PART II

RESEARCH IN ESP AS POTENTIAL TEACHING RESOURCES

CHAPTER FOUR

RISK AND *THREAT* DURING THE COVID-19 PANDEMIC: A MICRO-DIACHRONIC PERSPECTIVE

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1. Introduction

The aim of this chapter is to explore the use of the words *risk* and *threat* in the Coronavirus Corpus.[1] The Covid-19 outbreak has had a significant impact on research, leading scholars and researchers to analyse the effects of the communication of the pandemic from many perspectives. For instance, the communication of risk during the pandemic has been analysed in the fields of medicine (Krause *et al*. 2020) and environmental engineering sectors (Oerther and Watson 2020), as well as the study of the efficiency and support of social media platforms (Abrams and Greenhawt 2020; Chesser *et al*. 2020; Husnayain *et al*. 2020). The use of metaphors to describe the pandemic, in particular, has been looked at both under the social and psychological lens (Sabucedo *et al*. 2020; Wagener 2020), as well as from a linguistic perspective. Critical Discourse Analysis has focussed on the use and meaning of war metaphors by government leaders (Castro Seixas 2021), while Taylor and Kidgell (2021) have carried out a diachronic corpus driven study on the use of the metaphors in flu-like pandemics across time. Semino, on the other hand, has investigated different metaphors adopted in the communication of the pandemic, drawing particular attention to the Fire metaphor, emphasizing its purposes, such as that of conveying danger and urgency, the risk of contagion, the role of health workers, the connection with health inequalities, and so on (2021:

[1] https://www.english-corpora.org/corona/

54). In the same year, Wicke and Bolognesi (2021) looked at the construction of the WAR frame in Covid-19 tweets.

Through the exploration of a corpus of British and German newspaper articles during the pandemic, Müller *et al*. (2021) have mapped different markers of uncertainty, including words like *risk*, *danger* and *threat* as expressions of situational uncertainty linked to the notion of danger. However, to our knowledge, a specific study on these lexical items in the context of the pandemic is still lacking. We therefore will explore in this chapter the use and the phraseological profile of *risk* and *threat* in the media representation of the pandemic. In order to do so, we will open this chapter with a review of the existing literature on sociological and linguistic approaches that have been adopted to explore contexts of risk and threat in recent years. We will then describe materials and methods that have been selected for our research, which will be followed by a discussion of the results.

2. Literature review on *risk* and *threat*

The recent Covid-19 pandemic outbreak and the rapid spread of the virus have led to a change in people's habits all over the world. Safety regulations frequently appear on means of transport and in diverse public spaces (public toilets, post-office, supermarkets, etc.) reminding people to wear protective face masks, to frequently wash and sanitize their hands, and to keep social distance whenever possible. Governments, on the other hand, are trying to manage the crisis, while implementing safety regulations and investing in research to tackle the virus. On March 19, 2020, the World Health Organization (WHO) published guidelines and a practical checklist for risk communication and community engagement (RCCE) for countries preparing for the pandemic outbreak and for those with confirmed cases.[2]

The notion of risk is not new. Since the 1990s sociologists have shown increasing awareness of the importance of risk. In particular, in the early nineties, Ulrich Beck first defined the society that we live in as a "risk society", a concept which was later theorized by Giddens as:

[2] Risk communication and community engagement readiness and response to coronavirus disease (COVID-19). Interim guidance 19 March 2020, World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/331513/WHO-2019-nCoV-RCCE-2020.2-eng.pdf.

> […] a society where we increasingly live on a high technological frontier which absolutely no one completely understands and which generates a diversity of possible futures. (Giddens 1998: 24)

Giddens claims that a risk society is a consequence of the rise in individualism and of the triumph of human beings over nature, both of which have led to a society that is constantly worried about its future and safety.

