count, that is the number of words, both lexical and grammatical, in the text.

The result provided by Concord is: 7.651 words.

From the comparison the length of the text in words and the occurrence of the keywords previously analysed, it results that the number of times each selected keyword appears in the text is generally very low compared to the total number of words in the text. Grammatical words are more frequent than lexical words, and specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent.

d. Readability Index

The third variable considered in the analysis is the readability index of the text. This value provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100 (see section 3.2.3.3.i.i for the formula). The higher the readability index, the easier it is read the text for a specific category of people. The software that was used is Word.

Word provided the following Flesch Reading Ease: 47.5

The value is from 100.00 to 50.00; more specifically it is between the values of 40.00 and 50.00: this means it is difficult to read for students who go to college (eighteen/twenty-two year-old students approximately). The degree of difficulty of this text is high, and it is unreachable to the general public, more specifically to children and

elderly people who did not go to college. The readability value obtained depends on the terminology of the text, which is technical and specific of environmental and emergency management terminology: the public it targets are trained adults that aim to become future experts.

Text 2

FEMA. (March 1998). *Managing floodplain development through the National Flood Insurance Program*. Unit 3: NFIP Flood studies and maps.

This text belongs to a guide provided by the FEMA for people who already have experience in emergency management; more specifically, it is for local officials who want to become emergency officials. The main topics that the National Flood Insurance Programme addresses in Unit 3 are the collection and study of data about floods, and the elaboration of maps of all the flood-prone areas, both along rivers and coasts. The authors also focus on the specific terminology used when elaborating maps and floodplain management programs.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following findings. The frequency number of each word and the correspondent percentage of frequency in the text will be indicated.

- *flood*: frequency of 384 = 3,00% of all the words in the text;

Flood, which belongs to the list of selected keywords.

The second list provides the frequency of the keywords I selected. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one):

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
flood/floods	**400**	
flood (sing.)	384	3,00%
*floods (*pl.)	16	0,03%
management	**17**	0,13%

risk/risks	**13**	
risk (sing.) *risks* (pl.)	12 1	0,09% 0,00%
emergency/emergencies	**3**	
emergency (sing.) *emergencies* (pl.)	3 0	0,02% 0,00%
damage	**2**	0,02%

Figure 4.16 Frequency of the selected keywords provided by Wordlist – 2nd English text for experts.

a.2 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 English texts for experts. The module highlighted the following 3 keywords; they will be reported below:

- *map*: frequency 142 = 1,11% of the text;

- *flood*: frequency 384 = 3,00% of the text;

- *maps*: frequency 118 = 0,92% of the text.

As the readers can see, only the word *floods* is among the ones that were chosen as selected keywords. The other two keywords provided by the module are *map* and *maps*: they appear as keywords because this text is about floodplain management programs and maps elaboration. These words (singular and plural of the same keyword) belong to the Slándáil Terminology Wiki and can be considered relevant in this study, but this analysis will not focus on them.

a.3 Concord

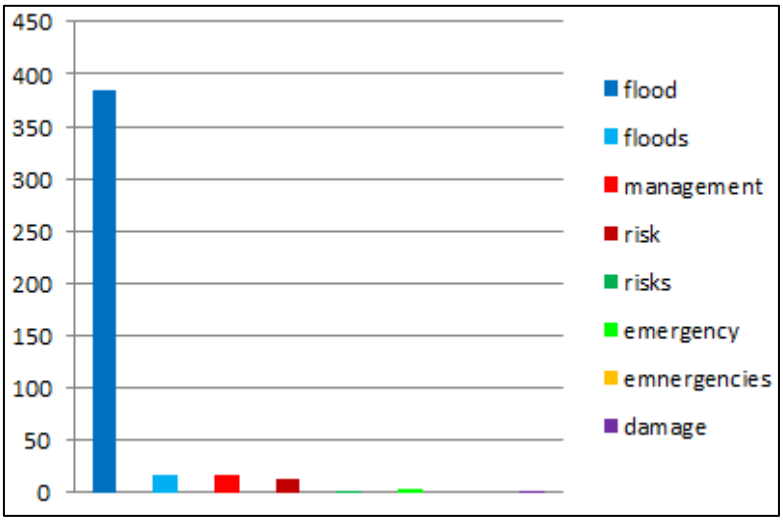
This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
flood/floods				
flood (sing.)	384	11.915' word = 29% of the text	120	*maps* (74 times)
floods (pl.)	16	10.396' word = 27% of the text	5	*year* (5 times)
management	17	11.713' word = 23% of the text	7	*floodplain* (15 times)
risk/risks				
risk (sing.)	12	11.789' word = 95% of the text	6	*flood* (12 times)
risks (pl.)	1	11.814' word = 89% of the text	0	0
emergency/emergencies				
emergency (sing.)	3	11.015' word = 67% of the text	0	0
emergencies (pl.)	0	0	0	0
damage	2	5.463' word = 100% of the text	0	0

Figure 4.17 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 2nd English text for experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.18) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same keyword will be represented. This figure gives us a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice of keywords and is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords	y= frequency
flood	entries: 384
floods	entries: 16
management	entries: 17
risk	entries: 12
risks	entries: 1
emergency	entries: 3
emergencies	entries: 0
damage	entries: 2

Figure 4.18 Graphic of the frequency of the English selected keywords – Text 2 for experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.16) and, when relevant, on the Concord section (see Figure 4.17).

The data reported in Figures 4.16 and 4.18 above clearly show that the most frequent keywords are ***flood/floods*** (400), ***management*** (17) and ***risk/risks*** (13). From these results, it can be deduced that:

- ***flood/floods*** has a frequency of 400 and it is the keyword which appears most frequently in the text. There are 120 instances of *flood* in the text. According to Concord, it appears in *flood maps* for 7 times; *maps* is also among the keywords in the text. The plural *floods* (plural) has a frequency of 16: there are 5 instances of *floods* in the text, and it appears 5 times in the collocation *flood year*. These results confirm that flood is the main theme of the manual, which, in fact, focuses specifically on flood management, more specifically the collection and study of data about floods, and the elaboration of maps to be used in floodplain management programs. Future experts will need to know how to identify and manage emergencies and their consequences;

- ***management*** has a frequency of 17 and it is the second keyword in order of frequency in the text. There are 7 instances of *management* in the text, and the collocations that appear most frequently is *floodplain management* (15 times in the text). Since this document is meant to give instructions on how to face floods and floodplains, the reason why this keyword appears more frequently than others seems evident;

- ***risk/risks*** has a frequency of 13. There are 6 instances of the plural *risks*, and the most frequent collocation is *flood risks* (12 times). While it is true that, when evaluating and developing maps and flood studies, experts study the flood zones that are more

subject to the risk of flooding, *risk* has a low frequency. This result might be due to the fact that experts aim to know and resolve the possible flood-related problems before the flood itself occurs.

The keywords with the lowest frequency are the following: ***emergency*** (frequency of 3) and ***damage*** (frequency of 2). Unit 3 of focuses on flood maps and flood-prone areas; it seems therefore natural that the aspects emergency, damage and risks are not dealt with specifically. Nonetheless, despite their low frequency, these keywords show that experts are aware of the possible negative consequences caused by floods, but their purpose is to study the areas subject to risks, monitor and prevent them.

c. Word Count

The second variable considered is the word count, that is the number of words, both lexical and grammatical, in the text.

The result provided by Concord is: 12.785 words.

From the comparison the length of the text in words and the occurrence of the keywords previously analysed, it results that the number of times each selected keyword appears in the text is generally very low compared to the total number of words in the text. Grammatical words are more frequent than lexical words, and specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent.

d. Readability Index

The third variable considered in the analysis is the readability index of the text. This value provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100: the higher the index, the easier the text is to read for a specific category of people. The software used was Word.

The Flesch Reading Ease in this text is the following one: 48.1.

The index is between the values of 50.00 and 60.00: this means it can be read without much difficulty by students from the 10^{th} to the 12^{th} grade. People who attended highschool can understand this text quite well, but adults who did not have access to higher education and children cannot understand it. The readability of this text is average, and the reason for this is related to the choice of terms and keywords in it: the terminology belongs to the field of emergency management, and it can be easily understood by the target for which the document was created, that is educated and trained adults that aim to become future experts.

Text 3

FEMA – (March 1998). *Managing floodplain development through the National Flood Insurance Program.* Unit 10: Disaster operations and hazard mitigation.

This text belongs to a study manual provided by the FEMA for people who already have experience in emergency management. More specifically, it is a guide for local officials who intend to apply for the position of emergency officials. The main topic of Unit 10, is the development of a disaster operations plan after the event of a flood. Authors instruct the readers on how to prepare a recovery and a hazard mitigation plan: the future experts need to be prepared, both practically and psychologically, to react to a flood-related disaster and to respond to it immediately.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following findings. This list provides the frequency of the keywords I selected. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one):

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
flood/floods	**108**	
flood (sing.)	104	1,19%
*floods (*pl.)	4	0,05%
emergency/emergencies	**30**	
emergency (sing.)	30	0,34%
emergencies (pl.)	0	0
damage	**29**	0,33%
management	**23**	0,26%

risk/risks	**5**	
risk(sing.)	4	0,05%
risks (pl.)	1	0,01%

Figure 4.19 Frequency of the selected keywords provided by Wordlist – 2nd English text for experts.

a.2 KeyWords

KeyWords proposes a list of the words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 English texts for experts. The module highlighted the following 3 keywords:

- *disaster*: frequency 89 = 0,01% of the text.

- *mitigation*: frequency 71 = 0,81% of the text.

- *disaster*: frequency 58 = 0,66% of the text.

Clearly, these keywords do not belong to our selected keywords. They are, nonetheless, relevant in this study: they belong to the terminology used in this work and to the Slándáil Terminology Wiki as specific emergency-related lexicon. They appear as keywords because this text is about disaster operations plans, more specifically recovery plans and hazard mitigation plans; anyway, this analysis will not focus on them.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

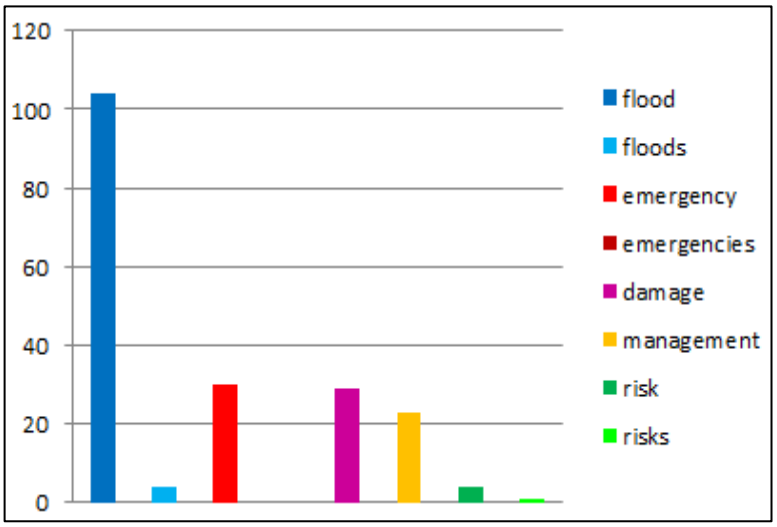
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
flood/floods				
flood (sing.)	104	8.154' word = 96% of the text	108	*mitigation* (14 times)

floods (pl.)	4	7.020' word = 86% of the text	0	0
emergency/emergencies				
emergency (sing.)	30	7.270' word = 50% of the text	9	*manager* (10 times)
emergencies (pl.)	0	0	0	0
damage	29	8.191' word = 78% of the text	6	*flood* (8 times)
management	23	7.041' word = 48% of the text	8	*floodplain* (9 times)
risk/risks				
risk (sing.)	4	6.745' word = 68% of the text	2	0
risks (pl.)	1	6.793' word = 34% of the text	0	0

Figure 4.20 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 3rd English text for experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.21) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same keywords will be represented. This image gives a visual idea of the frequency of each specific keyword in the text, and also helps understand what the general tendency of emergency-related language is and how the choice of keywords and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords	y = frequency
flood	entries: 104
floods	entries: 4
emergency	entries: 30
emergencies	entries: 0
damage	entries: 29
management	entries: 23
risk	entries: 4
risks	entries: 1

Figure 4.21 Graphic of the frequency of the English selected keywords – Text 2 for experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.19) and, when relevant, on the Concord section (see Figure 4.20). The data reported in Figures 4.19 and 4.21 above clearly show that the most frequent keywords are ***flood/floods*** (108), ***emergency/emergencies*** (30), ***damage*** (29) and ***management*** (23). From these results, it can be seen that:

- ***flood/floods*** has a frequency of 108 and it is the keyword which appears most frequently in the text. There are 34 instances of *flood* in the text. According to Concord, it appears 14 times in *flood mitigation*, which is the most frequent collocation. The same applies to the plural *floods*, which has a frequency of 4: there are 4 instances of *floods* in the text, but no collocation was provided by the module. This unit, as Unit 1 and Unit 3 before, focuses specifically on floods and flood management; it seems therefore natural that this is the keyword with the highest frequency;

- ***emergency/emergencies*** has a frequency of 30. There are 9 instances of *emergency;* the most frequent collocation is *emergency manager* (10 times). In this document, attention is specifically on how to deal with potential emergency situations through the elaboration of emergency plans, and the role of emergency managers is essential; the quite high frequency of the keyword *emergency* and of the collocation is thus justified;

- ***damage*** has a frequency of 29. There are 6 instances of *damage;* the most frequent collocation is *flood damage* (8 times). In the process of the creation of flood management plans, the awareness of the possible damage on the environment and, most of all, on the people victims of the disaster is fundamental. The evaluation of damage is central also after a disaster has occurred, because it allows the experts to understand

what the situation is and react accordingly. The frequency of *damage* is very low compared to the one of *flood/floods*, but it is, nonetheless, significant;

- ***management*** has a frequency of 23 in the text. There are 8 instances of *management* in the text, and the collocation that appears most frequently is *floodplain management* (9 times). Despite its low frequency, the element of management is central: in fact, this text aims to provide information on how to develop the proper recovery and mitigation plans.

The keyword with the lowest frequency is ***risk/risks*** (frequency of 5). Unit 10 of the manual focuses on emergency management planning and reaction; risk is less relevant in this context, since the aim is to react to the disaster caused by floods. The attitude towards to flood-related disasters is, one might say, more positive than negative.

c. Word Count

The second variable considered was the word count, that is the number of words both lexical and grammatical, in the text.

The result provided by Concord is: 8.770 words.

From the comparison the length of the text in words and the occurrence of the keywords previously analysed, it results that the number of times each selected keyword appears in the text is generally very low compared to the total number of words in the text. Grammatical words are more frequent than lexical words, and specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent.

d. Readability Index

The third variable considered in our analysis is the readability index of the text. It provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100. The software used to compute the Flesch Reading Ease was Word.

The result is the following one: 41.1.

This index is between the values of 40.00 and 50.00 (it is closer to 40.00, which is the equivalent to college students, approximately): this means it can be read without much difficulty by students from the college, but that it is difficult for others. People who went to highschool and started college can understand this text quite well, but adults who did not have access to higher education and children cannot read it. This low

readability index surely depends on the specific terminology contained in the text, affordable only by future experts and by highly educated people.

4.2.2.i Comparative Analysis of the Three English Texts for Experts

In the following sections, all three English texts for experts will be taken into consideration. The previously obtained results will be discussed following a comparative approach. First of all, the data represented in the histograms will be considered: the frequency data of all the keywords will be reported in a table, and the data will be compared considering each keyword individually. Second, the readability index of all texts will be discussed.

Figures 4.15, 4.18 and 4.21 (presented above) give a simple yet clear visual idea of the frequency of the selected keyword in each text. They also provide the occasion for a simultaneous comparison of the keywords and for understanding what the general tendency of emergency-related language and terminology is.

To be more specific, WordList did not only provide the individual frequency lists of the three texts: it also allowed us to study the frequency of the selected keywords in the three texts at the same time. The data are presented in the table below (Figure 4.22) in order of frequency (each form of the same keyword is considered individually):

KEYWORDS	FREQUENCY	NUMBER OF TEXTS	NUMBER OF TEXTS IN WHICH THE KEYWORD APPEARS
Flood	**574**	**1,97%**	**3**
Management	**99**	**0,34%**	**3**
Floods	**91**	**0,31%**	**3**
Damage	**54**	**0,18%**	**3**
Emergency	**35**	**0,12%**	**3**
Risk	**19**	**0,07%**	**3**
Risks	**4**	**0,01%**	**3**

Figure 4.22 Frequency of the selected keywords in all of the three texts[3].

As shown in the table above, all the keywords in the list appear, differently from the Italian keywords, in all texts. The keywords with the highest frequency are: ***flood*** (574), ***management*** (99), ***floods*** (91), ***damage*** (54), ***emergency*** (35) and **risk** (19). It can be deduced that:

- the reason why the keyword ***flood*** and its plural appear so often (574) is likely linked to the fact that the documents are FEMA's instructions for future experts in emergency management, and in the management of floods in particular. The value

[3] **Data in bold** = keywords that appear in 3 texts; <u>underlined data</u> = keywords that appear in 2 texts out of 3; data in *italics* = keywords that appear in 1 text out of 3.

suggests that American authorities' first interest is to identify the natural hazard and be prepared to face it with rapidity and efficiency. The texts provide several definitions of flood related terms, in order to give the readers a consistent scientific background;

- the high frequency of the keyword ***management*** (99) supports the observation previously made: as it is for the Italian texts, focus is placed upon the different stages of emergency management (mitigation, preparedness, response, recovery in Chapter 1) and on what the government and the authorities can do to make every step of this process productive and efficient;

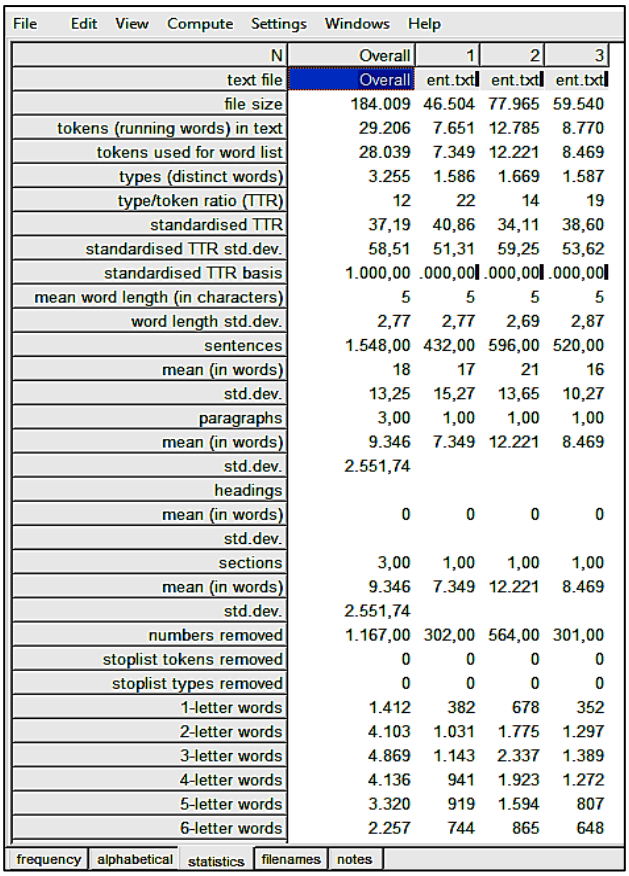
- ***damage*** appears quite often (53) and, like in the Italian texts, it indicates the awareness of the authorities of the possible negative consequences of a disaster. Officials should take actions against any damage, in order to reduce or prevent them from happening;

- ***emergency*** only appears 35 times in the texts. As already highlighted, the type of emergency experts have to deal with is flood, and they refer to this potentially dangerous natural hazard with its own name. Nonetheless, ***emergency*** seems to be relevant enough in all texts, as it is the main theme on which emergency management itself is based upon.

The keyword with the lowest frequency is *risk/risks* (21). Once more, officials and future officials decide to pay attention to emergency and on its management, more than on the risks to which people, common citizens in particular, are exposed. Focus seems to be on the solutions to the problem, rather than on the negative consequences of it.

f. Word Count

Figure 4.23 below is a screenshot of the Statistics Section in the WordList module, which exemplifies how the information is organized in the three texts. The elements that will be given attention are: the tokens, that is the running words in the text, the mean word length, the number of sentences, and the mean of sentences (in words) and of the paragraphs.



File Edit View Compute Settings Windows Help

N	Overall	1	2	3
text file	Overall	ent.txt	ent.txt	ent.txt
file size	184.009	46.504	77.965	59.540
tokens (running words) in text	29.206	7.651	12.785	8.770
tokens used for word list	28.039	7.349	12.221	8.469
types (distinct words)	3.255	1.586	1.669	1.587
type/token ratio (TTR)	12	22	14	19
standardised TTR	37,19	40,86	34,11	38,60
standardised TTR std.dev.	58,51	51,31	59,25	53,62
standardised TTR basis	1.000,00	.000,00	.000,00	.000,00
mean word length (in characters)	5	5	5	5
word length std.dev.	2,77	2,77	2,69	2,87
sentences	1.548,00	432,00	596,00	520,00
mean (in words)	18	17	21	16
std.dev.	13,25	15,27	13,65	10,27
paragraphs	3,00	1,00	1,00	1,00
mean (in words)	9.346	7.349	12.221	8.469
std.dev.	2.551,74			
headings				
mean (in words)	0	0	0	0
std.dev.				
sections	3,00	1,00	1,00	1,00
mean (in words)	9.346	7.349	12.221	8.469
std.dev.	2.551,74			
numbers removed	1.167,00	302,00	564,00	301,00
stoplist tokens removed	0	0	0	0
stoplist types removed	0	0	0	0
1-letter words	1.412	382	678	352
2-letter words	4.103	1.031	1.775	1.297
3-letter words	4.869	1.143	2.337	1.389
4-letter words	4.136	941	1.923	1.272
5-letter words	3.320	919	1.594	807
6-letter words	2.257	744	865	648

frequency alphabetical statistics filenames notes

Figure 4.23 Screenshot of the Statistics section in WordList.

On the basis of the considerations made for each text individually, we can conclude that the medium number of times each keyword appears in each text is generally lower than the total number of words, exception made for ***flood/floods***. This is due to the fact specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent. It could also be suggested that the length of the texts might have influenced the level of complexity of the texts and, therefore, the readability index (see section g.).

The elements presented above acquire more meaning when related to the readability index analysis, that were plotted in Figure 4.24 below:

TEXTS	Readability (Flesch Reading Ease):
Text 1	47.5
Text 2	48.1
Text 3	41.1

Figure 4.24 Readability Index for English texts for experts.

As can be seen above, there are almost 60 points of distance from the maximum readability index (100): it is evident that the readability of these texts is low. In fact, the three indexes are all between the values of 50 and 60, and this means are fairly difficult for people who attend/attended the 10^{th}, the 11^{th} and the 12^{th} grade. This result depends on the terminology contained in the texts, which belongs to scientific and technical domains. This choice of terminology is clear: the documents were created by experts for future experts; the degree of difficulty and the choice of terminology is therefore higher that texts for ordinary citizens and children.

In a nutshell, these texts can be read and partially understood by people with a high degree of education, but they cannot reach children or elderly people. Therefore, like the Italian ones, they do not target the general public, but students with a good knowledge of emergency-related terminology and, of course, experts.

4.3 Texts for Non-Experts

The analysis will proceed with fact sheets for non-experts. The topic remains emergency management, disasters caused by floods in particular. The target is, on the other hand, the general public, more specifically families and children. These documents are texts with an informative and a didactic aim: they are based on information contained in texts for experts and provide instructions and guidance on what an emergency is and how it can be faced.

The six texts are expected to have the following characteristics: a limited use of emergency-related language and terminology, low degrees of syntactic and sematic complexity and, consequently, high readability indexes.

4.3.1 Italian Texts

The first texts for non-experts that will be analysed are Italian texts. The same method used for Italian texts for experts will be followed: the title of each document will be provided, followed by the analysis with WordSmith Tool 4.0 and Tint.

The list of the Italian selected keywords is below:

- *alluvione/alluvioni;*
- *danno/danni;*
- *emergenza/emergenze;*
- *gestione;*
- *rischio/rischi.*

After the presentation of the results for all the three Italian texts, they will be discussed and compared. The analysis of the three Italian texts for non-experts will follow.

Text 4

Janinski R. R., Tommasoli L., Di Tomizio-More B. (2004). *Come Deve Comportarsi un Cittadino PRIMA, DURANTE E DOPO un'Emergenza*.

This fact sheet is the result of the collaboration between two experts of Protezione Civile, an art director specialised in multimedia communication and the Associazione Nazionale Coordinamento Camperisti. The aim is to provide clear, synthetic and practical indication of self-protection in all kinds of emergency situations. Each potential emergency situation has own its specific section in the text; colourful images and drawings are provided, together with essential instructions on what to do to face them. The targets of this text are common citizens, including, for example, children, the elderly, students and workers.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following data. This list provides the frequency of the selected keywords. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one). The frequency number of each word and the correspondent percentage of frequency in the text will be presented.

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
emergenza/emergenze	**51**	
emergenza (sing.)	45	0,53%
emergenze (pl.)	6	0,07%
alluvione/alluvioni	**8**	
alluvione (sing.)	8	0,09%
alluvioni (pl.)	0	0

rischio/rischi	**6**	
rischio (sing.) *rischi* (pl.)	5 1	0,06% 0,01%
danno/danni	**3**	
danno (sing.)[4] *danni* (pl.)	2 1	0,02% 0,01%
gestione	**0**	0

Figure 4.25 Frequency of the selected keywords provided by Wordlist – 1st Italian text for non-experts.

a.2 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 Italian texts for non-experts.

No keywords were provided by the software.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

[4] *Danno is not the singular of danno/danni, but the 3rd plural person of the verb dare.* This is why we will not consider it in our study.

KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
emergenza/emergenze				
emergenza (sing.)	45	7.918' word = 98% of the text	14	*scorte* (8 times)
emergenze (pl.)	6	7.482' word = 30% of the text	1	0
alluvione/alluvioni				
alluvione (sing.)	8	3.115 word = 32% of the text	6	*caso* (7 times)
alluvioni (pl.)	0	0	0	0
rischio/rischi				
rischio (sing.)	5	5.568' word = 79% of the text	5	0
rischi (pl.)	1	1.554' word = 32% of the text	0	0
danno/danni				
danno (sing.)	0	0	0	0
danni (pl.)	1	7.848' word = 61% of the text	0	0
gestione	0	0	0	0

Figure 4.26 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 2nd Italian text for non-experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.27) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same keyword will be represented. This image gives a visual idea of the frequency of each specific keyword in the text, and also helps understand what the general tendency of emergency-related language is and how the choice of keywords and keywords is related to the readability of the texts (which will be seen in section d.).

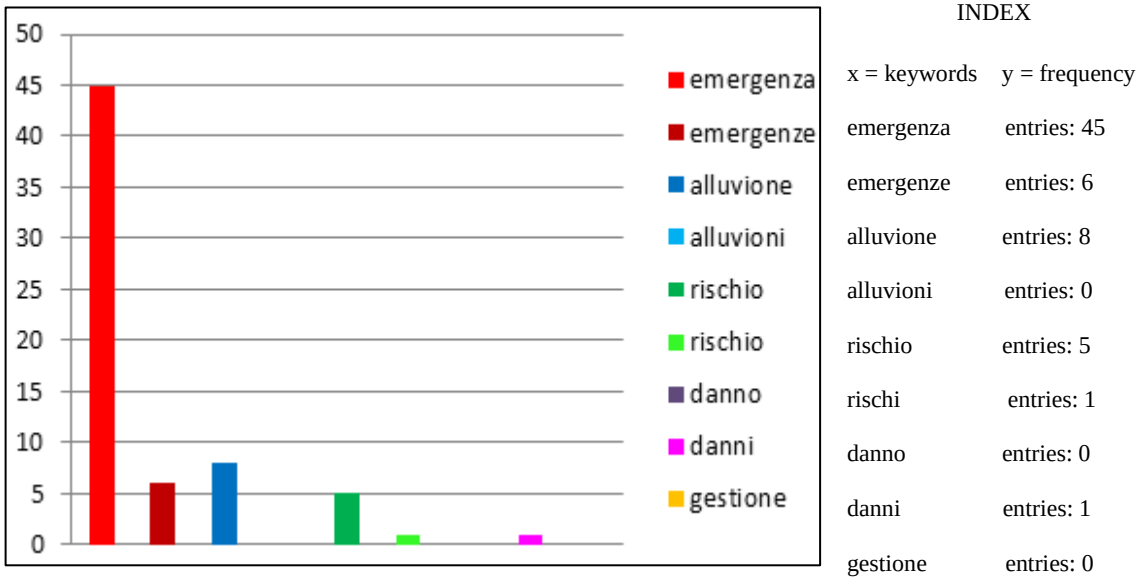


Figure 4.27 Graphic of the frequency of the Italian selected keywords – Text 4 for non-experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.25) and, when relevant, on the Concord section (see Figure 4.26). The data reported in Figures 4.25 and 4.27 clearly show that the most frequent keywords are ***emergenza/emergenze*** (51), ***alluvione/alluvioni*** (8) and ***rischio/rischi*** (6). From these results, it can be deduced that:

- ***emergenza/emergenze*** has a frequency of 51 and it is the first selected keyword in order of frequency in the text.There are 14 instances of *emergenza* in the text, and the top collocates is *scorte di emergenze* (8 times): the document aims to provide indication of self-protection in all kinds of emergency situations, and particular attention is placed on the precautions to be taken in a disaster situation. Concerning the plural *emergenze*, no collocate is indicated; the keyword only appears alone, according to the software. The main topic of the text is emergency in all of its forms: the authors focused in all kinds of disasters, from natural hazards to terroristic attacks; its high frequency therefore appears quite evident;

- ***alluvione/alluvioni*** has a frequency of 8 (only the singular appears) and it is the second keyword in order of frequency in the text. There are 6 instances of *alluvione* in the text. According to Concord, the most frequent collocation is *caso di alluvione* (7 times).While it is true that the text does not focus on floods only, and therefore the low frequency of *alluvione*/*alluvioni* can be expected, it appears nonetheless quite frequently in the subsection focused on this kind of natural hazard and it can therefore be considered important;

- ***rischio/rischi*** has a frequency of 6 and it is among the most frequent of our selected keywords. Its frequency depends on the fact that the element of risk and of the possible negative consequences of emergencies is important for citizens, but it is also true that the prevention of these risks should be reinforced;

- ***danno/danni*** (3) are the keywords with the lowest frequency in the text. Since authorities focus specifically on making the readers aware of the risks they are facing in case of an emergency and, most of all, on providing them with the information for dealing with them, the negative connotation of damage does not seem essential.

There is no occurrence of the keyword ***gestione*** in the whole text. Once again, experts encourage common citizens to be the protagonists of emergency situations; the aspect of management is left to the competent authorities.

c. Word Count

The second variable considered was the word count, that is the number of words both lexical and grammatical, in the text.

The result provided by Concord is the following: 8.511 words.

This indication is useful in order to compare the length of texts and the percentage of occurrence of the selected keywords: the number of times each selected keyword appears in the text is generally low compared to the total number of words in the text. This is due to the fact specific terminology occupies only 10-20% of the words of a text. Moreover, this text is for non-experts, and the frequency of specific language is evidently lower than in texts for experts.

d. Readability Index

The third variable considered in is the readability index of the text. It provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100: the higher it is, the easier the text is. The software used to do it was Tint.

The *indice di leggibilità Gulpease* in this text is the following one: 110.

The readability value of this text is even higher than 100, which is the maximum value on the scale. As a result, this document is not difficult at all to read, neither for children, nor for adults. The readability of the texts depends heavily on the choice of language and terminology operated by the authors: the simplicity of the text might be linked to the structure of the text, which is made of very short descriptions and lists of

instructions and images. Technical language and terminology exist, but they are used in a limited way in key sentences.

Text 5

Presidenza del Consiglio dei Ministri. Dipartimento della Protezione Civile. (2005). *Protezione Civile in Famiglia.*

This fact sheet has been created by Protezione Civile in collaboration with Regione Val d'Aosta. The aim is to raise awareness of the possible risks caused by different kinds of emergencies (from natural hazards to terroristic attacks) and to provide guidance on what to do and how to face them while waiting for the volunteers of Protezione Civile. For each emergency situation there is a specific chapter, with an introduction on the topic and a list of instructions on what to do before, during and after each emergency disaster. The targets of this text are all members of the family, from children to the elderly.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following data. This list provides the frequency of the selected keywords. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one). The frequency number of each word and the correspondent percentage of frequency in the text will be presented.

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
emergenza/emergenze	**38**	
emergenza (sing.)	33	0,97%
emergenze (pl.)	5	0,15%
rischio/rischi	**10**	
rischio (sing.)	3	0,09%
rischi (pl.)	7	0,21%

alluvione/alluvioni	**5**	
alluvioni (pl.) *alluvione* (sing.)	3 2	0,09% 0,06%
danno/danni	**2**	
danno (sing.) *danni* (pl.)	1 1	0,03% 0,03%
gestione	**0**	0

Figure 4.28 Frequency of the selected keywords provided by Wordlist – 2nd Italian text for non-experts.

a.2 KeyWords

KeyWords proposes a list of keywords, that is words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 Italian texts for non-experts.

The module highlighted 0 keywords.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

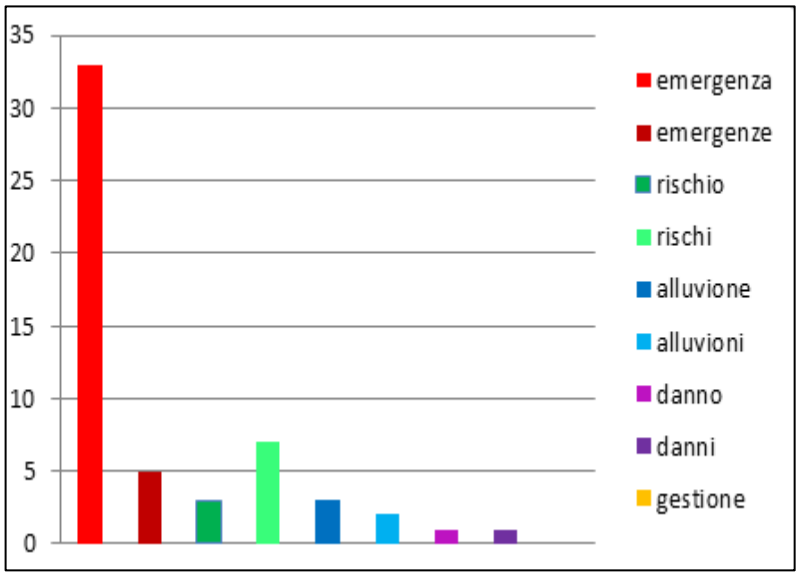
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
emergenza/emergenze				
emergenza (sing.)	33	3.236' word = 99% of the text	14	*protezione* (5 times)
emergenze (pl.)	5	3.100' word = 33% of the text	4	0
rischio/rischi				

rischio (sing.)	3	1.798' word = 82% of the text	0	0
rischi (pl.)	7	1.453' word = 87% of the text	1	0
alluvione/alluvioni				
alluvione (sing.)	3	1.316' word = 69% of the text	0	0
alluvioni (pl.)	2	956 word = 24% of the text	0	0
danno/danni				
danno (sing.)	1	1.424' word = 46% of the text	0	0
danni (pl.)	1	1.042' word = 8% of the text	0	0
Gestione	0	0	0	0

Figure 4.29 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 1st Italian text for non-experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.30) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same lemmas will be represented.This image gives a visual idea of the frequency of each specific keyword in the text, and also helps understand what the general tendency of emergency-related language is and how the choice of keywords and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords	y= frequency
emergenza	entries: 33
emergenze	entries: 5
rischio	entries: 3
rischi	entries: 7
alluvione	entries: 3
alluvioni	entries: 2
danno	entries: 1
danni	entries: 1
gestione	entries: 0

Figure 4.30 Graphic of the frequency of the Italian selected keywords – Text 5 for non-experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.28) and, when relevant, on the Concord section (see Figure 4.29). The data reported in Figures 4.28 and 4.30 clearly show that the most frequent keywords are ***emergenza/emergenze*** (38) and ***rischio/rischi*** (10). From these results, it can be observed that:

- ***emergenza/emergenze*** has a frequency of 38 and it is the keyword which appears most frequently in the text.There are 14 instances of *emergenza* in the text. According to Concord, it appears alone for 33 times and in *emergenza protezione* for 5 times. The main topic of the text is emergency in all of its forms: the authors focused in all kinds of disasters and one of the main aim of the text is to provide information on how to protect against them: its high frequency therefore appears quite evident;

- ***rischio/rischi*** has a frequency of 10 and it is the second selected keyword in order of frequency in the text. There are 7 occurrences of the singular *rischio* in the text; it appears alone for 7 times, according to Concord, and no collocation is indicated. It seems evident that, despite its low frequency compared to the total number of words in the text, the authors aimed to point out the danger of the possible negative consequences of each kind of emergency they mentioned: families have to be aware of the risks they are facing; only then they ca face emergencies in the best possible way;

Keywords such as ***alluvione/alluvioni*** (5) and ***danno/danni*** (1) are the ones with the lowest frequency in the text. Since the text does not focus on floods only, the low frequency of ***alluvione/alluvioni*** can be expected. Nonetheless, it appears quite frequently in the subsection focused on this kind of natural hazard, and it can therefore

be considered important. One would not expect that the keyword ***danno*/*danni*** appears only once in the text: authorities focus specifically on making the readers aware of the risks and providing them with the information to deal with them. The negative connotation of damage does not seem essential.

There is no occurrence of the keyword ***gestione***. The reason for this choice might be linked to the one for *danno* and *danni*: experts aim to shed light on the reaction of common citizens as first protagonists of an emergency; the aspect of management is left to the competent authorities.

c. Word Count

The second variable considered was the word count, that is the number of words both lexical and grammatical, in the text.

The result provided by Concord was: 3.399 words.

This indication is useful in order to compare the length of texts and the percentage of occurrence of the selected keyword s. The text is not as long as texts for experts, but our consideration is the same: the number of times each selected keyword appears in the text is generally low compared to the total number of words in the text. Grammatical words are more frequent than lexical words, and specific terminology and emergency-related keywords appear with a very low frequency.

d. Readability Index

The third variable considered is the readability index of the text. It provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100 (see Chapter 3.2.3.3.i.i for the formula). The software used to do it was Tint.

The *indice di leggibilità Gulpease* in this text is the following one: 53.5.

As already explained, the higher the readability index is, the easier the text is to read for a specific category of people. This index is between the values of 40 and 60: if the value is less than 60 and less than 80, this text appears to be quite difficult for someone who is at middle school and at the elementary school; it is not less than 40, and this means that it can be understood by people at highschool. As we have seen from the analysis of the frequency of the selected keywords, this text contains some technical

terms, but they do not require high proficiency. The readability of this text is, therefore, quite high, and this means it is not too difficult to read for families, except for children.

Text 6

Associazione Civilino. (2013). *Scheda Alluvione.*

This fact sheet is the result of the collaboration between Protezione Civile and Protezione Civile Umbria: the text is part of the project Civilino. It provides some simple and clear instructions on what to do and what not to do during and after a flood at home and outside. The targets are children: the aim is to encourage their awareness of emergency situations related to floods.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following data. This list provides the frequency of the selected keywords. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one). The frequency number of each word and the correspondent percentage of frequency in the text will be presented.

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
alluvione/alluvioni	**2**	
alluvione (sing.)	2	1.03%
alluvione (pl.)	0	0
danno/danni	**0**	
danno (sing.)	0	0
danni (pl.)	0	0
emergenza/emergenze	**0**	
emergenza (sing.)	0	0
emergenze (pl.)	0	0
gestione	**0**	0

rischio/rischi	**0**	
rischio (sing.)	0	0
rischi (pl.)	0	0

Figure 4.31 Frequency of the selected keywords provided by Wordlist – 3rd Italian text for non-experts.

a.2 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 Italian texts for non-experts.

No keywords were provided by the software.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word, which, in this specific case, is only one:

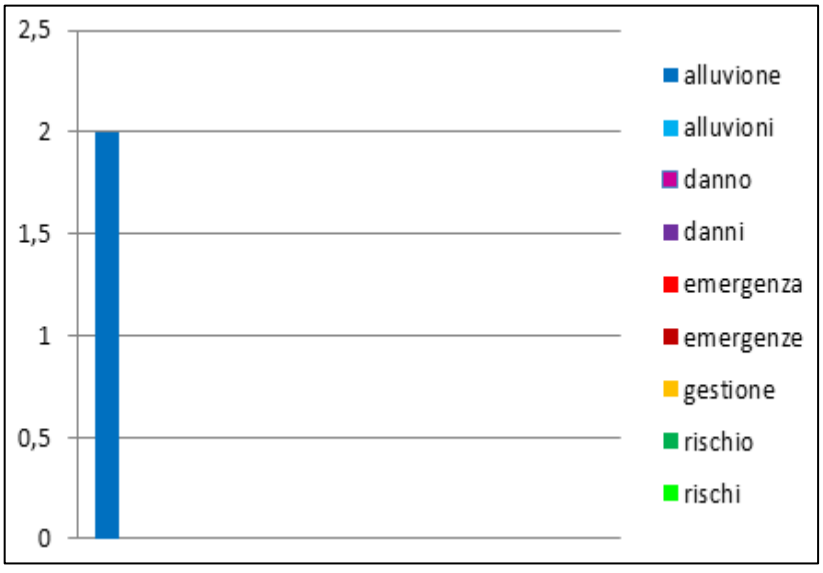
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
alluvione/alluvioni				
alluvione (sing.)	2	125' word = 64% of the text	0	0
alluvioni (pl.)	0	0	0	0
danno/danni				
danno (sing.)	0	0	0	0
danni (pl.)	0	0	0	0
emergenza/emergenze				
emergenza (sing.)	0	0	0	0

emergenze (pl.)	0	0	0	0
gestione	0	0	0	0
rischio/rischi				
rischio (sing.)	0	0	0	0
rischi (pl.)	0	0	0	0

Figure 4.32 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 3rd Italian text for non-experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.33) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same lemmas will be represented. This histogram provides a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice of keywords and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords	y = frequency
alluvione	entries: 2
alluvioni	entries: 0
danno	entries: 0
danni	entries: 0
emergenza	entries: 0
emergenze	entries: 0
gestione	entries: 0
rischio	entries: 0
rischi	entries: 0

Figure 4.33 Graphic of the frequency of the Italian selected keywords – Text 6 for non-experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.32) and, when relevant, on the Concord section (see Figure 4.33). The data reported in Figures 4.32 and 4.34 clearly show that

the only and most frequent keyword is ***alluvione/alluvioni*** (2). From these results, it can be observed that:

- ***alluvione/alluvioni*** has a frequency of 2 (only the singular appears) and it is the keyword which appears most frequently in the text. It is also the only keyword among the ones I selected; no collocation was provided by the software. Flood is the main topic of the fact sheet: Associazione Civilino wishes to inform the children about it; it aims to make them aware of the danger and to provide clear instruction on what to do before, during and after the emergency.

There is no other entry of the other keywords I selected, that is: ***emergenza/emergenze***, ***danno/danni***, ***gestione*** and ***rischio/rischi***. The reason why these keywords do not occur in the text will be discussed. As previously suggested that *emergenza/emergenze* is and should be one of the most important for the indication of a potentially dangerous situation. Nonetheless, the authors of this fact sheet chose not to focus on it; their main focus was, in fact, flood. The keywords *danno/danni* and *rischio/rischi* have a negative connotation; experts probably want the children to feel safe and aware of the right reaction to a flood-related emergency, without alarming them. Finally, *gestione* is not mentioned in the text: it is not up to the children to know much about how authorities deal with emergencies; the aspect of management is left to the competent authorities.

c. Word Count

The second variable considered was the word count, that is the number of words both lexical and grammatical, in the text.