Risk is communicated differently according to the audiences and purposes which triggered the urge to define risk so as to fill any gaps between the communication of risk, its definition, and its appraisal (Horlick-Jones 2005). Consequentially, studies have been carried out on the discursive reproduction, and negotiation of risk and safety measures in the workplace (Rasmussen 2013), as well as on the communication of risk and its association with both hazards and positive projections, such as opportunities (Candlin *et al*. 2016). Risk has also been explored in sociology in terms of negative and positive connotations (Lupton 1999; Giddens 1998), with the former linked to the "chance of avoiding an unwanted outcome", while the latter is associated with "taking initiatives in the face of a problematic future" (Giddens 1998: 27). Broadly speaking, risk is associated with communicative issues of power, categorization, distribution, regulation, negotiation, and mediation (Candlin *et al*. 2016: 5).

In 2016, Boholm defines risk discourse in terms of a process of risk association, where the latter is a "cognitive process whereby some agent, or group, establishes a connection between something, x, and the notion of risk" (2016: 2). Boholm argues that risk associations are established by linguistic practices, which is why he develops a "layered model of risk association", revolving around the word *risk* (2016: 4). Starting from the notion of risk association he develops the "onion model", which is a framework to methodologically analyse the construction of risk in discourse (Boholm 2016: 8). His framework stretches out across four layers: the core and central layer includes the noun *risk* and its compounds, the first layer includes the morpheme *risk* and its derived words (e.g., verb *risk* and adjective *risky*), the second gathers close synonyms of *risk* (e.g., *danger*, *hazard* and *peril*) and their derived forms (e.g., *dangerous*), the third collects *risk*'s antonyms (e.g., *safety* and *security*) with their derived forms and backformations (e.g., *safe*), while the fourth layer comprises other related words.

To the extent of our knowledge, the first semantic analysis of the word *risk* was carried out in 1992 by Fillmore and Atkins, who analysed both its noun and verb forms, and created a cognitive frame, with a focus on both

paradigmatic and syntagmatic relationships concerning a number of selected items. According to Fillmore and Atkins, each lexical item or idiomized phrase carries a "valence description", which specifies both semantics and syntax, in other words, both grammar and meaning (1992: 78). Within the "risk frame", *risk* is considered as a polysemous word, taking into account both its positive meaning of chance and its negative one related to harm. To carry out their analysis, they explored the word *risk* in a 250,000,000-word corpus provided by IBM, Hawthorn, to the American Publishing House for the Blind, and extrapolated 1770 examples. They then created different categories which were functional to the valence description of *risk*:

- Chance, which refers to the uncertainty of the future
- Harm, which is potentially unwelcome behaviour
- Victim, the individual that suffers if Harm occurs
- Valued Object, which is a valued possession of the victim seen as endangered
- Risky Situation, a state of affairs where someone is at risk
- Deed, the act that brings about a risky situation
- Actor, which is the person that performs the Deed (Fillmore and Atkins 1992: 81-83).

They also included subcategories for the description of the Actors' intentions, such as Intended Gain (the Actors' hope-for gain in taking risk), Purpose (what an actor intends in performing the Deed), Beneficiary (the person for whose benefit something is done), and Motivation (the psychological source for someone's behaviour) (Fillmore and Atkins 1992: 83-84).

Studies on meanings of *risk* have also been carried out with systematic and corpus-based approaches. For example, in 2007 Hamilton *et al.* explored *risk* as noun and verb in contemporary written and spoken British and American English using the 56 million-word *Collins WordbanksOnline* and the 5 million-word *Nottingham Corpus of Discourse in English* (CANCODE). Results have shown that *risk* is used more often in the context of health and illness than in that of finance. However, it is used almost as often in the context of interpersonal relations or other contexts as it is in those of health or illness (Hamilton *et al*. 2007: 169). The connection with the medical semantic field is confirmed by the analysis of *risk* collocates (Hamilton *et al*. 2007: 178).

Collocations, semantic associations, and semantic prosody of the noun *risk* have also been explored in the COCA corpus (Hardy and Colombini

2011). Outcomes from this analysis confirmed negative connotations of *risk* which are usually associated with medical discourse, mainly found in magazine and academic genres. However, when looking at collocations of *good risk*, and at the patterns of *risk worth taking* and *x be worth risk*, their results confirmed the item's mainly negative connotations and prosody (Hamilton *et al*. 2007: 482).