The word count was provided by Concord and the result is: 195 words.

The number of times each keyword appears in the text is evidently very low compared to the total number of words in the text, especially considering that the only keyword that appears is *alluvione/alluvioni*. This text is for children and its length is limited: in this case, the quantity of the text is, despite the previous consideration, balanced for its purpose.

d. Readability Index

The third variable considered in our analysis is the readability index of the text. The software used to do it was Tint.

The *indice di leggibilità Gulpease* in this text is the following one: 74.

As already explained, the higher the readability index, the easier the text is to read for a specific category of people. This index is above 70, but it does not reach 80: if the value less than 80, this text appears to be quite difficult for students at the elementary school. The readability of this text is quite high, but it results difficult nonetheless. This result seems to contradict the purpose of the text itself: this document has been created for children, but it is difficult for elementary students to read. It can be deduced that this text is not a good example of clear and effective communication for the public it targets.

4.3.1.i Comparative Analysis of the Three Italian Texts for Non-Experts

Figures 4.27, 4.30 and 4.33 (above) give a simple yet clear visual idea of the frequency of the selected keywords in each text. They also provide the occasion for a simultaneous comparison of emergency-related language and terminology and for understanding what the general tendency is.

To be more specific, WordList did not only provide the individual frequency lists of the three texts: it also allowed us to study the frequency of the selected keywords in the three texts at the same time. The data are presented in the table below (Figure 4.34) in order of frequency (each form of the same keyword is considered individually):

KEYWORDS	FREQUENCY	FREQUENCY OF THE KEYWORDS IN PERCENTAGE	NUMBER OF TEXTS IN WHICH THE KEYWORD APPEARS
Alluvione	**13**	**0,11%**	**3**
Emergenza	78	0,64%	2
Emergenze	11	0,09%	2
Rischio	8	0,07%	2
Rischio	8	0,07%	2
Danno	3	0,02%)[5]	2
Danni	2	0,02%	2
Alluvioni	2	0,02%	2
Gestione	0	0	0

Figure 4.34 Frequency of the selected keywords in all of the three texts.

First of all, it is important to underline that the texts analysed have a specific target in mind: ordinary citizens, families and children. It should also be pointed out that text 3 contains very few words, and the frequency of the selected words must be consequently lower. As shown in the table above, the only keyword in all the three texts is ***alluvione*** (13). From this information, it can be observed that:

- ***alluvione*** (singular) appears in all texts, despite its low frequency (13). It is on the list of the main disaster related situations; all texts provide relevant and clear information on what it is and on what to do before, during and after a flood.

The frequency of all the other selected keywords will now be considered:

[5] In text 2 *danno* appears twice, but as the 3rd plural of the verb *dare* (present tense).

- emergenza (78),which is in two texts, seems to prevail as the central keyword and concept in emergency management, as it was for Italian texts for experts. This reveals something relevant: in fact sheets that aim to the general public, authors focus on what they consider to be the most important information people need to capture, understand and retain. They do not wish to alarm, as it may seem, but to awake people's consciousness and awareness of the problems they might have to face;

- rischio/rischi appear with low frequency (8) in two texts.

As suggested in the previous comment, authors emphasise in this particular case, the possible implications of an emergency and on its consequences. Citizens should be able to understand the risks and react to them in the best possible way;

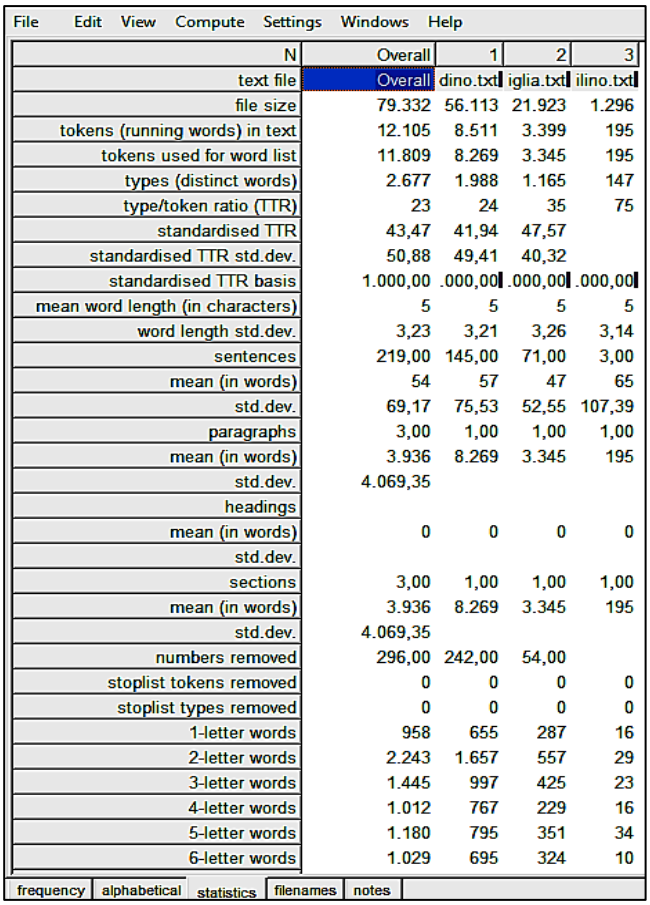
- danno (3)/danni (2) are not so frequent; the focus appears to be more on what to do to prevent an emergency and how to face it, and less on the damage it may cause.

The fact that *gestione* does not appear in any text confirms the observations made above: people are not interested in the management procedures followed by the Protezione Civile and by the authorities. People simply desire results, and their main concern is to be safe.

It should also be pointed out that no keywords were provided by KeyWords in the three texts; this might be due to some errors in the calculation process, or simply to the fact that the software did not detect any particularly frequent word in the texts.

f. Word Count

In the figure below (Figure 4.35) we can see a list of relevant information about the three texts analysed. The data were provided in the Statistics section of WordList, as an example of how the information in the texts is organized. The elements that will be taken into consideration are, once again, the tokens, that is the running words in the text, the mean word length, the number of sentences, the mean of sentences (in words) and of the paragraphs.



File Edit View Compute Settings Windows Help

N	Overall	1	2	3
text file	Overall	dino.txt	iglia.txt	ilino.txt
file size	79.332	56.113	21.923	1.296
tokens (running words) in text	12.105	8.511	3.399	195
tokens used for word list	11.809	8.269	3.345	195
types (distinct words)	2.677	1.988	1.165	147
type/token ratio (TTR)	23	24	35	75
standardised TTR	43,47	41,94	47,57	
standardised TTR std.dev.	50,88	49,41	40,32	
standardised TTR basis	1.000,00	.000,00	.000,00	.000,00
mean word length (in characters)	5	5	5	5
word length std.dev.	3,23	3,21	3,26	3,14
sentences	219,00	145,00	71,00	3,00
mean (in words)	54	57	47	65
std.dev.	69,17	75,53	52,55	107,39
paragraphs	3,00	1,00	1,00	1,00
mean (in words)	3.936	8.269	3.345	195
std.dev.	4.069,35			
headings				
mean (in words)	0	0	0	0
std.dev.				
sections	3,00	1,00	1,00	1,00
mean (in words)	3.936	8.269	3.345	195
std.dev.	4.069,35			
numbers removed	296,00	242,00	54,00	
stoplist tokens removed	0	0	0	0
stoplist types removed	0	0	0	0
1-letter words	958	655	287	16
2-letter words	2.243	1.657	557	29
3-letter words	1.445	997	425	23
4-letter words	1.012	767	229	16
5-letter words	1.180	795	351	34
6-letter words	1.029	695	324	10

frequency alphabetical statistics filenames notes

Figure 4.35 Screenshot of the Statistics section in WordList

As shown in the figure above, not all three texts have a high word count. The general tendency remains the same: grammatical words and numbers prevail on lexical words (our selected keywords included).

Nonetheless, considering the previous considerations, it is evident that the number of times each keyword appears in the text is generally lower than the total number of words in the text: that specific terminology occupies only 10-20% of the words of a text, even if the text is for experts and the use of terminology is, therefore, more frequent.

It can also be suggested that the length of the texts might have influenced the level of complexity of the texts and, therefore, the readability index (see section g.); in this specific case, the sentences are shorter and there are not many subordinates. It seems that the simpler the sentences are, the more use of specific technical terms can be made; consequently, the text is more difficult for an average reader.

g. Readability Index

I plotted the results obtained from the analysis of the readability index of each text in Figure 4.36:

TEXTS	Readability (Gulpease index):
Text 1	110
Text 2	53.5
Text 3	74

Figure 4.36 Readability Index for Italian texts for non-experts.

From the data above, it appears evident that the readability of only one text (text 1) is very high: it was written for non-experts and it can be understood by all members of a family. Text 3, a two-page text for children, has a high readability too, but it results difficult for children at elementary school: therefore, it does not accomplish its purpose. Concerning text 2, on the other hand, the readability index is not very far from the ones of texts for experts previously analysed. Text 2 for non-experts seems more difficult than texts 1 and 2 for experts. The differences are limited in percentage, but they highlight an important observation: texts for non-experts are not always easier to read, for the general public, than texts for experts.

4.3.2 English Texts

This analysis will end with the analysis of English texts for non-experts. The analysis method will be the same used for English texts for experts: the title of each document will be provided, followed by the analysis with WordSmith Tool 4.0 and Word.

The list of the English selected keywords is below:

- *flood/floods;*
- *damage;*
- *emergency/emergencies;*
- *management;*
- *risk/risks*.

The analysis of the three English texts for non-experts will follow.

Text 4

FEMA. (2004). *Are You Ready? An In-depth Guide to Citizen Preparedness*.

This document is a guide created by FEMA in order to help citizens be prepared in case of any type of hazard occurs. It is a manual which provides information on how to develop and use emergency plans in case of an emergency before, during and after its occurrence. It also provides information on how to build disaster supplies kits. This document can be useful for the general public.

a. Oxford WordSmith Tools 4.0.

a.1 Wordlist

I uploaded the document in WordList and obtained the following findings. The frequency number of each word and the correspondent percentage of frequency in the text will be indicated. This list provides the frequency of the keywords I selected; they are presented, of course, in order of frequency, singular and plural included:

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
emergency/emergencies	**156**	
emergency (sing.) *emergencies* (pl.)	125 31	0,31% 0,08%
risk/risks	**51**	
risk (sing.) *risks* (pl.)	42 9	0,11% 0,02%
damage	**41**	0,10%
flood/floods	**34**	
flood (sing.) *floods (*pl.)	22 12	0,06% 0,03%

management	**24**	0,06%

Figure 4.37 Frequency of the selected keywords provided by Wordlist – 1st English text for non-experts.

a.2 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 English texts for non-experts. The module highlighted the following 3 keywords:

- *disaster*: frequency 223 = 0,56% of the text;

- *emergencies*: frequency 156 = 0,39% of the text;

One keywords out of two, *emergencies*, belongs to the list of our selected keywords. *Disaster* appears as a keywords because this text is about emergency management and, more specifically, about the management of all different types of disasters. This word also belongs to the Slándáil Terminology Wiki and, even though it can be considered relevant in this study, it will not be studied in detail.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

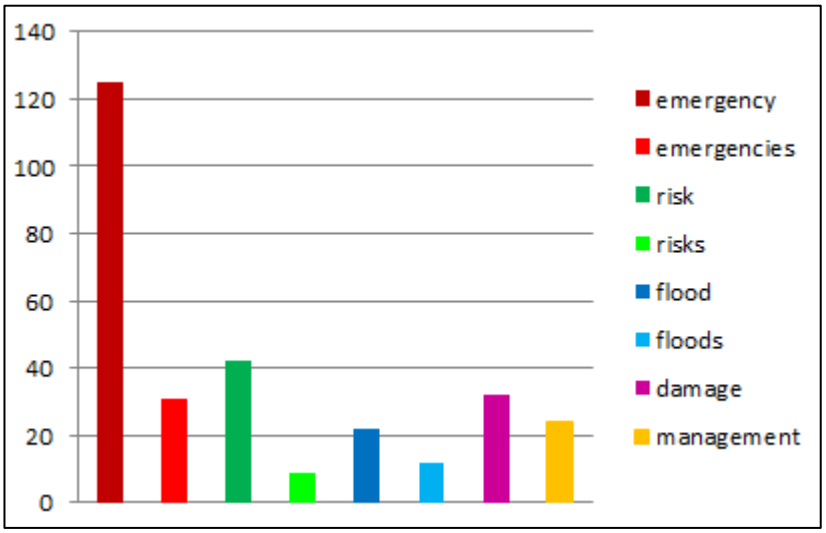
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
emergency/emergencies				
emergency (sing.)	125	37.276' word = 100% of the text	45	*management* (19 times)
emergencies (pl.)	31	34.289' word = 92% of the text	31	*chemical* (14 times)

risk/risks				
risk (sing.)	42	34.710' word = 93% of the text	10	*reduce* (5 times)
risks (pl.)	9	3.314' word = 89% of the text	3	0
damage	41	36.017' word = 97% of the text	10	*cause* (10 times)
flood/floods				
flood (sing.)	22	35.794' word = 96% of the text	4	*insurance* (6 times)
floods (pl.)	12	12.867' word = 34% of the text	6	0
management	24	8.834' word = 90% of the text	6	*emergency* (19 times)

Figure 4.38 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 1st English text for non-experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.39) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same keyword will be represented. This chart provides a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice of keywords and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords y = frequency

emergency entries: 125

emergencies entries: 31

risk entries: 42

risks entries: 9

flood entries: 22

floods entries: 12

damage entries: 32

management entries: 24

Figure 4.39 Graphic of the frequency of the English selected keywords – Text 4 for non-experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.37) and, when relevant, on the Concord section (see Figure 4.38). The data reported in Figures 4.37 and 4.39 clearly show that the most frequent keywords ***emergency/emergencies*** (161), ***risk/risks*** (51), ***damage*** (32) and ***flood/floods*** (34). From these results, it can be observed that:

- ***emergency/emergencies*** has a frequency of 161, and it is the most frequent keyword in the text. Also, this keyword is among the keywords selected by KeyWords. The most frequent collocation of the singular *emergency* is *emergency management* (19 times in the text); the most frequent collocation of the plural is *chemical emergencies* (14 times); these results appear evident: in fact, this text deals with all kinds of emergencies, from natural hazards to terroristic attacks. Emergency is, therefore, the topic on which the authors focus: citizens must be prepared to develop and use emergency plans before, during and after an emergency appears;

- ***risk/risks*** has a frequency of 51 and it is the second keyword in order of frequency; there are 42 occurrences of *risk* and 9 of *risks*, and the most frequent collocation of the singular in *reduce risk* (5 times in the text). Citizens should be aware of the dangers and the risks that an emergency might bring and how to prevent or limit them, and the frequency of these keywords is therefore justified;

- ***damage*** has a frequency of 32 and it is the third keyword in order of frequency; there are 41 occurrences of *damage*, and the most frequent collocation is *cause damage* (10 times). The reason for this can be linked to the high frequency of *risk/risks*: people in emergency situations need to evaluate and know the possible risks and damage of an emergency in order to face it and build the proper emergency plan;

- ***flood/floods*** has a frequency of 34 and it is the third keyword in order of frequency; the most frequent collocation of the singular is *flood insurance* (6 times). This result depends on the fact that this document is about all kinds of emergencies and does not have a specific topic. Nonetheless, this keyword appears with a relevant degree of frequency in the section focused on this kind of hazard, at it remains, therefore, central; moreover, experts give practical information on how to deal with the event and on how to apply for insurance in case of damage;

The keyword with the lowest frequency in the text is ***management***, that has a frequency of 24; there are 24 instances of *management* in the text, and it appears 19 times in the collocation *emergency management*. Since this document is meant to provide information on how to deal with emergencies and, more specifically, build and manage emergency plans, the reason why this keyword appears so frequently than others seems evident.

c. Word Count

The second variable that was considered was the word count, that is the number of words both lexical and grammatical, in the text.

The result provided by Concord is the following: 39.965 words.

It is evident that the number of times each keyword appears in the text is generally very low compared to the total number of words in the text. This consideration depends on the fact that the most frequent words in a text are grammatical words and not lexical words. It can also be noticed that this text is extremely long, but that the frequency of our selected keywords is balanced and there is not much difference between one keyword and another.

d. Readability Index

The third variable considered in the analysis is the readability index of the text. It provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100: the higher it is, the easier the text is. The software used to do it was Word.

The Flesch Reading Ease in this text is the following one: 80.9.

This index is between the values of 80.00 and 90.00: this means it can be read without much difficulty by students of the 6^{th} grade, and this means that it can reach all components of families, children and elderly included. It is high, and from this result it can be deduced that this text can be considered a good example of clear and (partially) effective communication.

Text 5

FEMA. (February 2007). *Fact Sheet: Floods*. FEMA 555.

This document has been created by the FEMA and can be found in the Fact Sheet section online. Its aim is to provide information about floods: first, it introduces how they can affect citizens and their lives. Second, it gives a list of more precise information on what to do before, during and after a flood-related emergency. It also gives emphasis to a 100-year flood, in order to reassure and encourage the citizens. The targets of this text are common citizens, adults in particular.

a. Analysis with Oxford WordSmith Tools 4.0

a.1 WordList

I uploaded the document in WordList and obtained the following data. This list provides the frequency of the selected keywords. They are in order of frequency (the frequency of singular and plural forms of the same keyword will be indicated separately, but they will be considered as one). The frequency number of each word and the correspondent percentage of frequency in the text will be presented.

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
flood/floods	**30**	
flood (sing.)	26	2,28%
*floods (*pl.)	4	0,53%
emergency/emergencies	**4**	
emergency (sing.)	4	0,35%
emergencies (pl.)	0	0,00%
risk/risks	**2**	
risk (sing.)	2	0,18%
risks (pl.)	0	0,00%
management	**2**	0,18%

damage	**2**	0,18%

Figure 4.40 Frequency of the selected keywords provided by Wordlist – 2nd English text for non-experts.

a.2 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus (the wordlist of the text itself) and a target corpus, that is the wordlist of all the 3 Italian texts for non-experts.

The only keyword found was:

- *floods*: frequency 26 = 2,28% of the text.

Floods is among the ones chosen as selected keywords; it is also the main topic of this fact sheet.

a.3 Concord

This section focuses on all the possible concordances of the selected keywords listed in section a.1. The singular and plural forms of the same keyword will be considered separately. For each keyword, the following elements will be listed: the number of occurrences and the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

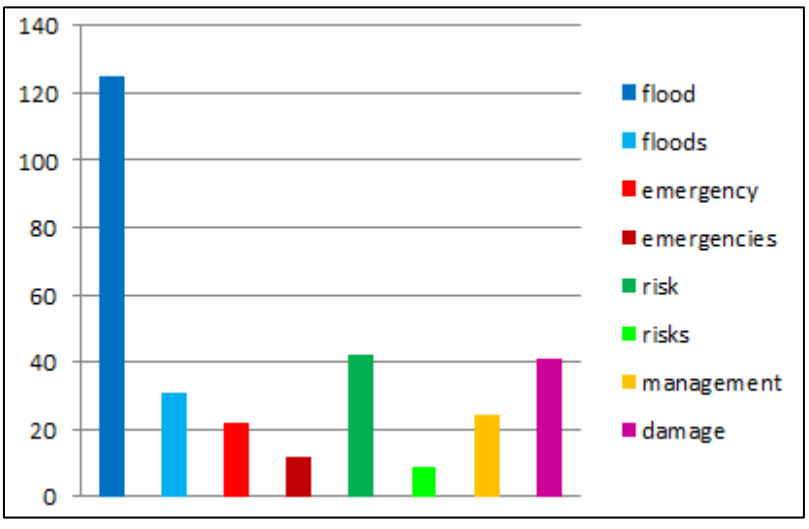
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
flood/floods				
flood (sing.)	26	1.066' word = 99% of the text	9	*flash* (8 times)
floods (pl.)	4	562' word = 64% of the text	0	0
emergency/emergencies				
emergency (sing.)	4	205' word = 19% of the text	0	0
emergencies(pl.)	0	0	0	0

management	2	143' word = 13% of the text	0	0
risk/risks				
risk (sing.)	2	117' word = 10% of the text	0	0
risks (pl.)	0	0	0	0
Damage	2	888' word = 81% of the text	0	0

Figure 4.41 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 2nd English text for non-experts.

b. Analysis of the Frequency of the Keywords

The following histogram (Figure 4.42) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same lemmas will be represented. This chart provides a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice of keywords and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX

x = keywords	y = frequency
flood	entries: 26
floods	entries: 4
emergency	entries: 4
emergencies	entries: 0
risk	entries: 2
risks	entries: 0
management	entries: 2
damage	entries: 2

Figure 4.42 Graphic of the frequency of the English selected keywords – Text 5 for non-experts.

The previously obtained data will now be taken into consideration. More specifically, focus will be on the WordList section (see Figure 4.40) and, when relevant,

on the Concord section (see Figure 4.41). The data reported in Figures 4.40 and 4.42 clearly show that the most frequent keyword is ***flood /floods*** (30). From these results, it can be observed that:

- ***flood/floods*** has a frequency of 30 and it is the keyword which appears most frequently in the text. There are 9 instances of *flood* in the text. According to Concord, the most frequent collocation is *flash flood*, which appears 8 times; flash floods are a type of flood: it is in the document because the experts that created it aim to provide some information on floods and define this specific type of flood, which has become a relevant and frequent phenomenon nowadays. The plural *floods*, on the other hand, has a frequency of 4 and its frequency is related to the one of its singular form above, but no indication of collocations. The main topic of the fact sheet is flood, so it seems quite natural that it appears with such a high frequency: flood is, in fact, the natural hazard on which experts want to inform, make aware and instruct the common citizens in all the phases of emergency management, starting before the event occurs and ending when it has occurred;

- ***emergency*** has a frequency of 4 and it is the second selected keyword in order of frequency in the text, together with *floods*. There are 4 instances of the keyword in the text, but no collocation has been detected by the software. The reason why it appears more often than others might be linked to the fact that this fact sheet focuses on dealing with flood-related disasters, and ***emergency*** is and should be one of the most important for the indication of a potentially dangerous situation.

Keywords such as ***management***, ***damage*** and ***risk*** are the ones with the lowest frequency, that is 2. No collocate was provided by the software, but, as expectable, *management* appears twice after *emergency*: it is not only in the name of the American FEMA organization, but it is also part of the data on who to contact in case of a flood-related emergency. Despite their low frequency. ***risk*** and ***damage*** are important nonetheless. Authorities focus specifically on making the readers aware of the risks they are facing in case of a flood. On the other hand, damage is mentioned as one of the possible consequences of a flood-related event, and this aims to shed light on the possible negative consequences caused by floods, especially when referring to *flood damage*.

c. Word Count

The second variable considered was the word count, that is the number of words both lexical and grammatical, in the text.

The result provided by Concord is: 1.138 words.

This indication is useful in order to compare the length of texts and the percentage of occurrence of the selected keywords, thus allowing us a more accurate and objective assessment of the text. Basing on the reflections made above, the number of times each selected keyword appears in the text is generally low compared to the total number of words in the text; this is due to the fact specific terminology occupies only 10-20% of the words of a text, apart from the most frequent keyword *flood*. One might also argue that the number of words in this text is quite high and that its length might be linked to its complexity: the more words there are, the more sentences are, generally, complex, the more the text is easier or less easy to read.

d. Readability Index

The third variable is the readability index of the text. It provides a quantitative and objective analysis of the difficulty of text on a scale from 1 to 100 (see Chapter 4 for the formula). The lower the index, the more difficult the text is. The software used to do it was Word. As already explained, the higher the readability index, the easier the text is to read for a specific category of people. In order to attribute to a specific text a target reader, the Flesch Reading Ease should be used.

According to the analysis through Word, the result is the following one: 51.9.

The readability of this text is quite high, and this means it is not too difficult to read. Basing on the information presented before, this index is between the values of 50.00 and 60.00: this means it can be read without much difficulty by students from the 10^{th} to the 12^{th} grade. People who went to highschool and started college can understand this text quite well, but adults who did not have access to higher education nor children can read it. Being a document edited for the general public, for adults in particular, it seems to serve its purpose only partially. The readability index of texts for non-experts should be higher, but this does not seem to be the case. While it is true that the text contain some specific and technical terminology, it should be balanced with simpler syntax or, better, by explanations of the terms.

Text 6

FEMA. (August 2013). *Floods Fact Sheet for Kids*.

This text is a fact sheet provided by the FEMA. It can be found on the website called Ready.gov, which was created for citizens and which provides information on all kinds of emergency for families. To be more precise, the target readers are children. The aim is to provide some general introductory information about floods and some basic instructions on what to do before, during and after a flood-related emergency. The authors also provide a short legend with some definitions of flood-related terminology and a quiz to engage with children and help them retain the information provide.

a. Analysis with Oxford WordSmith Tools 4.0

a. Wordlist

I uploaded the document in WordList and obtained the following findings. The frequency number of each word and the correspondent percentage of frequency in the text will be indicated.

- *floods:* frequency of 11 = 2,39% of all the words in the text.

Floods belongs to the selected keywords.

This list provides the frequency of the English selected keywords. They are presented, of course, in order of frequency, singular and plural included:

KEYWORDS	FREQUENCY	PERCENTAGE OF THE RUNNING WORDS IN THE TEXT
flood/floods	**20**	
flood (sing.)	9	1,95%
floods (pl.)	11	2,39%
emergency/emergencies	**4**	
emergency (sing.)	4	0,87%
emergencies (pl.)	0	0,00%

risk/risks	**2**	
risk (sing.) *risks* (pl.)	2 0	0,43% 0,00%
management	**0**	0,00%
damage	**0**	0,00%

Figure 4.43 Frequency of the selected keywords provided by Wordlist – 3rd English text for non-experts.

a.1 KeyWords

KeyWords proposes a list of words which appear frequently with reference to a source corpus (the one calculated above through WordList) and a target corpus, which is a wordlist of all the 3 English texts for non-experts (always calculated through WordList). The module highlighted only one keyword:

- *floods*: frequency 11 = 2,39% of the text;

It is part of the selected keywords.

a.3 Concord

This section focused on all the possible concordances of the selected keywords (both singular and plural, when possible) listed in the previous section (a.1). For each keyword, the following elements will be listed: the number of occurrences ant the position of the first entry of the word in number and in percentage; the number of collocations of the word and the first most frequent collocates of each word.

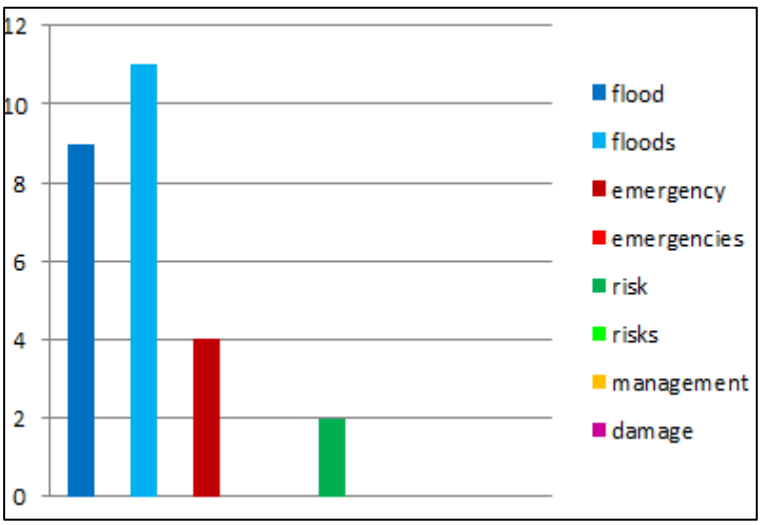
KEYWORDS	OCCURRENCES	POSITION OF THE FIRST ENTRY	INSTANCES	TOP COLLOCATE
flood/floods				
flood (sing.)	9	3987' word = 89% of the text	2	0
floods (pl.)	11	430' word = 100% of the text	4	0
emergency/emergencies				
emergency (sing.)	4	430' word = 99% of the text	0	0
emergencies (pl.)	0	0	0	0

risk/risks				
risk (sing.)	2	104' word = 22% of the text	0	0
risks (pl.)	0	0	0	0
management	0	0	0	0
damage	0	0	0	0

Figure 4.44 Number of occurrences, first entry of the keyword, number of instances first most frequent collocate of the selected keywords provided by Concord – 3rd English text for non-experts.

b. Analysis of the Frequency of Keywords

The following histogram (Figure 4.45) is the representation of the entries of the keywords previously selected and analysed with WordList. Both singular and plural forms of the same lemmas will be represented. This chart provides a visual idea of the frequency of each specific keyword in the text. It also helps understand what the general tendency of emergency-related language is and how the choice terms and keywords is related to the readability of the texts (which will be seen in section d.).



INDEX	
x = keyword	y = frequency
flood	entries: 9
floods	entries: 11
emergency	entries: 4
emergencies	entries: 0
risk	entries: 2
risks	entries: 0
management	entries: 0
damage	entries: 0

Figure 4.45 Graphic of the frequency of the English selected keywords – Text 6 for non-experts.

The previously obtained data will now be examined. More specifically, focus will be on the WordList section (see Figure 4.43) and, when relevant, on the Concord section (see Figure 4.44). The data reported in Figures 4.43 and 4.45 clearly show that

the most frequent keyword is ***flood/floods*** (20). From these results, it can be observed that:

- ***flood/floods*** has a frequency of 19 and it is the keyword which appears most frequently in the text. This fact sheet focuses on floods and flood-related emergencies: it provides not only instructions on how to face such an event, but it also provides a list of terms all related to flood. Therefore, it seems natural that *floods* (frequency of 10) and the singular *flood* (frequency of 9) are not only the most frequent words, but also keywords selected by the software; they always appear alone in Concord, but no collocation was provided;

The keywords with the lowest frequency are the following:

- ***emergency/emergencies*** has a frequency of 4 and it is the second keyword in order of frequency in the text (there is no plural form of the keyword). There are 4 instances of the keyword in the text. No collocation was provided by Concord, but in WordList the keyword appears after *of* and *an* as part of the website address. In the text it appears in the collocation *emergency kit* and *emergency workers*. This keyword is not given much importance in the text;

- ***risk/risks*** has a frequency of 2 (there is no plural form of the keyword). There are 2 instances of *risk*; no collocation was provided, but it appears after *greater* and *at*. Despite its low frequency, this keyword is given much importance: as seen in the pdf file, it is part of a headline which informs the children on where and how floods can happen, arising their awareness of the possible problems related to the hazard.

The keywords with the lowest frequency, that is 0, are the following: ***management*** and ***damage***. This fact sheet aims to inform the children on the possible risks of a flood-related emergency and on what to do before, during and after it. Even though it is true that it provides a concise list of precautions and activities to follow and which can allow a better management of the situation, this specific keyword is not used, because it is not considered relevant for readers. The text does not focus on damage either, but it warns the children on what danger could come from floods: the focus is, in fact, on the risks and the dangers, not on the damage; adults will deal with damage.

c. Word Count

The second variable considered was the word count, that is the number of words both lexical and grammatical, in the text.

The word count was provided by Concord and the result is: 461words.

It follows that the number of times each selected keyword appears in the text is generally low compared to the total number of words in the text. Moreover, this text is

for non-experts, and the frequency of specific language is evidently lower than in texts for experts. It could also be argued that the number of words in this text is very low, because it is a fact sheet for children and aims to give synthetic, clear and straightforward information. Sentences and paragraphs are very short, and the length of the text might influence the complexity of the text; it is expected to be low.

d. Readability Index

The third variable considered in our analysis is the readability index of the text. The software used to do it was Word.

The Flesch Reading Ease in this text is the following one: 75.9.

This index is between the values of 70.00 and 80.00: this means it can be read easily by students of the 7^{th} grade (13 years old approximately), and therefore by everyone. The language used is simple, ordinary and conversational. As expected, the readability of this text is relatively high, and this means it is not difficult to read. It is also true that, as we have seen here above, some specific technical terms and keywords are used, but they are inserted in a simple context; some of them are even explained. From the terminological point of view, this text seems to be an example of clear and effective communication for children.

4.3.2.i. Comparative Analysis of the Three English Texts for Non-Experts

Figures 4.39, 4.42 and 4.45 (above) give a simple yet clear visual idea of the frequency of the selected keywords in each text. They also provide the occasion for a simultaneous comparison of emergency-related language and terminology and for understanding what the general tendency is.

To be more specific, WordList did not only provide the individual frequency lists of the three texts: it also allowed us to study the frequency of the selected keywords in the three texts at the same time. The data are presented in the table below (Figure 4.46) in order of frequency (each form of the same keyword is considered individually):

KEYWORDS	FREQUENCY	FREQUENCY OF THE KEYWORDS IN PERCENTAGE	NUMBER OF TEXTS IN WHICH THE KEYWORD APPEARS
Emergency	**69**	**0,62%**	**3**
Flood	**45**	**0,40%**	**3**
Floods	**18**	**0,16%**	**3**
Risk	**9**	**0,08%**	**3**
Management	3	0,03%	2
Damage	11	0,10%	2

Figure 4.46 Frequency of the selected keywords in all of the three texts.

The most frequent keywords in all the three texts are ***emergency*** (69), ***flood*** (45) and ***floods*** (18), and ***risk*** (9). First of all, it is worth underlining that the texts are much shorter that the ones analysed before; it follows that the frequency of the selected keywords is lower. Anyway, from the data presented above, the following conclusions can be drawn:

- ***emergency*** has a prominent importance in the English texts as much as in the Italian ones. Text 4 is a fact sheet for adults and gives information about floods related situations; text 5 is for parents and families and, finally, text 6 is written for children. Emergency is relevant in all these texts, probably because the readers need to understand how to recognize a potentially dangerous situation and, eventually, how to deal with it;

- ***flood*** (45)***/floods*** (18) appears in texts 5 and 6, as the central theme of the fact sheets; it is the kind of emergency people need to face.

- ***risk*** (9) is strongly related to the one of emergency in communicating with citizens: readers need and have the right to be aware of the possible consequences of a natural disaster. In text 6, for example, a list of instructions on what to do before, during

and most of all after a disaster (flood in particular) is provided to the children in a colourful and captivating way.

Differently from the Italian texts, the keyword *management* appears in two English texts: while it is true that children do not immediately comprehend this term, it is also true that it should be part of a list of definitions that the public, children included, should know. The aim of FEMA might be exactly this: to arise interest and provide knowledge to the public.

f. Word Count

In the figure below (Figure 4.47) a list of relevant information about the three texts analysed. The data were provided in the Statistics section of WordList, as an example of how the information in the texts is organized.

The elements that will be taken into consideration are, once again, the tokens, that is the running words in the text, the mean word length, the number of sentences, the mean of sentences (in words) and of the paragraphs.

File Edit View Compute Settings Windows Help

N	Overall	1	2	3
text file	Overall	ady.txt	lood.txt	kids.txt
file size	249.091	39.706	6.855	2.530
tokens (running words) in text	41.564	39.965	1.138	461
tokens used for word list	40.397	38.826	1.119	452
types (distinct words)	4.614	4.565	476	229
type/token ratio (TTR)	11	12	43	51
standardised TTR	42,09	42,01	45,20	
standardised TTR std.dev.	56,53	56,52		
standardised TTR basis	1.000,00	.000,00	.000,00	.000,00
mean word length (in characters)	5	5	5	4
word length std.dev.	2,66	2,66	2,52	2,22
sentences	3.367,00	.244,00	80,00	43,00
mean (in words)	12	12	14	11
std.dev.	10,32	10,36	6,74	12,25
paragraphs	3,00	1,00	1,00	1,00
mean (in words)	13.466	38.826	1.119	452
std.dev.	21.965,22			
headings				
mean (in words)	0	0	0	0
std.dev.				
sections	3,00	1,00	1,00	1,00
mean (in words)	13.466	38.826	1.119	452
std.dev.	21.965,22			
numbers removed	1.167,00	.139,00	19,00	9,00
stoplist tokens removed	0	0	0	0
stoplist types removed	0	0	0	0
1-letter words	1.822	1.749	40	33
2-letter words	5.983	5.738	175	70
3-letter words	7.346	7.092	188	66
4-letter words	6.206	5.937	181	88
5-letter words	4.792	4.538	174	80
6-letter words	3.595	3.455	90	50

frequency | alphabetical | statistics | filenames | notes

Figure 4.47 Screenshot of the Statistics section in WordList.

As shown in the figure above, text 4 is the one with the highest word count. The general tendency remains the same: grammatical words and numbers prevail on lexical words (our selected keywords included).

Nonetheless, basing on the previous considerations, it is evident that the number of times each keyword appears in the text is generally very low compared to the total number of words in the text. It can also be suggested that the length of the texts might have influenced the level of complexity of the texts and, therefore, the readability index (see section g.). In this specific case, the sentences are shorter and there are not many subordinates. It seems that the simpler the sentences, the more use of specific technical terms can be made; consequently, the text is more difficult for an average reader.

g. Readability Index

I plotted the results obtained from the analysis of the readability index of each text in Figure 4.48:

TEXTS	Readability (Flesch Reading Ease):
Text 4	80.9
Text 5	51.9
Text 6	75.9

Figure 4.48 Readability Index for English texts for non-experts.

As shown in the table above, the readability indexes of the three texts are quite high also compared to the ones of English texts for experts: they are therefore quite simple to read for non-experts, families and children in particular. All in all, it can be suggested that the texts for non-experts previously analysed can be considered relatively good examples of communication to the general public, but they are not completely clear and understandable, and they should therefore be improved upon.

4.4 Conclusions: Discussion, Limitations and Possible Improvements

This chapter will end with a short discussion on the results of the textual analysis of the texts. The final purpose is to evaluate whether the chosen Italian and English texts for non-experts can be considered examples of clear and effective communication for the general public. Fact sheets for non-experts provided, in short, instructions and guidance on emergency management, more specifically on disasters caused by floods. Their target readers were adults, families and children.

These texts were expected to have the following characteristics: a limited use of emergency-related terminology, low degrees of syntactic and sematic complexity and, consequently, high readability indexes. The previous findings confirmed our expectations. In fact, examining the data provided by the software systems Oxford

Wordsmith Tools 4.0, Tint for Italian texts and Word for English texts, we can draw the following conclusions. First, Oxford Wordsmith Tools 4.0 provided the frequency lists of the Italian and English keywords I had selected, and the word count of all texts individually. From the histograms and the tables in Sections 4.2.1.i, 4.2.2.i, 4.3.1.i and 4.3.2.i, it can be observed that the percentage of frequency of keywords is generally much higher in texts for experts than it is in texts for non-experts[6]. Second, Tint and Word measured the readability indexes of all texts: from the comparison of the data, we notice that, as foreseeable, the index is generally higher in texts for the general public, for families and children in particular, and lower in texts for experts[7]. The readability value is also connected to the percentage of scientific and technical terminology in the texts.

Nonetheless, it can also be noticed that not all texts for non-experts are easier that the ones for experts: in fact, texts for experts are sometimes more accessible to the general public than the ones for non-experts. This information contradicts one of the previous hypotheses, allowing us to ponder on the complexity of language, and of special languages in particular.

My first consideration is on the readability index: this value is based on algorithms and the variables of the calculation were the number of words, of syllables and letters; the results of the calculations are objective and consistent. Nevertheless, it is also true that a machine could hardly (or never) understand the complexity and the beauty of human language. Therefore, the readability results should be considered with a prudent attitude.

Second, attention is paid both to the readability index and to the frequency of the selected keywords: establishing a bond between experts and non-experts is not an easy task. In fact, modern terminologists and scientists are trying to popularize technical content and make science more comprehensible and accessible to citizens; but this process is not an easy one. The texts analysed clearly exemplify this difficulty, which becomes more evident when communicating in emergency situations in particular.

In conclusion, first of all, one might suggest that the corpora selected were not very wide. In fact, I favoured a limited number of texts in order to propose a circumscribed and precise study. Moreover, the data provided by WordSmith 4.0 were reliable, but sometimes difficult to interpret. In a few cases, I did not have any result at all (see KeyWords) and the low amount of data (some texts, especially for non-experts and children, were very short) was a problem in our analysis.

However, despite the difficulties, this work can be considered a valuable contribution to present emergency-related studies, and to possible future studies.

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[6] See Figures 4.10 and 4.22 for Italian and English texts for experts respectively. See tables 4.34 and 4.46 for Italian and English texts for non-experts respectively.

[7] See tables 4.12 and 4.24 for Italian and English texts for experts respectively. See tables 4.36 and 4.48 for Italian and English texts for non-experts respectively.

Chapter 5

Visual Analysis of the Emergency Texts for Non-Experts

5.1 Introduction

Official organisations such as Protezione Civile and FEMA deliver information through different media. The choice of the medium strongly depends on the target of the information that has to be delivered; the documents chosen for the analysis are texts, more specifically texts for non-experts. The textual information, the terminology and the visual characteristics of these texts, called fact sheets, change too.

The components that need to be taken into account when dealing with texts and their analysis are the following: the topic of the discourse, the participants, more specifically the target public or audience, the kind of relationship with the reader (see "reader-author contract" in Section 2.2.1 in Chapter 2) and the purpose of the texts. Content and language register vary according to these variables.

There is also another element which is becoming more and more important in contemporary texts and publications: visual design (Busà 2014: 51). "Visual and non-verbal elements (photographs, videos, diagrams and graphics) are integrated with verbal elements (spoken or written words)" (p. 55) in texts; their aim is to "create meaning and provide readers with a clear and interpretative framework in order to navigate through the publication" (ibid.). The reader, as the experts A. M. Lorusso and P. Violi (2004) underline, desires to know more. This mental but also physical desire is defined as the "stato patemico dell'attesa" (p. 141) and the text should provide the right elements in order to allow this passion to develop: "è l'attesa la vera passione predominante" (ibid.).

This chapter will analyse some selected emergency-related texts for non-experts. The texts that will be analysed are, in fact, for ordinary citizens: adults, families and children need to be aware of the risks of emergency situations in order to face them in the best possible way. Experts in emergency management have created these emergency-related documents in order to satisfy these needs. The aim of this chapter is to understand if the chosen texts can be considered fact sheets that provide effective and clear communication: their communicative potential will be given attention, and focus will be on their visual aspects. The chapter will begin with a description of the methods used to carry out the mentioned aim. First, a short overview of the data selection procedure will be offered, together with a list of the documents that will be analysed. Second, the different steps of the visual analysis will be introduced: information on the variables and models used for the analysis will be provided, and the steps of the analysis will be explained.

Finally, the results of the work will be presented, focusing on the visual aspects of Italian and English texts for non-experts. This part will be structured as follows: it will begin with the 3 Italian texts for non-experts, and continue with the 3 English texts for

non-experts. Each section will focus on one text only: first, the title, a short summary of each document and the indication of the number of pages, which is relevant for the attractiveness or non-attractiveness of the texts, will be provided. Then, each variable taken into consideration will be discussed. In conclusion, a brief comment on the results will be given.

5.2 Methods and Materials

5.2.1 Collecting and Selecting Documents and Information

The first step in the analysis of emergency-related communication is the collection of data. Indication of the selection procedure can be found in Section 3.2.1 in Chapter 3.

In short, the documents were found in the official websites of the American FEMA and the Italian Protezione Civile. These documents focus on different kinds of emergencies and natural hazards, flood in particular: they provide instructions on what can be done before, during and after disasters, on how to deal with them and on how to save people's lives. Some of these texts are for families, others for children only.

5.2.2 List of the Documents

In the following paragraphs, the complete lists of the Italian and English documents for non-experts will be presented.