The semantics of *risk* has also been explored diachronically over the news coverage of the *New York Times* (Zinn and Mac Donald 2018, Zinn 2010), showing for example how the domain of health and illness has recently become central in risk discourse. Moreover, quantitative and semantic changes of the concept of 'risk' have also been diachronically explored in the parliamentary discourse of the German Federal Republic from 1949 to 2017, tracing the emergence of new lexical paradigms (Müller and Mell 2021).

However, while the concept of risk and its word forms have been widely explored in research, studies on *threat* seem to be lacking. The construction of the discourse of fear and threat, its linguistic realizations (Ströbel 2015), its link with persuasion (Dillard and Anderson 2004) and its (re)shaping social structures and power relations have been widely explored in the fields of public discourse, politics, and psychology (Shirlow and Pain 2003; Cap 2017; Kopytowska and Chilton 2018). More recently, in the field of psychology, Anderson *et al.* (2021) have developed a Multifaceted Threat Scale to explore initial psychometric properties for COVID-19, looking at concerns, worries, and fears of participants during the pandemic from both a quantitative and qualitative point of view. Nevertheless, the noun *threat* is yet to be explored, though Wicke and Bolognesi (2021), when studying the conceptualization of the pandemic on Twitter, did include the word *threat* in the building of their WAR frame. Moreover, when searching on Google Scholar for papers on this topic, we found a high number of studies on Covid-19 that included the word *threat* in their title, but none of them were linguistic or sociologic.

While a small but significant number of studies have looked at the semantics of risk and related concepts, such as causality (Boholm 2009) or security and safety (Boholm *et al*. 2016), others have focused on the close link between *risk*, *threat* and *danger* (Boholm 2012; Battistelli and Galantino 2019) and their role within expressions of uncertainty (Müller *et al*. 2021). Starting from Luhmann's (1993) distinction between the attribution of negative outcomes to a decision (as with *risk*) or to external circumstances (as with *danger*), Battistelli and Galantino also provide tools for distinguishing between *risk* and *threat*, in terms of positive or negative intentionality respectively, where risk combines the possibility of

negative outcomes with an intention that can still be positive, whereas, with *threat* the implication is that the harm is produced by ill-intentioned actors. This points to an interesting correlation between *risk* and *threat* that is yet to be explored with reference to the pandemic.

3. Materials and methods

In order to carry out our analysis, we took into account data from the 1.82 billion word Coronavirus Corpus which is updated daily with 3-5 million words of data, and which is part of the range of corpora available on English.corpora.org. The Coronavirus Corpus contains online and magazine texts from 20 English-speaking countries, 44% of which are from the USA, Great Britain, India, and Canada, whereas the rest is from the remaining 11 countries (Davies 2021: 589). The texts concern issues on the Covid-19 impact on the areas of health, education, society, and economics.

Our research followed both a quantitative and qualitative approach, for which we divided our work into two phases. The first step aimed at quantitatively exploring the use of *risk* and *threat* during 2020 and 2021, so as to have a general overview of the trends over the years. In order to do so, we adopted the Chart function available in the Coronavirus Corpus and looked at both relative and raw frequencies of all *risk* and *threat* word forms; we then selected the part of speech we were interested in, namely RISK_n and THREAT_n, and the limited time-period, namely 2020 and 2021. The general diachronic trend of each noun was carried out singularly through the software tool, then data was inputted into Excel, where it was possible to compare data and visualize it through the use of graphs. This provided us with a first general overview of interest, showing similarities and differences in terms of trends and occurrences for each month for both years.

After a general overview of the above trends, in step two we decided to take a closer look at the year 2021 through a concordance analysis of our node words. The choice of concentrating our qualitative analysis on 2021 was mainly due to our interest in the use of *risk* and *threat* after the first outburst of the virus, hence taking some distance from its first associations with the city of Wuhan, where the first infections of Coronavirus were found in February 2020. Moreover, we thought it would be interesting to analyse the development and use of such nodes after the introduction of the vaccines. In particular, we took into account February 2021, which coincides with one exact year after the pandemic outburst, and the end of the year, December 2021, which allowed us to obtain a general picture of