The Italian texts for non-experts are the following:

- Text 4.a: Janinski R. R., Tommasoli L., Di Tomizio-More B. (2004). *Come deve comportarsi un cittadino PRIMA, DURANTE E DOPO un'emergenza*;
- Text 5.a: Presidenza del Consiglio dei Ministri. Dipartimento della Protezione Civile. (2005). *Protezione civile in famiglia*;
- Text 6.a: Associazione Civilino. (2013). *Scheda Alluvione*.

The English texts for non-experts are the following:

- Text 4.b: FEMA. (2004). *Are You Ready?* An In-depth Guide to Citizen Preparedness;
- Text 5.b: FEMA. (February 2007). *Fact sheet: Floods*. FEMA 555;
- Text 6.b: FEMA. (August 2013). *Floods fact sheet for kids*.

5.2.3 Variables

The main variables considered are the visual aspects that characterise each of the previously listed texts. This analysis will provide qualitative information on how the

selected texts are organised and presented to the general public.

The first element that should be taken into account when evaluating a text is the *layout*: it "conveys valuable information" on the content of the texts, "and so aids their comprehension" (Busà 2014: 55). It should be underlined that "texts are organized in modular fashion" (p. 55):

- the *title line*, that is "the title and the logo of the publication" (ibid.) can be found on the front page, at the top or in the lowest part of it;

- *headlines*, that is the titles, not only provide information on the topic of the text, but they also attract the reader's attention. Headlines can occupy different positions is the page and, according to these, "they also signal the relative importance of the text" they refer to. Headlines are fundamental, because, based on them, the reader "can decide whether" the text "is worth reading or not" (p. 80). Headlines are usually followed by short paragraphs that work as an introduction to the text (p. 88);

- *pictures* can attract the reader's attention and also provide additional information on the topic they relate to. Pictures are fundamental: in fact, information "has become a highly visual phenomenon. This means that" the presentation of a text and the "representations need to create a strong visual impact, by incorporating images related to the [reported] event, people and situation" (p. 30). All of these pictures often have the potential to "express immediately what it may take several paragraphs to say in words" (p. 31). These images work even better if they can emotionally involve the readers and attract their attention (p. 31). There are different types of pictures. Photographs, for example, provide what A. M. Lorusso and P. Violi call "un'illusione di realtà" (2004: 40). More specifically, they distinguish between "immagini-simbolo" and "immagini-documento" (ibid.): the first do not have a direct nor evident relationship with the content, but they provide an interpretative key to reading the text; the second provide a real and true "*evidence*" of the information in the text. On the other hand, cartoons can have a decorative function, but they can also provide additional and sometimes critical information to the text (p. 48);

- *captions* are the small texts that appear near pictures; they usually explain the content of the picture or provide extra information on it, thus allowing the reader to better understand the meaning of the images on the page;

- *layout* is the way in which the text can be organized and distributed; the use of columns, for example, gives "structure" to the text and shape it "into proportions that are pleasing and accessible to the eye" (p. 57);

- *typeface*, that is the font of the text, or, more specifically, "the set of letters or other characters of a common design used in the texts" (p. 57); *character size* are important too. There are different kinds of fonts and their dimension influences the reader's attention and the way they see and perceive the text. Of course, titles are usually bigger than simple texts.

Another element worth mentioning is *colour*: the choice of colours contributes to emphasizing the visual impact on the reader and might even influence the reader's attention to the text. It is commonly known that each colour has its meaning and can create a particular effect on the eye of the spectator. In this analysis, focus will be on what the artists call primary colours: blue, red and yellow. Other colours, such as green, orange and violet, are created from the mixture of the primary ones; their characteristics relate to the colours they are made from. Blue symbolizes harmony, balance and peace; it also recalls the colour of water and, more specifically, of floods. Red represents passion and determination; it is the colour of blood and it is usually associated with danger. Yellow is the colour of the sun, it represents life and energy; it can be associated with the possibility of danger.

The last element that will be considered is the text of the documents: as already suggested, content is fundamental in textual analysis. In fact, the topic and the purpose of the texts, their target and the needs and expectations of the public are fundamental not only in the process of creating textual materials, but also in their development and dissemination.Attention will be paid to what kind of information, how much information, and how information is delivered: more specifically, the aim is to understand if the purpose of texts is an informative one, an educational one or simply an emotionally engaging one, and to study the choices that the writers have made in order to achieve their goal.

5.2.3.1 Steps in the Visual Analysis

The analysis of the visual aspects is based on one main step: the visual aspects that characterize each of the previously listed texts for non-experts will be delineated and discussed, starting with the 3 Italian texts and concluding with the 3 English texts.

5.4 Results and Discussion

This section will focus on the analysis of the texts listed in Section 5.2.2. The results of the work will be presented, focusing on the visual aspects of Italian and English texts for non-experts: the analysis will be on the 3 Italian texts for non-experts first, and on the 3 English ones for non-experts then. For each text, the analysis of the elements and variables listed in Section 5.2.3 will be given. In conclusion, the results will be discussed.

5.4.1 Texts for Non-Experts

The following sections will focus on the analysis of the fact sheets for non-experts. The topic is emergency caused by natural disasters, the ones caused by floods in particular. These documents have an informative and a didactic aim, and their target is the general public, more specifically adults, families and children.

These documents are expected to have the following characteristics: they should be visually engaging and maintain the balance between visual aspects and the information that needs to be conveyed. In a nutshell, they should take into consideration their targets and adapt to them.

These documents should be visually pleasant, in order to catch the reader's attention and maintain it, with a various and balanced choice of textual fonts and dimensions in order to transmit the information in the best possible way. Documents for children should be colourful, rich in images and drawings. Documents for adults only should be less colourful and with less pictures: their aim is, in fact, to provide clear and essential information with a precise and well-structured texts. Finally, texts for families should combine all the elements above together, balancing the choice of the information, the language used in it and the visually engaging pictures and fonts that help the information to get through.

5.4.1.1 Italian Texts

The first texts for non-experts that will be analysed are Italian texts. First, the title of each document will be provided, together with the indication of the number of pages and a short description of their content and their main target. Second, the visual aspects of the texts will be taken into account and discussed.

The analysis of the three Italian texts for non-experts will be presented in the following sections.

Text 4.a

Janinski R. R., Tommasoli L., Di Tomizio-More B. (2004). *Come Deve Comportarsi un Cittadino PRIMA, DURANTE E DOPO un'Emergenza*

Number of pages: 120

This fact sheet is the result of the collaboration between two experts of Protezione Civile, an art director specialised in multimedia communication and the Associazione Nazionale Coordinamento Camperisti.

The targets of this text are common citizens, from the children, to the adult to the eldest, from students, to workers. The aim is to provide clear, synthetic and practical indication of self-protection in emergency situations.

The text is divided into different sections, or chapters, which have a common structure. The analysis of the elements and variables that characterise this structure (see Section 5.2.3) will follow.

PAGE LAYOUT

a. Title line

It is quite bizarre to underline, but this fact sheet in PDF does not have a front page. The title line is "*Come Deve Comportarsi un Cittadino PRIMA, DURANTE E DOPO un'Emergenza*"; the information is given in the introductory pages of this work, but no other mention of it was provided on the first page.

The first page of the text begins with bibliographical information about the three authors. No logo is indicated, but the readers can relate the authors to Protezione Civile because it is indicated in their bibliography. The names of the authors are highlighted in bold and they occupy the central part of the page; for each person there is a caption of different colours, as is their personal information (see Figure 5.1).

b. Headlines

There are two types of headlines: the titles providing general information on the content of the texts are lowercase; they are positioned in the upper part of the page, alternatively on the left and on the right sides of the pages, and their font is very small. The main titles, which are listed in the index occupy the central section of the page, on the top; they are big and can be easily read.

Figure 5.1 Screenshot of page 1 of *Come Deve Comportarsi un Cittadino PRIMA, DURANTE E DOPO un'Emergenza* (2004).

Less important titles are sub-sections of principle headlines. Differently from the main ones, these titles are in capital letters.

c. Pictures

This fact sheet bases its communicative aim on pictures: a series of drawings and cartoons have been created in order to provide additional information about the text. As underlined in the text itself (2004: 7), authors have chosen specific cartoons and specific colours in order to attract the readers' attention on focal points and on precautions and actions to take in case of an emergency in particular. Pictures are quite big (they occupy more space in the page than texts) and colourful: some contain single subject images, such as a telephone (p. 9), a car (p. 14) or a book (p. 16). Other pictures contain more elements, such as three people walking down the stairs in a row (p.11) or two people driving a car in the fog (p. 17): the latter describe a particular situation and/or give

indications on what do to face it. Nonetheless, they are all essential and clear.

In some cases, a single picture can occupy most of the page (p. 30); in other cases, the number of pictures varies from two to four, according to the emphasis given to the message conveyed.

d. Captions

To almost every picture corresponds a caption: these very small texts provide explanations on what is shown in the pictures and instructions. Some captions can be found on the right side of some pictures, or, in most of the cases, when there are too many pictures in the page and space is limited, below pictures.

Figure 5.2 Screenshot of page 10 of *Come Deve Comportarsi un Cittadino PRIMA, DURANTE E DOPO un'Emergenza* (2004).

e. Layout

All instructions on what to do in a disaster situation are structured in horizontal and vertical rectangles. Information is organised in a schematic, ordered and essential way and each caption and its related picture occupy a space delineated by a thin dotted orange line (see Figure 5.2 above).

f. Character and Font Size

The font remains the same throughout the whole text. The dimension of the letters changes according to the type of information and of the content of the text, titles are

bigger and in bold. Some words (see CALMA in Figure 5.2) are in capital letters, in order to attract the readers' attention. Texts do not take too much space: they are short, and their dimension is quite big: children and the elderly can read them without difficulty.

g. Colours

Colours are, as pictures, of fundamental importance in this text. In fact, as we will see in Figure 5.3 below, specific colours have been chosen to communicate some specific information and to allow the readers' to better understand and assimilate the indications provided.

Figure 5.3 Screenshot of page 7 of *Come Deve Comportarsi un Cittadino PRIMA, DURANTE E DOPO un'Emergenza* (2004).

The predominant colours in the pictures are red, green, yellow, white and pink. Red is used to represent danger and prohibition to do something. Green, which symbolizes life and positivity, represents what can and should be done. Yellow, which represents the possibility of danger, indicates some limits. White, symbol of light and purity, represents some general and valuable advice for everyone to know. Pink, which is commonly associated with calmness and tenderness, indicates some recommended places where people can find refuge.

Texts are written in black, which is the most commonly used colour for writing. It should also be underlined that orange is used for headlines which give general

information on the context of the texts that follow, in order to capture the readers' eyes.

h. Text

This text was written for ordinary citizens, including children, the elderly, students and workers. It provides information on all kinds of emergencies; more specifically, it aims to give practical indication of self-protection in each potential emergency situation.

As specified in the introduction in the document, the aim is informative and educational, and the following considerations suggest that this purpose has been respected. In fact, exception made for the introduction, where the text is long and the font is quite small, all the other sections present visually clear, short and essential texts, and there is a limited use of specific and technical language (see Chapter 4). The text is organised in an ordered way: each emergency occupies a specific section in the text; the text is divided into different and short sections where instructions on how to deal with emergencies are given, together with colourful images and drawings that provide visual examples of the instructions.

Pictures and colours also play a key role in the communicative aim of this document: they take into consideration the target of the text and convey visual explanations and additional information on the instructions provided in the text.

All in all, the aim of the text, and the quantity and way the information is provided are balanced.

Text 5.a

Presidenza del Consiglio dei Ministri. Dipartimento della Protezione Civile. (2005). *Protezione Civile in Famiglia*

Number of pages: 68

Figure 5.4 First page of the fact sheet *Protezione Civile in Famiglia (2005)*.

This fact sheet has been created by Protezione Civile in collaboration with Regione Val d'Aosta. The targets of this text are families, "dal bambino al nonno" (Dipartimento della Protezione Civile 2005: 6). The aim is to raise awareness on the possible risks linked to all emergencies (from natural hazards to terroristic attacks), and provide guidance on what to do and how to face them while waiting for the aid of Protezione

Civile's volunteers.

The text is divided into different sections, or chapters, which have a common structure. The analysis of the elements and variables that characterise this structure (see Section 5.2.3) will follow.

PAGE LAYOUT

a. Title Line

The main title of the work is in capital letters and occupies the central upper part of the first page. It is composed of four words, it alternates white and blue and it is immediate to read. Focus is on the fact that this document is for families.

The logo of Protezione Civile is in the lowest section, on the right. It is quite visible. More detailed information about the authors, the authorities and the edition are presented in the lowest parts of the following two pages.

b. Headlines

The story titles are all in capital letters. The main titles are in blue or in white on a blue background, while the titles indicating subsections are in orange.

Headlines occupy different positions is the pages, either on the left or on the right, but never in central position. The main titles of pages specifically devoted to disasters (such as the flood one) are followed, as it often happens, by short introductory paragraphs. At page 8, for example, there is a white title on a blue background followed by a short text that provides some general information about earthquakes; more specific information is, on the other hand, introduced by orange titles in the following sections.

TERREMOTI

Il rischio sismico, in una determinata area, può essere misurato dal danno che ci si può aspettare, in un intervallo di tempo stabilito, a seguito dei terremoti. Può essere espresso in termini di vittime, costo economico, danno alle costruzioni. Rischio e pericolo non sono la stessa cosa: il pericolo è rappresentato dal terremoto che può colpire una certa area (la causa); il rischio è rappresentato dalle sue possibili conseguenze, cioè dal danno che ci si può attendere (l'effetto). Nella definizione del rischio, infatti, intervengono oltre la pericolosità le caratteristiche del territorio.
RISCHIO SISMICO = TERREMOTI x EDIFICI VULNERABILI x BENI ESPOSTI

Da cosa dipende il rischio sismico?

Per definire il livello di rischio di un territorio occorre conoscere la sua sismicità, cioè quanto spesso avvengono i terremoti e quanto sono forti, ma anche il modo in cui l'uomo ha costruito le sue opere, quanti e quali sono i beni esposti, quanto densamente è popolato. Infatti, a parità di frequenza e di intensità dei terremoti, il rischio è nullo laddove non esistono edifici, beni esposti, popolazione; mentre aree densamente popolate, o caratterizzate da costruzioni poco resistenti allo scuotimento di un'onda sismica, presentano un rischio elevato.

Come ci si difende dai terremoti?

I terremoti non si possono evitare. L'unica arma per la riduzione del rischio sismico è la prevenzione, che comprende: fare una completa classificazione sismica dei Comuni; costruire seguendo

Figure 5.5 Screenshot of page 8 – Terremoti of *Protezione Civile in Famiglia (2005)*.

c. Pictures

Pictures are a central component in this fact sheet. Most of the pictures are computer designed drawings and cartoons.

The most evident example is the picture on the front page: it has a decorative function, it attracts the readers' attention (children's in particular) and creates some interest in the topic. Moreover, as Lorusso and Violi underlined (2004: 48), it also gives additional information about the text.

The small pictures in the front have different subjects and describe different kinds of emergency situations; they can be found in each chapter of the fact sheet. The biggest picture covers the rest of the main page and represents a family: a mother, a father, two children and a dog are handling some shields with the symbol of Protezione Civile against emergencies. They are smiling, and this creates a positive impact on the audience. These people will be the protagonists of the fact sheet and the readers will meet them again.

There are also some photos. There are photos above the headlines of the different chapters of the document; they represent the element the text will deal with; some photos are big enough to occupy the entire space, others are quite small and are positioned near others (see Figure 5.5 above). They all provide an "un'illusione di realtà" (Lorusso, Violi 2004: 40).

d. Captions

There are some captions on the right side of the drawings illustrating instructions

on what to do before, during or after an emergency has occurred. In this case, these captions do not aim to explain the content of the pictures; on the contrary, the pictures provide a visual image of the information in the texts. These texts are organised in different sections divided by dashed lines (see Figure 5.6 below).

Figure 5.6 Screenshot of page 18 – Durante l'alluvione of *Protezione Civile in Famiglia (2005).*

e. Layout

All instructions on what to do in a disaster situations are structured, vertically, in columns, and horizontally, in rectangles: information can thus be organized and distributed in a clear and schematic way. This layout is not exactly "pleasing and accessible by the eye" (Busà 2012: 57), as the font is very small and it might be difficult to read for grandparents or for little children.

f. Character and Font Size

The typeface of the fact sheet remains unvaried throughout the whole text. The dimensions of the letters change according to the type of information and of the content of the text, titles are bigger; the most important are in capital letters.

In some sections of the fact sheet, most of the page is occupied by texts; sometimes the font is too small and the text is too long and risks to be difficult to read.

g. Colours

The predominant colours are orange and blue. Orange prevails: it is a vivid nuance of orange and it captures the eye of the reader. Some titles and the lines dividing one page and one section from the others are orange. The choice of this colour might be linked to its meaning: orange is said to represent harmony, bravery and faith in yourself and in others. It should therefore contribute to create an engagement between the authors and the readers, involving them in the subject of the discourse and encourage them to start reading, learn more and, most of all, take action.

Dark blue is the second most common colour. The main texts, some bigger spaces delineating the upper and the lowest parts of all pages, the entries in the main index and some titles are blue. Also in this case, the choice of the colour is relevant: blue represents balance, calmness and peace. It also represents water, and this is why it prevails in a picture at page 19 of the document.

h. Text

This text was written for all members of the family, from children to the elderly. It focuses on the possible risks caused by all kinds of emergencies (from natural hazards to terroristic attacks), and it aims to give guidance on what to do before, during and after each emergency situation while waiting for the help of Protezione Civile.

The text is organised in a clear and ordered way: each chapter focuses on a different kind of emergency, and it is divided into an introduction section on the topic, and on the main text, where specific information and instructions are provided.

The aim of this document is informative and educational, and one might suggest that both the needs and the expectations of all the members of the family are respected. More specifically, the text is organised in a clear way, the choice of the language is not too difficult (see Chapter 4), there are pictures that have both a decorative and informative function, and the choice of the colours attracts and involves the readers.

While it is true that some sections of the text are very long, and the font of the text is sometimes very small and might not attract children's and grandparents' eyes, it is also true that there is balance between the quantity of information and the way it is provided.

Text 6.a

Associazione Civilino. (2013). *Scheda Alluvione*

Number of pages: 2

This fact sheet is the result of the collaboration between Protezione Civile and Protezione Civile Umbria: the text is part of the project Civilino and its aim is to encourage children's awareness on emergency situations related to floods. It provides some simple and clear instructions on what to do and what not to do during and after a flood. Indications are divided into three sections: home, outside and after the flood.

The text is divided into different sections, or chapters, which have a common structure. The analysis of the elements and variables that characterise this structure (see Section 5.2.3) will follow.

PAGE LAYOUT

a. Title line

The main title occupies the highest part of the first page; it is slightly on the left, written in bold, in italic, and underlined. No logo is indicated, but readers can relate the document to Associazione Civilino thanks to the pictures in both pages.

b. Headlines

There are three headlines: they are red, they are positioned on the left space of the pages and they are divided from the texts by double space.

c. Pictures

There are seven pictures in this fact sheet, 5 in the first page and 2 in the second one. The subject of the pictures is Civilino, the character created by the experts of the association. It is the protagonist of the fact sheet and acts as a 'friend' and a guide for children who read the document. There are three kinds of pictures:

- on the right side of the page, Civilino provides visual examples of the positive indications written in the text (on the left);
- on the left and lowest side of the page, Civilino provides visual examples of the prohibitions in the text (on the right);
- a big picture of Civilino is in the background and occupies the whole pages.

d. Captions

In this case, there are no real captions, because the main text is divided into sections. Some information is accompanied by pictures, other is not. In the first page, captions are no longer than two half lines and they are underlined. In the second page, the text is distributed into two lists.

e. Layout

All instructions are organised horizontally, some occupy the left side of the page, some the right side. Each section is divided from the others by double spacing.

Figure 5.7 Screenshot of the upper part of page 1 of *Scheda Alluvione* (2003).

f. Character and Font Size

The font remains the same throughout the whole text. The dimension of the letters changes only for the title line, which provides the subject of the fact sheet and is therefore bigger and more visible, as already underlined. Instructions on the first page are underlined.

g. Colours

All titles and prohibitions are in red. It is the colour associated with danger. The title line is red on a yellow background: yellow represents not only energy, but also the

possibility of danger. The mix between red and yellow attracts the readers' attention.

The text is written in black, and blue is the colour of the background: as already mentioned, blue represents balance and harmony; it might create empathy with the readers. Moreover, it is the colour of water and its choice is particularly appropriate in this context.

h. Text

This text was written for children: it gives instructions on what to do before, during and after a flood both at home and outside, and it aims to encourage the children's awareness of this specific kind of emergency.

The structure of this document is very basic, texts are short and the choice of technical language is very limited (see Chapter 4): these components are essential in order to reach the educational aim of the text. Other elements that contributed to it are the use of the pictures and of the colours: the pictures are visual examples of the positive and negative actions that children can take when involved in a flood. The colours, mainly blue, attract the readers' attention and contribute to the message of the text.

One might therefore suggest that this document is a good example of effective communication.

5.4.1.2 English Texts

My analysis will proceed with the analysis of English texts for non-experts. First, the title of each document will be provided, together with the indication of the number of pages and a short description of their content and their main target. Second, the visual aspects of the texts will be taken into account and discussed.

The analysis of the three English texts for non-experts will be presented in the following sections.

Text 4.b

FEMA. (2004). *Are You Ready?* An In-depth Guide to Citizen Preparedness

Number of pages: 204

This document is a guide created by FEMA in order to provide the citizens with information on how to deal with any kind of emergency before, during and after a disaster occurs, and how to develop and use emergency plans. It also provides information on how to build disaster supplies kits. This document can be useful for the general public, adults who wish to help their families to face all kinds of disasters in particular.

The text is divided into different sections, or chapters, which have a common structure. The analysis of the elements and variables that characterise this structure (see Section 5.2.3) will follow.

PAGE LAYOUT

a. Title line

The main title of the work occupies the right upper part of the first page. It is quite big, in bold, and each word starts with capital letters. It is a very short and clear question, which attracts the readers' attention and awakens their conscience: readers ask themselves whether they are ready to face what will be dealt with in the following text, and they can be both attracted and worried by the question. Below the title line there is a subtitle: it is smaller and provides clear information on the content of the document.

The lowest part of the first page is occupied by the logo of the U.S. Department of Homeland Security (FEMA), and by a picture. Indications of the date and of the number of the document are provided in the lowest part of the page, vertically, on the left side, together with the repetition of the title and the subtitle.

b. Headlines

There are two types of story titles:

- the titles that introduce a new chapter are in bold, white on a blue background, and they occupy the upper part of the page, on the right side. They are below the numbers indicating the chapter, they are big and they certainly manage to attract the readers' attention. They are followed by pictures illustrating their content;
- the titles that introduce different sections of the chapters are blue, usually on a white background and in bold, (the first letter of each word is capital and slightly bigger that the others). They are very big compared to the words in the text, and they also manage to focalise the readers' attention.

c. Pictures

There are two types of pictures in the document:

- the pictures that appear in the first page of the document, under the title line, and in the first pages of each chapter, are photos: some represent people, other represent objects or places photographed after a natural disaster has occurred. Their function is to provide visual representations of the information contained in the titles, thus contributing to the meaning transmitted by the words. The choice of the pictures is linked to their empathic value and to the emotional impact they will surely have on the readers. Almost all photos are in black and white: this might be due to the fact that the subject themes of the document are important and serious, and the pictures should maintain this tone; other pictures are blue. As the readers may notice, black, white and blue are the colours that FEMA typically uses in fact sheets for adults (see Figure 5.10 below);

- the pictures that appear in the text are smaller, always in black and white: some represent, for example, the consequences of a natural disaster on the environment. Others are maps with data that support and specify the information in the text; others are drawings (see Figure 5.8 below, where there is a drawing of the process of distillation, linked to flood).

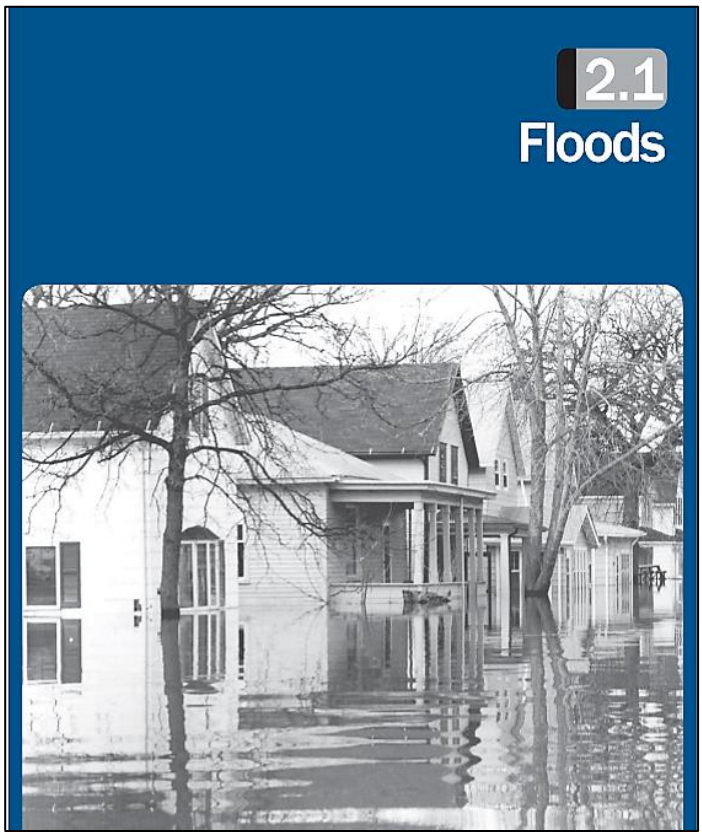


Figure 5.8 Screenshot of page 49 of *Are You Ready?* An In-depth Guide to Citizen Preparedness *(*2004).

d. Captions

There are no captions in the document. There are no captions above or below the pictures that introduce, together with the headlines, the chapters of the documents. Not even the pictures that present data and maps have captions:

There is no explanation on what is shown in the pictures; this might be due to the fact that some photos, such as the one above (Figure 5.8) do not need any kind of comment. One might suggest that, on the other hand, tables representing data and maps should be commented; since it is not so, the choice might be due to the fact that the information provided in the pictures is already enough to get the message through.

The only example of a text that might look like a caption is Figure 5.9 below): the process of distillation is explained, but the text has the same font and size of the rest of the text in the document.

Distillation involves boiling water and then collecting only the vapor that condenses. The condensed vapor will not include salt or most other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside-down (make sure the cup is not dangling into the water) and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled.

Methods	Kills Microbes	Removes other contaminants (heavy metals, salts, and most other chemicals)
Boiling	√	
Chlorination	√	
Distillation	√	√

Figure 5.9 Screenshot of page 41 of *Are You Ready?* An In-depth Guide to Citizen Preparedness *(*2004).

e. Layout

The text is divided into ordered sections and, in the passage from one page to the following one, the text occupies alternatively the left and the right side of the page.

Information is organised in a schematic, ordered and essential way, in horizontal and vertical rectangles, and each section of the text is divided by others by a thin blue line and introduced by a short blue headline. There are also some tables in which the text is clearly organised: each section of the table provides a clearer visual idea of the information that is presented (see Figure 5.9 above). This layout is essential and linear.

f. Character and Font Size

The title line is evidently bigger that other parts of the text. All headlines are in bold and their dimensions are generally bigger that other parts of the text. More detailed information was given in section b. (see above).

The font of the main text is quite small and it might be problematic to read, for grandparents and for little children in particular. Some information is preceded by small bullet points, that mark the list-shaped structure of the text.

g. Colours

The predominant colours are blue, black, white and their nuances. This choice should enhance the gravity of the problems presented and, as already suggested, these are the typical colours that FEMA uses in fact sheet for adults and experts.

The only different colour that appears in the text is red, and it is only in logo of FEMA on the first page of the document.

h. Text

This text was written for the general public, and it provides information on how to develop and use emergency plans before, during and after emergencies. The structure and the content of each chapter are ordered and clear; the information transmitted is quantitatively relevant and the font of the main text is quite small: therefore, the informative purpose of the document is realised. Nonetheless, one might also suggest that this document could be difficult to read, for the elderly and the children in particular, and its communicative aim would not be fully accomplished. This consideration is linked to the fact that the range of colours used in the document is limited to black, blue and grey; almost all picture are photos, and they provide additional information, but their colours do not attract the readers' attention. In conclusion, there is not much balance between the purpose of the document, the quantity of the information and the way it is provided.

Text 5.b

FEMA. (February 2007). *Fact Sheet: Floods*. FEMA 555

Number of pages: 2

This fact sheet has been created by the FEMA, and its targets are common citizens, adults in particular. The aim is to provide some general information about floods and some more precise information on what to do before, during and after a flood-related emergency. The structure of the document is very basic, and this is common to most of the documents provided by the FEMA.

The analysis of the elements and variables that characterise this structure (see Section 5.2.3) will follow.

PAGE LAYOUT

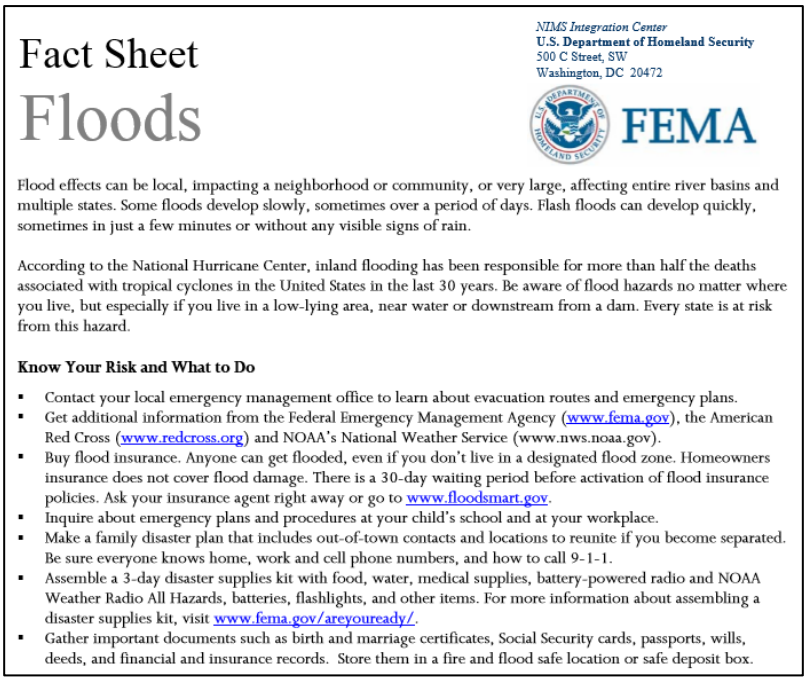
a. Title line

The main title of the work occupies the left upper part of the first page. There is a smaller title, in black, which gives information on the nature of the text, that is a "Fact Sheet" (2007: 1), and a bigger title, in grey, which focuses on the subject of the document, "Floods" (2007: 1).

The logo of the U.S. Department of Homeland Security, part of the FEMA is positioned on the highest section of the page, on the right. Indications of the date and of the number of the document are provided in the lowest part of the two pages, as footnotes.

b. Headlines

The story titles are in bold almost each word (except for 'and') begin with a capital letter. They synthetically introduce the content of each text they introduce.



Fact Sheet

Floods

NIMS Integration Center
U.S. Department of Homeland Security
500 C Street, SW
Washington, DC 20472

FEMA

Flood effects can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states. Some floods develop slowly, sometimes over a period of days. Flash floods can develop quickly, sometimes in just a few minutes or without any visible signs of rain.

According to the National Hurricane Center, inland flooding has been responsible for more than half the deaths associated with tropical cyclones in the United States in the last 30 years. Be aware of flood hazards no matter where you live, but especially if you live in a low-lying area, near water or downstream from a dam. Every state is at risk from this hazard.

Know Your Risk and What to Do

- Contact your local emergency management office to learn about evacuation routes and emergency plans.
- Get additional information from the Federal Emergency Management Agency (www.fema.gov), the American Red Cross (www.redcross.org) and NOAA's National Weather Service (www.nws.noaa.gov).
- Buy flood insurance. Anyone can get flooded, even if you don't live in a designated flood zone. Homeowners insurance does not cover flood damage. There is a 30-day waiting period before activation of flood insurance policies. Ask your insurance agent right away or go to www.floodsmart.gov.
- Inquire about emergency plans and procedures at your child's school and at your workplace.
- Make a family disaster plan that includes out-of-town contacts and locations to reunite if you become separated. Be sure everyone knows home, work and cell phone numbers, and how to call 9-1-1.
- Assemble a 3-day disaster supplies kit with food, water, medical supplies, battery-powered radio and NOAA Weather Radio All Hazards, batteries, flashlights, and other items. For more information about assembling a disaster supplies kit, visit www.fema.gov/areyouready/.
- Gather important documents such as birth and marriage certificates, Social Security cards, passports, wills, deeds, and financial and insurance records. Store them in a fire and flood safe location or safe deposit box.

Figure 5.10 Screenshot of the upper part of page 1 of *Fact Sheet: Floods*. FEMA 555 (2007).

c. Pictures

No picture is provided, except for the logo of the U.S. Department of Homeland Security.

d. Captions

There is no caption.

e. Layout

The text is divided into ordered sections and it is distributed horizontally. At the end of page 2, there is a table in which FEMA provides a curiosity about floods (see Figure 5.11 below).

Dangerous Flood Myth!	The Facts:
A 100-year flood occurs only once every 100 years.	The 100-year flood is a climatic average; there is a 1 percent chance that a 100-year flood will occur in any given year.

Figure 5.11 Screenshot of the lower part of page 2 of *Fact Sheet: Floods*. FEMA 555 (2007).

f. Character and Font Size

The dimensions of the letters change according to the type of information and of the content of the text: the title line is bigger that other part of the text, while the other titles are in bold; the font of the main text is quite small and it might be difficult to read. In the main text, small bullet points that mark its list-shaped structure always precede the information.

g. Colours

The predominant colour is black, and the only different colours are blue and grey. The logo is blue, which is the official colour of the logo; there is also some red. Blue also indicates the links to the websites, but it does not have any particular meaning related to the fact sheet.

The title that indicates the subject of the document is grey; it is the only original choice of the authors and its purpose is to highlight the topic. The nuance of grey balances the colours chosen by the FEMA.

h. Text

This text aims to provide the general public clear and precise information on floods and on how to manage them. The use of technical language is limited and the text is organised in precise and ordered sections. The use of the colours is very basic, and the main distinction is between the title line, headlines and the rest of the text. All these elements, including the complete absence of pictures, exception made for the FEMA logo, contribute to the informative purpose of the document and to is formal appearance.

Text 6.b

FEMA. (August 2013). *Floods Fact Sheet for Kids*

Number of pages: 2

This fact sheet has been created by the FEMA and can be found of the website related to it called Ready.gov. The target of this text is children, and its aim is to provide some general information about floods and some more instructions on what to do before, during and after a flood-related emergency.

The text is divided into different sections. The analysis of the elements and variables that characterise this fact sheet (see Section 5.2.3) will follow.

PAGE LAYOUT

a. Title line

The main title of the work, "Floods" (2013: 1) occupies the left upper part of the first page. It is in bold and it is quite small. The logo of the FEMA and of the Ready.gov program is positioned right above the title line.

b. Headlines

The story titles are usually bigger than the text itself. The first headline on page two is quite big, it is in italic, it occupies the central upper part of the page and the first letters of each word are capital. Smaller headlines are all capital and in italic. They synthetically introduce the content of each section.

c. Pictures

Two very colourful pictures are provided: the first one, below the title line, clearly represents one of the consequences of flood: it is a drawing of a car submerged by the water.

The second picture is a young girl, who represents the hero of the flood-related fact sheets: she gives the children precious information and encourages them to become heroes.

d. Captions

There are no captions.

e. Layout

The text on the first page is organised into a three-part structure: in the first part, there is a picture of a flooded car and a short description of what floods are. In the second part, on the left, there is the definition of flood, provided by the hero of the fact sheet, and a small curiosity on floods: the hero gives the readers some additional information on floods. In the third part, on the lowest right side of the page, there is a table with a quiz on floods, whose aim is to understand whether the information given before has been retained.

The text on the second page, all information is inside a table, divided into two columns: on the left there are instructions on what to do before, during and after the natural hazard; on the right, there is a small list of definitions.

f. Character and Font Size

The dimensions of the letters change according to the type of information and of the content of the text: the title line and headlines are bigger than other parts of the text. On the other hand, the font of the main text is quite small and it might be difficult to read.

g. Colours

Colours play a fundamental role in this document. It was written for children, and its main aim is to connect with them, attract their attention and involve them in emergency management in the most pleasant way possible.

The predominant colours are orange (in the headlines) and blue (in the title line and in a small text that provides a definition of flood. The readers may notice that blue is the complementary colour for yellow, and this is why the authors have chosen these colours: there are different nuances of orange, which sometimes turn into red and yellow; it is used to attract the readers' attention. Blue, on the other hand, recalls water to the mind of the children (see Figure 5.12 below).

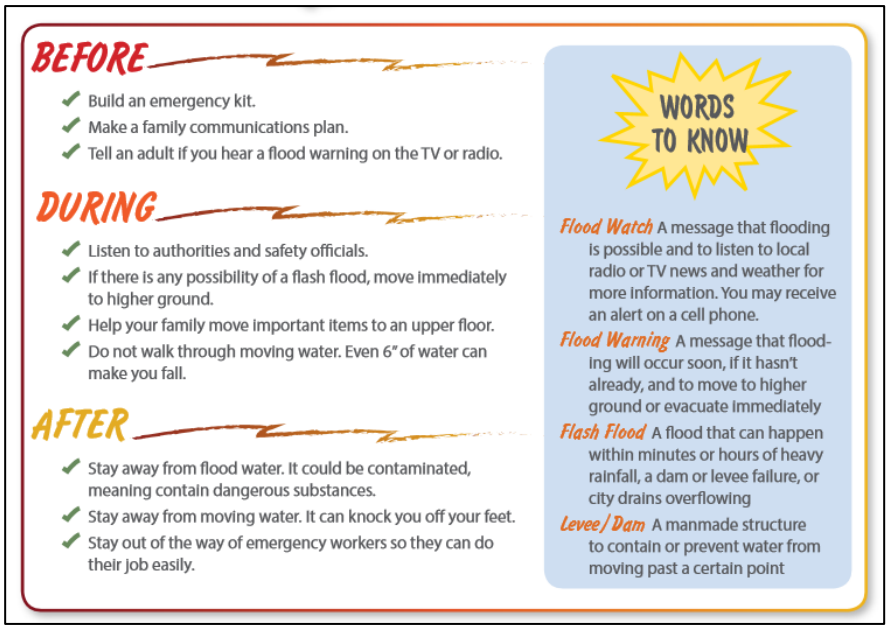


Figure 5.12 Screenshot of part of page 2 of *Floods Fact Sheet for Kids (2013)*.

h. Text

This text was written for children, with the aim of providing instructions on what to do before, during and after a flood. The structure of this document is very basic, the use of specific and technical language is very limited (see Chapter 4) and the texts are not too long. Moreover, the use of pictures, that are only two, is important to give visual representations of the possible consequences of floods (first picture) and on what to do to face them (second picture); the colours, mainly blue and orange, attract the children's attention on the focal points of the text, and contribute to the educational purpose of the text.

In short, despite the meaningful choice of colours and of contents, this document cannot be considered an example of effective communication for children, because, as the readers can see in Figure 5.12, the layout and the font and dimension of the text do not help the reading.

5.5 Conclusions, Limitations and Possible Improvements

Nowadays, experts are aware that scientific and technical texts should be more pleasant for the general public: they have studied the needs of the readers and tried to establish the "reader-author" relationship (Grice 1975: 46 in Wright 1993: 24). In short, they have taken up the challenge to make special languages more accessible and understandable to everyone, from adults to children.

The need for awareness and interest in emergencies is central: knowledge can, in fact, save lives. Visual aspect of texts play a fundamental role in the transmission of

knowledge: the more a text is pleasant to the eye, the more it attracts attention, the more readers are likely to continue reading and, finally, the more the information gets through.

From the results presented in the previous sections, it can be observed that all texts for non-experts, regardless of their language, respect the expectations. In fact, the fact sheets created for children (see texts 6.a and 6.b) are visually very colourful and they attract the little readers' attention. Moreover, they do not contain too much text, and they use the medium of images and drawings in order to increase the potential of the information they communicate. One might argue that the font and dimensions of the letters are too small; anyway, the message is conveyed quite straightforwardly. The fact sheets that target the general public, adults in particular (see text 5.b in particular) are, evidently, less colourful and engaging: their aim is to provide clear and essential information, and they visually manage to do this with a limited range of colours and with precise and well-structured texts.

Finally, the fact sheets for families (see texts 4.a, 5.a, 4.b) seem to combine engaging and pleasant visual elements, and clear and basic information quite successfully: since their target are all members of the families, from the children to the eldest, the documents contain colourful texts and original pictures in order to catch the eye of the little readers. They are written in different fonts and dimensions, in order to attract the readers' attention and to maintain it. Also, these texts provide important information with a limited use of specific language and terminology and with a wide range of structural and visual devices such as captions and tables.

It should be underlined that personal criticism and subjectivity played a key role in the analysis of the visual aspects of texts: when reading and analysing a text, in fact, readers understand, interpret and value the text also according to their taste and perception. In short, this analysis shows that, despite the fact that some elements should be improved (among others, choice of the layout and dimension of font), the chosen texts generally represent an attractive and pleasant way of communication both for adults and children.

The comparison between the previous analysis of the visual aspects and the textual analysis of the same texts in Chapter 4 suggests the following conclusions: these texts for non-experts can be considered examples of a quite clear and effective communication. Their choice of language is, generally, not too complex, and their visual presentation is engaging. All in all, authorities seem to have found a way to make technical and scientific contents more accessible to the readers: they partially popularized emergency-related language and matters, and they also managed to create bonding between their previously inaccessible sphere of knowledge and the minds, the consciences and the hearts of ordinary non-experts citizens.

This work can be considered a small step in the developing field of emergency-related studies. In fact, it might provide some basis to enhance future studies and, hopefully, interest future students and readers in approaching the world of communication, which is complex as much as it is challenging.

Chapter 6

Terminological Analysis

6.1 Introduction

This chapter will be devoted to the Slándáil Terminology Wiki, which is a terminology project (TP) funded by the European Union and devoted to emergency-related terminology in particular. The challenging process of the creation of terminology wikis will be explored, emphasising my work within the project. The chapter will begin with a description of the methods used to carry out the task. First, a short overview of the data selection procedure will be offered, together with a list of the documents that will be analysed and that were used as main sources for the work. Second, the different steps of the analysis will be introduced: information on the tool used to organize and store the data, and on the variables and models used for the analysis will be given. Finally, the results of my work will be presented.

Even though the amount of information in the *My PBworks* page was already significant, there were a lot of wiki pages that needed to be updated. My work on the Terminology Wiki was consistent, but it would be difficult to report the results obtained for each wiki page. One sample will sufficiently exemplify my work to the expansion and improvement of the current vocabulary; therefore, focus will be on one wiki page in particular: *flood operations* (www.slandailterminology.pbworks.com). The analysis will begin with the missing elements in the wiki page (see 6.2.3.2): the passages followed in order to complete them and the results will be discussed. Finally, the data will be reported in tables.

6.2 Methods and Material

6.2.1 Collecting and Selecting Documents and Information

The first step in the analysis of emergency-related communication is the collection of data. In the present study, the material was collected through the Internet in two ways. Documents such as the pdf glossaries by Blanchard, the UNISDR Glossary and the glossaries by the FEMA, the Protezione Civile, the IATE and the Disaster Information Management Research Center were provided by the Slándáil Project Office at the University of Padua. I was given access to their computers and to the data and corpora of texts they had already collected. The rest of the documents were available on the Internet: the links to access them were in the glossaries listed above, or they were found by simply typing terms such as ‘emergency’ and ‘glossary’ in different search engines. Additional documents and sources were provided in the Navigation section of the Terminology Wiki. It is relevant to underline that the choice of the sources is part of

the preparatory phase (see section 2.4.1 in Chapter 2) of a TP, and it is a fundamental passage in the collection of material for terminology studies. The selection of the material was based on the following criteria: reliability of the sources and pertinence to the chosen domain (see Chapter 2).

6.2.2 List of the Documents

In the following passages, the list of the documents analysed and used as main sources for the Slándáil Terminology Wiki will be provided. The source of the information needed to complete the wiki pages were official glossaries, both on online websites and in pdf format, and the corpus of texts already provided by the Slándáil researchers.

Among the glossaries on websites, the most relevant for this study were:

- IATE (InterActive Terminology for Europe;

- Glossary by the Protezione Civile;

- Glossary of the FEMA;

- Disaster Information Management Research Center, which provided a long and valuable list of online webpages and glossaries organized according to their main topic of interest.

Among the glossaries in pdf format, the most important for this study were:

- glossaries downloaded from the UNISDR (The United Nations Office for Disaster Risk Reduction) page;

- the glossary “Emergency Management-related Terms and Definition”, edited by the terminology expert B. W. Blanchard in 2007;

- the glossary “Guide to Emergency Management and Related Terms, Definitions, Concepts, Acronyms, Organizations, Programs, Guidance, Executive Orders &Legislation”, edited, again, B. W. Blanchard in 2008;

- the glossary created by the Australian Government in 1998: “Emergency Management Australia Glossary. Australian Emergency Manuals Series. Part I: The Fundamentals. Manual 3.”

6.2.3 Variables, Tool and Models

6.2.3.1 Variables

After the examination and selection of the sources, attention was focused on some of the missing entries of the Terminology Wiki. As the reader may have noticed in section 6.2.2, the documents listed are in English and in Italian: German is among the languages of Project Slándáil and of the Terminology Wiki, but my attention was placed on English and Italian terminology in particular. The main variable considered in the development of the wiki pages is terminology, more specifically terms, that were extracted manually from the above mentioned sources. The first passage was the identification of the terms and of their belonging to some specific conceptual fields: since the English terms were already provided both in the Homepage and in each wiki page, attention was placed on the Italian correspondent terms of the English ones. Each term was considered on the basis of some features (see phase 2 in Section 2.4.1 in Chapter 2).

The first feature was the occurrence, or frequency, of the term, that is how often it appeared in the chosen English and Italian sources. The second feature was the meaning of the term: its clarity and objectivity, its degree of acceptability and what the experts called "internal language guidelines" (Bauer in Kockaert and Steurs 2015: 336) were fundamental in order to find the right correspondence between English and Italian terms. The third feature was the degree of formality of the term involved: its register varied according to the context of use and to the type of source text from which it was extracted.

In the complex procedure of selecting the right terms, the following principles were taken into account: the notion of special languages, scientific and technical language in particular (see Chapter 1) and the importance of the selection of the right sources and corpora (see Chapter 2). Focus was also given to the importance of the context (see Chapter 1) and of the encyclopaedic information, both relevant elements in Temmerman's sociocognitive approach (see Chapter 2). The second passage in the development of the wiki pages was the indication of the grammatical information of the terms. No phonetic information and no etymological information were provided. The third passage was the description of the previously selected terms, that is their definitions: some definitions were missing both for English and Italian terms (see phase 2 in section 2.4.1 in Chapter 2).

6.2.3.2 Steps of the Analysis

In the following sections, a short description of the steps undertaken in order to complete some of the missing entries of the wikis will be proposed. First of all, to access the wiki pages, the user needs to click on each of the terms (all in English) on the main index in the Homepage (for more details, see Chapter 2, section 2.5.1.2.i). An

overview of all the wiki pages was made, starting from the first ones in alphabetical order, and attention was focused on the empty entries. This work focused only on some specific elements; the list is the following:

a. Terms in Italian and, when possible, in German (the terms in English were all provided already);

a.1 Source (of the Term)

b. Morphosyntax;

c. Definition;

c.1 Source (of the Definition);

d. Context;

d.1 Source (of the Context);

e. Related Terms;

f. Synonyms;

g. References.

The work proceeded following the previous list. The first step was the collection of the missing information. Reference to the documents and glossaries listed in Section 6.2.2 was fundamental in this phase: the possible suitable data were looked for in the provided sources (the variables that were considered are listed in section 6.2.3.1). The second step consisted in the analysis of the data. In this phase, together with the above mentioned variables, the multiple language nature of each wiki had to be taken into account. All the already provided examples in the three languages of the project had to be considered, in order to select, among others, the term and the definition that would better correspond to the term in the language that was needed. The third and final step consisted in the insertion of the selected data in the empty rows of one wiki page. All the steps were repeated for as many wiki pages as possible.

6.2.3.2.i Tool Used

The above mentioned third step is the third phase of a TP, that is the presentation of the data (see point 3 in section 2.4.1 in Chapter 2). The tool used for this is I-Term, which is accessible only to members who possess an account, and only via web browser. In order to use this terminology tool appropriately, I was instructed to proceed as follows: I accessed the Interface from *MyPBWorks* page with the personal account

provided by my University Professors; then, I clicked on each of the terms in the Homepage, and started to work on the incomplete wiki pages in alphabetical order.

Then, in order to modify the wiki pages and insert new information in the empty rows, the following passages were followed: I entered the *Wiki* section and pressed on the buttons for editing; I copy-pasted, wrote and arranged the information selected form the sources in the predefined text fields, and I saved the new wiki page. Moreover, in order to insert new documents and sources in the Terminology Wiki, which would later be available in the Navigator section, I entered the *Pages & Files* section and uploaded the new files.

6.3 Results and Discussion

This section will be devoted to my work to the Slándáil Terminology Wiki: an example of wiki page will be provided, thus allowing the reader to understand how and why this work is relevant to the Project. The results of the work on the candidate term *flood operations* will be presented. The elements on which this work focused on are the ones listed in Section 6.2.3.2. Each of these passages will be taken into consideration: the steps that were followed will be presented, and the choices and the difficulties encountered will be discussed. Moreover, since the wiki pages can be accessed by members only, no screenshot of the flood operations wiki page could be provided. Therefore, tables containing each of the element listed above will be presented, in order to provide the reader with a visual idea of how a wiki page is organised. I will now proceed with the presentation of the work and the results of the candidate term, *flood operations*.

a. Terms

For some of the wiki pages, the terms in all three languages were already given. Nonetheless, in most of the cases, the equivalent terms had to be investigated. Interest was placed on the English and the Italian terms. The German term will be represented in the tables, but it will not be discussed. The main term, *flood operations,* was already given in English and German. The term in Italian was missing, as can be seen in the table below (empty spaces will be indicated with the symbol -). This phase of the process, which is the main phase in the development of a TP, was possibly the most challenging and controversial one: it consisted in the identification of the Italian correspondent terms of the English ones; but the selection of the appropriate Italian term was not straightforward.

	ENGLISH	ITALIANO	DEUTSCH
a. TERM	flood operations		Hochwassereinsätze

a.1 Source of the Term

In order to find the Italian correspondent, the work on the sources was fundamental: as previously suggested, the sources used for the collection of the terms were mostly the corpora and the glossaries that had already been uploaded in the Navigator section, and that could therefore be considered reliable and pertinent to the domain. The main source consulted for this wiki (and for many others, when concerning Italian language) was the website of Protezione Civile, more specifically, the Amalfi's local association page, which is part of the Italian Protezione Civile: on the page devoted to Protezione Civile, there was the indication of the three main fields in which the association operates. In the section devoted to hydrology and hydrological risks, there was a possible Italian equivalent of the English *flood operations*.

In order to understand if this term was the *right* one, some of the features mentioned in Section 6.2.3.1 had to be respected: first, the meaning of the term was considered in the comparison with the one provided for the English term. Second, the register of the Italian term was considered: the context is a scientific and technical one, and it therefore needs a precise, objective and formal term. The final choice was *attività del rischio meteo-idrogeologico e idraulico*. The following table reports the Italian term and its source.

	ENGLISH	ITALIANO	DEUTSCH
a. TERM	flood operations	attività del rischio meteo-idrogeologico e idraulico	Hochwassereinsätze
a.1 SOURCE	EMA (2009: 15)	P.A. Millennium Amalfi Onlus	BBK 2006

It is important to highlight that, whenever a good equivalent of a term in one of the three languages of the project was found, the element of personal judgement ("internal language guidelines") played an important role, both in the choice of the terms and in the choice of the sources. Despite the fact that most of the sources were official documents and glossaries such as the European IATE, the International Red Cross site and the websites managed by FEMA and Protezione Civile, the choice on whether a source, and the terms in it, could be retained valuable and, most of all, trustworthy was partially placed on the users.

b. Morphosyntax

The second passage in the development of the wiki pages was the indication of the grammatical information of the terms. Morphosyntax did not present consistent difficulties: the simple indication of the gender and of the number of the terms had to be provided.

	ENGLISH	ITALIANO	DEUTSCH
a. TERM	Flood operations	Attività del rischio meteo-idrogeologico e idraulico	Hochwassereinsätze
a.1 SOURCE	AIDR (2009: 15)	P.A. Millennium Amalfi Onlus	BBK 2006
b. MORPHOSYNTAX	Noun	feminine, pl.	masculine, pl.

c. Definition and c.1 Source (of the Definition)

For what concerns the definition of the terms, much information was found on the online disaster related glossaries listed in Section 6.2.2, on the glossaries already uploaded in the Navigator section and on the ones already provided by the Professors. This element presented a significant difficulty: there was a great amount of possible definitions in the glossaries, but only one, sometimes two, had to be chosen. As underlined in Section 2.4.1 in Chapter 2, this/these definition(s) had to be general and yet precise at the same time and had to encompass the effective meaning of each term. This selection was not always straightforward, and it often involved a personal choice. The results are indicated in the table below.

Concerning the English term *flood operations*, the definition was provided by the same source of the term itself: the Australian Institute for Disaster Resilience can be considered a valuable source of information, because its purpose is providing emergency management practice publications and manuals. The Italian definition was found (as it is often the case for Italian terms) in the official website of Dipartimento di Protezione Civile. The sources of the definitions are indicated in the last row of the following table.

	ENGLISH	ITALIANO	DEUTSCH
a. TERM	flood operations	attività del rischio meteo-idrogeologico e idraulico	Hochwassereinsätze
(…)[8]	(…)	(…)	(…)
c. DEFINITION	The receipt and interpretation of flood information, which can include formal flood warning products and observations of heavy rainfall or stream rises.	Le attività di previsione e prevenzione si basano su un collegamento sempre più stretto tra protezione civile e il mondo della ricerca scientifica, con nuovi sistemi tecnologici di raccolta ed elaborazione delle informazioni, centri di elaborazione dei dati in grado di segnalare con il massimo anticipo possibile le probabilità che si verifichino eventi catastrofici, l'elaborazione di sofisticate ed efficienti cartografie di rischio, la promozione di strumenti normativi e tecnici per la prevenzione e mitigazione dei danni.	
c.1 SOURCE	AIDR (2009: 15)	Dipartimento di Protezione Civile	

d. Context and d.1 Source (of the Context)

The context was one of the main variables that had to be taken into account in the choice of the term: not only it provides an important contribution to the meaning of the term itself; it also provides additional information to the specification of the term. The research of the context was not a simple task, since it also involved personal judgment. As clearly explained in the Slándáil website,

> a term is something that has meaning in a specific context. It can be made up of one word or several in the English language, but is always context-specific. For example, the word 'flood' might signify a disaster event in the sentence 'The roads have flooded near the

[8] (…) indicates that there are other rows after and before the ones inserted in the table. It is not necessary to report them all again.

river', but has a different context in the sentence 'The people flooded into the supermarket'. (www.slandail.eu)

Since one term can, according to the context it is inserted in, change its meaning and acquire different *nuances*, it was impossible to set human sensibility apart: terminology too, traditionally considered a purely scientific and neutral science, must bow to the laws of communication. In some glossaries, contexts were part of the definitions of the terms; other contexts had to be found in the documents provided to and by the researchers.

In this case, the context in English was already provided by previous users. The source for the context of the Italian correspondent was, once again, Protezione Civile, more specifically, the association of Protezione Civile in the region of Puglia. It was chosen because it provides more specific information on the definition previously given; it can also be seen as an extensional definition. It gives additional information on the main types of flood risks and on the elements that influence them.

	ENGLISH	ITALIANO	DEUTSCH
a. TERM	flood operations	attività del rischio meteo-idrogeologico e idraulico	Hochwassereinsätze
(…)	(…)	(…)	(…)
d. CONTEXT	**Flood operations** involve the receipt and interpretation of flood information. Flood information can include formal flood warning products and observations of heavy rainfall or stream rises. Flood information must be interpreted to identify possible flood consequences using flood intelligence. It is often difficult to identify the potential specific flood consequences in flash flood environments where no gauge height predictions are available.	Le **attività del rischio meteo-idrogeologico e idraulico** rientrano gli effetti sul territorio determinati da condizioni meteorologiche avverse e dall'azione delle acque in generale, siano esse superficiali, in forma liquida o solida, o sotterranee. Le manifestazioni più tipiche di questa tipologia di fenomeni sono temporali, venti e mareggiate, nebbia, neve e gelate, ondate di calore, frane, alluvioni, erosioni costiere, subsidenze e valanghe. Il rischio meteo-idrogeologico e idraulico è fortemente condizionato anche dall'azione dell'uomo. La densità della popolazione, la progressiva urbanizzazione, l'abbandono dei terreni montani, l'abusivismo edilizio, il continuo disboscamento, l'uso	Für diese neue Struktur wurde durch das Bundesland Baden-Württemberg auch die Technik ertüchtigt. Die DLRG konnte hier die Partnerschaft im Bevölkerungsschutz weiter ausbauen und ist heute aus **Hochwassereinsätzen** zur Rettung und zum Schutz der Bevölkerung landesweit nicht mehr wegzudenken. Die Investitionen des Landes Baden-Württemberg sind auch ein Vertrauensbeweis, den richtigen Partner für diese Aufgaben zu

		di tecniche agricole poco rispettose dell'ambiente e la mancata manutenzione dei versanti e dei corsi d'acqua hanno sicuramente aggravato il dissesto e messo ulteriormente in evidenza la fragilità del territorio italiano, aumentando l'esposizione ai fenomeni e quindi il rischio stesso.	fördern.
d.1 SOURCE	AIDR (2009: 6)	Associazione Volontariato e Protezione Civile Deliceto	BBK magazin (2012: 49)

e. Related terms and f. Synonyms

The related terms and synonyms sections were usually completed by other researchers, as is the case for the English ones, but in some occasions my work was given too. Some glossaries provided not only definitions, but also contexts and, inside them, some synonyms and some links to terms related to the main ones. They were not always easy to discover. In this particular case, Italian related terms were found on the website of Protezione Civile, and they can also be deduced from the Italian term (a.) itself. As the reader may notice, they are subordinated, that is on a conceptual level lower that the one of the main term: they are the different types of risks that are caused by floods. No synonym was provided.

	ENGLISH	ITALIANO	DEUTSCH
a. TERM	Flood operations	Attività del rischio meteo-idrogeologico e idraulico	Hochwassereinsätze
(…)	(…)	(…)	(…)
e. RELATED TERMS	emergency operations *super.*; flood *general*	rischio meteorologico, rischio idraulico, rischio idrogeologico, *sub.*	
f. SYNONYMS			

It should be pointed out that related terms are often terms belonging to the wiki itself, as is the case with the English ones.

g. References

The references part provides a complete and more accurate list of all the sources and the references indicated in the spaces above. The extended references for *flood operations* are in the table below.

g. REFERENCES	AIDR (2009). "Flood response" https://www.em.gov.au/Documents/Manual%2022-Flood%20Response.PDF Dipartimento della Protezione Civile http://www.protezionecivile.gov.it/jcms/it/attivita_idrogeologico.wp Associazione Volontariato e Protezione Civile Deliceto "Rischio meteo-idrogeologico ed idraulico" http://www.protezioneciviledeliceto.org/consigli-utili/rischio-idrogeologico.html P.A. Millenium Amalfi onlus. Attività del rischio meteo-idrogeologico e idraulico http://lnx.millenium.it/WP/protezione-civile/il-rischio-idrogeologico/ BBK (2006). Newsletter http://www.bbk.bund.de/SharedDocs/Downloads/BBK/DE/Publikationen/Newsletter/Newsletter_7-06.pdf?__blob=publicationFile BBK magazin (2012: 49) http://www.bbk.bund.de/SharedDocs/Downloads/BBK/DE/Publikationen/Publ_magazin/bsmag_1_12.pdf?__blob=publicationFile

6.4 Conclusions: Findings, Interpretations and Limitations

The purpose of this chapter was to provide information on the development of the Slándáil Terminology Wiki, as a valuable example of TP (terminology project) devoted to emergency-related terminology. Particular attention was placed on my personal work within the project. While one might think that this work was substantive, one might also observe that one month was not sufficient to provide a wider contribution. In fact, the wikis I completed were few compared to their total number; some had a few rows missing, others were entirely empty. In addition, since only members can access the Terminology Wiki, and its contents are covered by copyright, one example will provide enough information on the Project to the reader.

The analysis of the Slándáil Terminology Wiki confirms and justifies a relevant observation: terminology is not an easy path to walk. Besides, working on terminology can be less objective and straightforward than one might think; it often involves personal judgement, and this might be considered both a positive aspect and a drawback. Indeed, language, and the discipline of terminology too, is communication, and communication is part of all human beings. In conclusion, even though improvements will need to take place in the future, this brief yet intense experience in the world of terminology was productive not only for the Project, but also for my personal and educational growth.

Conclusions

This paper is the result of a precise and thorough analysis of some selected documents related to emergency management and natural hazards and, more specifically, of documents edited for experts and for non-experts. This study started with some considerations on a wide and valuable background literature, focusing on communication in emergency situations, on special languages in scientific and technical contexts and on terminology.

The first observations highlighted the fact that special languages, in scientific domains in particular, have an elitist nature, and are accessible only to experts close to their fields. Nonetheless, specialists have become aware of this situation and made an effort in trying to popularize technical contents and involve non-experts in the communication process. This awareness is particularly relevant considering the importance of communication and of understanding in emergency situations, where the most important aim is saving lives. My aim was to provide a consistent evaluation of the chosen texts and understand if the texts for the general public (non-experts) could be considered effective and relevant examples of communication. I focused on ordinary citizens, adults and children in particular, because they do not possess any specific experience in scientific and technical fields; I tried to see if the documents provided by the American FEMA and the Italian Protezione Civile could captivate their attention and, most importantly, satisfy their need and right to knowledge and information in emergencies.

In order to achieve this aim, a two-step analysis was developed: first, the textual content, that is the language of both texts for experts and for non-experts was analysed; aspects such as word count, frequency and key words were taken into account. The readability index of all texts was also considered as an important variable. Second, I considered specific visual aspects such as layout, character, font and colours, in texts for non-experts. The second step consisted describing my contribution to the Slándáil Terminology Wiki, as a new technological project in emergency management and emergency-related studies.

The results of the textual analysis (see Chapter 4) were the following: fact sheets for non-experts provided, in short, instructions and guidance on emergency management, flood in particular. Their target readers were adults, families and children. These texts were expected to have the following characteristics: a limited use of emergency-related terminology, low degrees of syntactic and sematic complexity and, consequently, high readability indexes.

The software system Oxford Wordsmith Tools 4.0 provided the frequency lists of the Italian and English keywords we had selected, and the word count of all texts individually. From the histograms and the tables in section 4.4, it appears evident that the percentage of frequency of technical words is generally much higher in texts for experts than it is in texts for non-experts, both in Italian and English texts. Second, Tint and Word measured the readability indexes of all texts: from the comparison of the data,

I noticed that, as foreseeable, the index is generally higher in texts for the general public, for families and children in particular, and lower in texts for experts. Nonetheless, this value is based on algorithms and the variables of the calculation were the number of words, of syllables and letters; the results of the calculations are objective and consistent. Nevertheless, it is also true that a machine could hardly understand the complexity and the beauty of human language. I have also noticed that not all texts for non-experts are easier that the ones for experts: in fact, texts for experts are sometimes more accessible to the general public than the ones for non-experts. This information contradicts one of our hypotheses, allowing us to ponder on the complexity of language, and of special languages in particular. Therefore, these results should be considered with a prudent attitude. It can be observed that establishing a bond between experts and non-experts is not an easy task. In fact, modern terminologists and scientists are trying to popularize technical content and make science more comprehensible and accessible to citizens; but this process is not an easy one. The texts analysed clearly exemplify this difficulty, which becomes more evident when communicating in emergency situations in particular.

As for the visual aspect of texts, they play a fundamental role in the transmission of knowledge. From their analysis, despite the fact that some elements should be improved, and that this analysis also depended on my personal criticism and subjectivity, texts for non-experts generally represent an attractive and pleasant way of communication both for adults and children.

The comparison between the previous analysis of the visual aspects and the textual analysis of the same texts in Chapter 4 suggests the following conclusions: these texts for non-experts can be considered examples of a quite clear and effective communication. Their choice of language is, generally, not too complex, and their visual presentation is engaging. Authorities seem to have found a way to make technical and scientific contents more accessible to the readers: they partially popularized emergency-related language and matters, and they also managed to create bonding between their previously inaccessible sphere of knowledge and the minds, the consciences and the hearts of ordinary non-experts citizens. All things considered, even though some might suggest that the corpus selected were not very wide, and some data were reliable but sometimes difficult to interpret, this work can be considered a valuable contribution to present emergency-related studies, and to possible future studies.

Finally, concerning the Slándáil Terminology Wiki, despite time limitations, my contribution to the development of some wikis was consistent. The purpose of this chapter was to provide information on the development of the Slándáil Terminology Wiki, as a valuable example of TP (terminology project) on emergency-related terminology. Particular attention was placed on my personal contribution to the project.

While one might think that this contribution was consistent, one might also observe that one month was not sufficient to provide a wider contribution. In fact, the wikis I completed were few compared to their total number; some had a few rows missing, others were entirely empty. In addition, since only members can access the Terminology

Wiki, and its contents are under copyright, one example will provide enough information on the Project to the reader.

The analysis of the Slándáil Terminology Wiki confirms and justifies a relevant observation: terminology is not an easy path to walk. Besides, working on terminology can be less objective and straightforward than one might think; it often involves personal judgement, and this might be considered both a positive aspect and a drawback. Indeed, language, and the discipline of terminology too, is communication, and communication is part of all human beings.

In conclusion, even though improvements will need to take place in the future, this brief yet intense experience in the world of terminology can be considered productive not only for the Project, but also for my personal and educational growth. I feel proud to affirm that this work is a small yet significant step in the developing field of emergency related studies. In fact, it might provide some basis to enhance future studies and, hopefully, interest future students and readers in entering the world of terminology, which is complex as much as it is challenging.

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Riassunto in Italiano

Il mondo di oggi vive di un continuo e sempre più crescente scambio di informazioni. Che si tratti di politica, economia, fatti di cronaca o semplice gossip, l'informazione regna sovrana, e così anche la tecnologia che ne permette la diffusione e, in primo luogo, la creazione. Tutti possono accedere all'informazione, e tutti possono contribuirvi; la distinzione tra ciò che viene comunicato e l'affidabilità delle fonti e del contenuto risulta così confusa. E' in tale contesto che si inserisce la comunicazione riguardante l'ambiente e, più nello specifico, la comunicazione riguardante le emergenze legate alle catastrofi naturali. Se è vero che gli studi legati alla gestione delle emergenze stanno conoscendo un notevole progresso, è anche rilevante il fatto che i problemi legati alle emergenze ambientali si facciano sempre più concreti, e che quindi il bisogno di gestirli diventi sempre più reale.

Questo elaborato si inserisce proprio in questo contesto, ed in particolare nel modo in cui avvengono le comunicazioni in caso di catastrofi ed emergenze dovute a fenomeni naturali. Gli studiosi del campo stanno cercando di portare a miglioramenti sia a livello comunicativo che a livello pratico, ed il mio lavoro si propone come nuovo e valido contributo a questi studi: partiremo da alcune riflessioni sul complesso processo di gestione delle emergenze e sulla comunicazione delle stesse. Prenderemo in esame dei reali esempi di comunicazione per non esperti, ovvero per il pubblico generale, ed altri per esperti. Cercheremo di capire se esiste o può esistere un qualche equilibrio tra le informazioni fornite e diffuse in situazioni di catastrofe naturale, e il modo in cui tali informazioni vengono comunicate al pubblico. Nello specifico, vedremo se i documenti per non esperti possono essere ritenuti esemplificativi di una comunicazione valida e, soprattutto, concreta. Un secondo scopo che intendo raggiungere riguarda lo Slándáil Terminology Wiki: le varie componenti che costituiscono le pagine wiki di questo dizionario terminologico online saranno analizzate nel dettaglio; inoltre, fornirò un esempio del mio contributo allo sviluppo di questo.

Partiremo da un assunto riguardante la lingua e, nello specifico, la terminologia: è fondamentale, traducendo e parafrasando la linguista belga Rita Temmerman (2000: 221), che le lingue speciali, ed il linguaggio scientifico e tecnico in particolare, vengano studiate e descritte nel rispetto di una vasta gamma di utenti. La terminologia, in parole povere, non deve più essere appannaggio solo della classe elitaria di esperti in determinati settori, ma può e deve essere per tutti. Inoltre, la terminologia non deve limitarsi ad essere considerata un linguaggio meccanico ed oggettivo; elementi quali il contesto, il significato e la componente umana della lingua vanno sempre presi in considerazione. E' con queste riflessioni in mente che ci proponiamo di capire se i testi ufficialmente ritenuti fruibili per il pubblico generale siano effettivamente fruibili oppure no. Il target della nostra analisi saranno in particolare adulti e bambini, ed il tipo di emergenza che farà da sfondo alla nostra argomentazione sarà l'alluvione.

Potremmo affermare che il nostro lavoro s'inserisce, a livello accademico, nell'ambito degli studi interculturali e, in modo particolare, nella lingua e linguistica inglese e italiana. Altre discipline, come le pubbliche relazioni e la comunicazione saranno coinvolte.

Il corpus di analisi sarà il seguente: prenderemo in considerazione 12 testi in totale, 6 testi in lingua inglese e 6 testi in lingua italiana, di cui, rispettivamente, 3 saranno per esperti e 3 per non esperti. Le fonti principali dei documenti scelti sono la Protezione

Civile Italiana e la FEMA, ovvero l'Ente Federale per la Gestione delle Emergenze degli Stati Uniti.

Il mio lavoro si baserà, innanzitutto, su un'attenta e critica rilettura di alcune teorie e assunti di base, che fungeranno da scenario per l'analisi tecnica che seguirà. In primo luogo, forniremo alcune nozioni basilari in ambito di gestione delle emergenze, definendone ed elencandone, nel dettaglio, le quattro fasi. Ci concentreremo poi sul concetto, essenziale, di comunicazione: ne daremo una definizione generale, per poi indagarne le varie componenti. Visto che l'ambito della nostra ricerca è la comunicazione nei casi di emergenza, ci focalizzeremo sulla comunicazione cosiddetta *mediata*, e sull'uso dei media, dei social media in particolare, nel processo di diffusione delle notizie. In tale contesto, vedremo l'uso che la Protezione Civile e la FEMA fanno di questi.

Ci concentreremo, inoltre, sul linguaggio della divulgazione scientifica, definendo le lingue speciali e le loro caratteristiche. Sarà in questo ambito che due concetti più che essenziali saranno introdotti: la popolarizzazione del linguaggio tecnico-scientifico e la creazione di un legame (*bonding*) tra i due attori della comunicazione, ovvero l'autore e il lettore.

Un altro concetto imprescindibile nel nostro lavoro è quello di terminologia: ne forniremo una definizione e, a brevi linee, la storia, partendo dalle origini e giungendo a due approcci contemporanei allo studio su di essa: introdurremo prima il concetto di "Terminologia Sociocognitiva" di R. Temmerman, e poi i progetti terminologici (*TP*) quali approccio digitale agli studi terminologici.

Citando e traducendo la rivista Slándáil Magazine (2015: 3), i disastri naturali non rispettano alcun confine e non fanno distinzione tra i cittadini. A partire da questa affermazione, purtroppo veritiera, nel primo capitolo forniremo prima una definizione di gestione delle emergenze, in particolare quelle dovute a cause naturali, ed una definizione di alluvione poi. Ci concentreremo, in ordine, su cosa è un'emergenza, su cosa è la gestione di questa e sulle quattro fasi che la compongono: la previsione, la prevenzione, il soccorso ed il superamento dell'emergenza. Forniremo una breve introduzione sul genere di relazione tra la gestione delle emergenze e la comunicazione, analizzando nel dettaglio il ruolo della comunicazione nelle varie fasi precedentemente elencate. Nello stesso capitolo, offriremo una definizione di comunicazione, così come una dettagliata descrizione dei diversi elementi che la costituiscono. Particolare attenzione sarà data alla comunicazione mediata.

In secondo luogo, ci focalizzeremo sulle lingue speciali utilizzate nei domini della scienza e della divulgazione scientifica; definiremo le lingue speciali e le loro varie caratteristiche e spiegheremo perché tali concetti sono rilevanti per lo studio. Dedicheremo un paragrafo al concetto di popolarizzazione.

In terzo luogo, parleremo di canali di comunicazione e vedremo, nel dettaglio, i vari canali utilizzati dalla

FEMA e dalla Protezione Civile per comunicare. Daremo anche una definizione di *fact sheet*, i documenti informativi su cui l'analisi si concentrerà. Cercheremo di capire quanto il design di tali testi sia importante e forniremo delle brevi definizioni dei vari elementi che terremo in considerazione nell'analisi visiva del corpus per non esperti.

Il secondo capitolo può essere idealmente suddiviso in due sottocapitoli: la prima parte sarà dedicata alla terminologia, la seconda al progetto Slándáil. Inizialmente, forniremo una definizione di terminologia e apriremo una breve parentesi sul suo sviluppo storico e linguistico dai suoi inizi fino ad oggi. Tratteremo quindi i diversi

concetti chiave della terminologia contemporanea, concentrandoci sull'approccio sociocognitivo ad essa. Ritorneremo poi sul concetto di lingue speciali e su quello di terminologia nella gestione di emergenze. Quindi, porremo la nostra attenzione sul concetto di TP, progetto terminologico: ne spiegheremo i vari obiettivi ed elencheremo le varie componenti. Ci concentreremo poi sullo Slándáil Terminology Wiki e spiegheremo perché questo può essere considerato una componente sostanziale, se non essenziale, del progetto.

I capitoli terzo, quarto e quinto saranno dedicati all'analisi dei documenti scelti. Nello specifico, il capitolo 3 sarà dedicato ai metodi seguiti nell'analisi testuale. Dopo aver fornito i criteri e i passaggi di selezione dei testi, ci concentreremo sugli strumenti utilizzati per l'analisi e sulle variabili considerate. Nello specifico, il corpus di partenza era costituito da 12 testi totali (per esperti e non) in lingua inglese, e da 10 per la lingua italiana. Dopo un'attenta revisione di tutti e 22 i documenti e un'accurata selezione, siamo giunti ad una selezione di 12 documenti in totale.

Esamineremo quindi i 12 testi per esperti e per non esperti in entrambe le lingue. Esamineremo le caratteristiche comunicative di tutti i documenti, prima da un punto di vista testuale, poi (solo i testi per non esperti), da un punto di vista visivo. I risultati di quest'analisi saranno presentati nel capitolo 4.

I primi testi analizzati hanno come fruitori un pubblico di esperti. I testi per la lingua italiana sono i seguenti:

- Autorità di Bacino del Fiume Po. (2016). *Piano per la valutazione e la gestione del rischio di alluvioni.* III A. Relazione di piano. Primo piano di gestione del rischio di alluvioni (PGRA 2015-2021). Sezione A (D. Lgs. n. 49/10 art 7, comma 3 lettera a);
- Regione del Veneto. (2012). *Protocollo operativo per la gestione delle emergenze.* Redatto ai sensi della DGR N. 666/2012. Documento Operativo del Piano Regionale di Protezione Civile;
- Ministero dell'Ambiente, della Tutela del Territorio e del Mare. (2013). *Documento conclusivo del Tavolo Tecnico Stato-regioni.* Indirizzi operativi per l'attuazione della direttiva 2007/06/CE relativa alla valutazione ed alla gestione dei rischi da alluvioni con riferimento alla predisposizione delle mappe della pericolosità e del rischio di alluvioni (Decreto Legislativo n. 49/2010).

I secondi, invece, hanno come fruitori un pubblico di non esperti:

- Presidenza del Consiglio dei Ministri. Dipartimento della Protezione Civile. (2005). *Protezione civile in famiglia*;
- Janinski R. R., Tommasoli L., Di Tomizio-More B. (2004). *Come deve comportarsi un cittadino PRIMA, DURANTE E DOPO un'emergenza*;
- Associazione Civilino. (2013). *Scheda Alluvione*.

I testi inglesi che hanno come fruitori lettori esperti sono i seguenti:

- FEMA. (March 1998). *Managing floodplain development through the National Flood Insurance Program.* Unit 1: Floods and floodplain management.
- FEMA. (March 1998). *Managing floodplain development through the National Flood Insurance Program*. Unit 3: NFIP Flood studies and maps;
- FEMA. (March 1998). *Managing floodplain development through the National Flood Insurance Program.* Unit 10: Disaster operations and hazard mitigation.

I secondi, invece, avranno come fruitori i non esperti:

- FEMA. (February 2007). *Fact sheet: Floods*. FEMA 555;
- FEMA. (August 2004). *Helping children cope with disasters*. FEMA 478;

- FEMA. (August 2013). *Floods fact sheet for kids*.

I materiali utilizzati nell'analisi del testo sono stati raccolti in Internet, in particolare dai siti ufficiali della Protezione Civile e della FEMA. Il documento dell'Associazione Civilino, invece, creato in collaborazione con la Protezione Civile, è stato trovato in formato .zip nel sito dedicato.

Forniremo ora una lista delle variabili considerate, degli strumenti utilizzati nell'analisi e dei modelli teorici da cui è stata tratta l'ispirazione.

Innanzitutto, i file sono stati convertiti da formato .pdf in formato .txt. Le variabili considerate per l'analisi testuale dei testi, in modo particolare per l'uso della lingua e della terminologia, sono, innanzitutto, la frequenza delle parole chiave scelte, le parole chiave fornite dal software e il numero delle parole per ogni testo. Lo strumento utilizzato per tale analisi è il software Oxford WordSmith Tools 4.0. La seconda variabile considerata è l'indice di leggibilità dei vari testi. Per i testi italiani è stato utilizzato il software Tint, disponibile online. Per i testi inglesi è stato utilizzato Microsoft Word.

Nel capitolo 5 verrà proposta l'analisi testuale dei testi, prima per esperti in italiano e in inglese, e poi per non esperti in italiano e in inglese. Il primo software utilizzato è Oxford WordSmith Tools 4.0: WorldList fornirà la frequenza di alcune parole chiave da me selezionate; tramite KeyWords analizzerò le parole chiave (questa volta fornite dal software stesso) dei testi di riferimento. Infine, tramite Concord, analizzerò le concordanze e le collocazioni delle parole chiave.

Le parole chiave selezionate per l'analisi dei testi italiani, scelte in quanto centrali nella letteratura sulle emergenze, sono:

- emergenza/e;
- alluvione/i;
- rischio/i;
- gestione;
- danno/i.

Le parole chiave in lingua inglese sono:

- emergency;
- flood/s;
- risk/s;
- management;
- damage.

Successivamente, le parole chiave scelte saranno rappresentate tramite degli istogrammi, che ci daranno un'idea visiva della frequenza delle parole per ogni testo, permettendoci di studiarne e compararne le tendenze. Infine, inseriremo la componente dell'indice di leggibilità nell'analisi, discutendone infine i risultati e comparandoli nell'ordine precedentemente enunciato.

Il capitolo 5 sarà dedicato ai testi per non esperti in particolare: innanzitutto, indicheremo i metodi utilizzati per la selezione, la raccolta e, infine, l'analisi del materiale, fornendo una breve definizione delle variabili elencate. Considerando prima i 3 testi italiani e poi i 3 testi inglesi, forniremo un'analisi delle componenti visive di ciascun testo, valutando i seguenti elementi: l'intestazione, i titoli, le immagini, le didascalie e le eventuali tabelle, il carattere e le sue dimensioni, la scelta dei colori e, infine, la distribuzione del testo e, brevemente, il suo contenuto. I risultati saranno infine discussi e comparati.

Il capitolo 6 sarà dedicato al mio personale contributo allo Slándáil Terminology

Wiki e si concentrerà sull'analisi terminologica di un termine in particolare, ovvero *attività del rischio meteo-idrogeologico e idraulico*. Innanzitutto, i metodi utilizzati per il reperimento del materiale, le fonti e le variabili considerate saranno presentati.

Le fonti utilizzate per il completamento delle pagine wiki saranno glossari di carattere ufficiale, reperibili sia su siti web online, sia in formato pdf. L'Ufficio adibito al Progetto Slandail dell'università di Padova ha fornito i seguenti documenti: i glossari in formato pdf di Blanchard, il Glossario UNISDR e quelli della FEMA, della Protezione Civile e dello IATE. Le fonti restanti sono state trovate su Internet. Alcuni dei link per accedervi erano presenti nei glossari precedentemente elencati, altri semplicemente inserendo termini come 'emergenza' and 'glossario' nei vari motori di ricerca. Altro materiale è stato trovato nella sezione Navigation del Terminology Wiki.
Gli esemplari di glossario online più utili sono i seguenti:

- lo IATE (InterActive Terminology for Europe);
- il Glossario della Protezione Civile;
- il Glossario della FEMA;

Tra i glossari in formato pdf format più utili, invece, abbiamo:

- i glossari scaricati dalla pagina della UNISDR (The United Nations Office for Disaster Risk Reduction);
- il glossario intitolato "Emergency Management-related Terms and Definition", realizzato da B. W. Blanchard nel 2007;
- il glossario intitolato "Guide to Emergency Management and Related Terms, Definitions, Concepts, Acronyms, Organizations, Programs, Guidance, Executive Orders &Legislation", realizzato sempre da Blanchard nel 2008;
- io glossario creato dal Governo Australiano nel 1998: "Emergency Management Australia Glossary. Australian Emergency Manuals Series. Part I: The Fundamentals. Manual 3."

Gli elementi su cui il mio lavoro sul completamento delle pagine wiki si è concentrato sono i seguenti:

- Termine in lingua italiana e, talvolta, in lingua tedesca;
- Fonte del termine;
- Morfosintassi;
- Definizione;
- Fonte della Definizione;
- Contesto;
- Fonte del Contesto;
- Termini Correlati;
- Sinonimi;
- Fonti (complete).

Le variabili considerate per tale lavoro sono: la frequenza del termine ed il suo significato, le sue diverse accezioni e definizioni, il grado si formalità (registro) ed il contesto all'interno del quale il termine stesso si inserisce.

I principi teorici principali presi in considerazione saranno trattati nel capitolo 2: il concetto di lingue speciali e di linguaggio tecnico-scientifico in particolare, l'importanza del contesto e dell'informazione enciclopedica, fondamentali anche nell'approccio sociocognitivo alla terminologia, e, infine, la definizione stessa di terminologia e le sue principali componenti. Con continui riferimenti ai documenti e ai glossari elencati in precedenza, le informazioni necessarie sono state individuate, analizzate ed infine inserite nelle apposite sezioni vuote delle pagine wiki.

Offrirò ora una sintesi dei risultati a cui il mio lavoro è giunto, a cominciare dall'analisi testuale dei testi scelti: dallo studio e dalla comparazione degli istogrammi e delle tabelle di frequenza delle parole chiave scelte, è emerso che la percentuale di frequenza delle parole chiave è generalmente più elevata nei testi per esperti che in quelli per non esperti.

Inoltre, unendo tali osservazioni a quelle sull'indice di leggibilità, ne risulta che, come prevedibile, l'indice di leggibilità dei documenti per il pubblico generale, per famiglie e bambini in particolare, è più elevato rispetto a quelli per esperti, e quindi la difficoltà è minore. Come però vedremo nello specifico, non tutti i testi per non esperti sono più semplici di quelli per esperti. Ciò porta ad osservare, in sintesi, che la lingua, e l'ambito della terminologia in particolare, presentano un'elevata complessità: non è sempre facile analizzare un testo in modo completamente oggettivo.

Per quanto riguarda l'esame delle componenti visive dei testi per non esperti, invece, la conclusione cui si è giunti è questa: i testi da noi selezionati rappresentano un mezzo di comunicazione sufficientemente piacevole ed interessante per il pubblico cui sono indirizzati.

Considerando ora i risultati delle due fasi di analisi nel complesso, possiamo affermare che i testi per il grande pubblico sono da considerarsi esempi piuttosto riusciti di comunicazione chiara ed effettiva: il loro contenuto testuale e la loro lingua non sono troppo complessi, e la loro presentazione è stimolante. E' quindi possibile constatare che gli esperti in gestione delle emergenze siano riusciti nel loro intento di rendere contenuti di carattere tecnico e scientifico maggiormente accessibili al lettore. Per usare le parole del titolo della mia tesi, hanno *popolarizzato* termini e nozioni appartenenti a sfere prettamente scientifiche ed hanno istaurato un *legame* tra tali sfere e le menti, le coscienze ed i cuori dei cittadini.

Tra le possibili limitazioni di questo studio dei testi, si sottolinea, innanzitutto, che il corpus analizzato non era di elevate dimensioni; questo ha permesso uno studio più accurato e dettagliato, ma ha allo stesso tempo limitato risultati e successive riflessioni. Inoltre, i dati forniti dai diversi software erano senza dubbi validi ed affidabili, ma talvolta mancavano dati ed erano di dubbia interpretazione. Infine, come già accennato, il senso critico personale ha giocato un ruolo importante sia nella fase di analisi testuale che visiva.

Proporrò ora le riflessioni nate dal mio lavoro sul Terminology Wiki. Pur consapevole che il mio contributo al progetto sia stato significativo qualitativamente, comprendo che un mese di lavoro non sia stato sufficiente ad apportare un contributo elevato anche a livello quantitativo. Infatti, ho lavorato al completamento di meno della metà delle pagine wiki.

Ad ogni modo, l'esempio fornito al lettore ha permesso di mettere in evidenza un aspetto molto interessante, che si ricollega, in parte, all'analisi dei testi presentata nei paragrafi precedenti: la terminologia è un cammino ricco di insidie. Infatti, uno studio di terminologia risulta essere meno oggettivo e diretto di quanto si possa comunemente pensare: ad essere coinvolto è, come già accennato, il giudizio personale ed individuale dello studioso. Questo perché la lingua, e la disciplina della terminologia in essa, è comunicazione, e la comunicazione è una componente essenziale dell'essere umani.

In conclusione, nella consapevolezza della necessità e nell'auspicio di future ricerche e miglioramenti, questa breve ma intensa esperienza nel mondo della gestione delle emergenze, della comunicazione e della terminologia è da ritenersi produttiva, sia per me stessa e per la mia crescita personale ed educativa, sia come contributo valido

agli studi legati alla gestione delle emergenze. Questo lavoro potrebbe infatti fornire delle basi per studi futuri ed interessare e incentivare future studenti e lettori ad approcciarsi al mondo, complesso e stimolante, della comunicazione.