the trend for 2021. In this qualitative stage of our analysis, we first generated 200 random concordances for both *risk* and *threat* in the selected months, then we chose only those that specifically referred to Covid-19 issues. Finally, we diachronically explored collocations and semantic preferences (Sinclair 2004) of *risk* and *threat* during these selected months in order to get a clear picture of the semantic preferences of our words of interest in the pandemic context. Moreover, for each of our nouns we also looked at the lexical-grammatical patterns and local grammar (Hunston and Su 2019) of our nodes of interest. In particular, we labelled the lexical-grammatical functions of the recurrent patterns of *risk* and *threat* according to the Fillmore and Atkins *risk* cognitive framework (1992) as we believed it could easily fit into the way *threat* discourse is built.

In the next section we provide a general quantitative overview of *risk* and *threat*, followed by two sections in which we look at the development of each word, starting with an analysis of the collocation and semantic preference of such nouns for each month, and concluding with their lexical-semantic patterns.

4. Results and discussions

4.1 General overview of *risk* and *threat*

In this section we will explore the general diachronic change of the nouns *risk* and *threat* in 2020 and 2021. Table 4.1 shows the diachronic trend of *risk* and *threat* for each month of 2020 and 2021, giving information on both the raw and relative frequency of each word. It also provides information on the total number of tokens in the texts that include our words in each month, alias the effective size of total number of texts for each section (=month).

Looking at Table 4.1 in more detail, we can see that *risk* reaches a peak in the number of raw frequencies in May 2020 (52,882) and then oscillates between circa 20,323 and 49,482 in the following years. The trend is quite different for *threat*, which shows its highest peak in April 2020 (22,446) and then decreases from September 2020 to December 2021 oscillating between 7,973 (September 2020) and 4,817 (October 2021). However, in the third column of each sample, the results for the same node words slightly change when taking into account their relative frequency per one million words.

Data / Months	***risk_n***			***threat_n***		
	Raw frequency	Total tokens (mil.)	Relative frequency (per mil.)	Raw frequency	Total tokens (mil.)	Relative frequency (per mil.)
Jan. 2020	4,745	7.3	646.44	1,672	7.3	227.79
Feb. 2020	10,643	14.5	734.28	3,880	14.5	267.69
March 2020	47,660	100.0	476.65	22,433	100.0	224.35
April 2020	50,884	108.0	471.26	22,446	108.0	207.88
May 2020	52,822	97.8	540.03	17,918	97.8	183.19
June 2020	49,482	83.3	594.20	12,491	83.3	150.00
July 2020	43,785	78.4	558.39	10,300	78.4	131.35
Aug. 2020	41,782	74.2	563.39	9,269	74.2	124.98
Sept. 2020	32,034	57.6	556.04	7,973	57.6	138.39
Oct. 2020	35,577	57.1	622.68	7,366	57.1	128.92
Nov. 2020	27,322	49.3	554.38	6,203	49.3	125.86
Dec. 2020	25,286	50.8	448.41	6,218	50.8	121.66
Jan. 2021	28,738	50.6	568.07	7,895	50.6	156.06
Feb. 2021	25,817	45.2	571.28	5,537	45.2	122.52
March 2021	33,547	58.3	575.55	7,571	58.3	129.89
April 2021	31,966	51.3	623.10	6,063	51.3	118.18
May 2021	24,559	49.1	499.99	6,031	49.1	122.78
June 2021	20,514	40.0	512.35	5,312	40.0	132.67
July 2021	22,393	38.7	578.03	5,351	38.7	138.12
Aug. 2021	23,776	41.8	568.51	5,792	41.8	138.49
Sept. 2021	20,323	37.4	543.16	5,392	37.4	144.11
Oct. 2021	21,525	33.8	636.11	4,817	33.8	142.35
Nov. 2021	20,981	33.9	619.52	4,654	33.9	137.42
Dec. 2021	24,192	42.2	573.72	7,347	42.2	174.24

Table 4. 1 Comparison of hits, tokens, and relative frequency of *risk* and *threat* in the Coronavirus Corpus, 2020-2021.

This change is also visible in Figure 4.1, which mirrors Table 4.1's relative frequency of *risk* and *threat*.

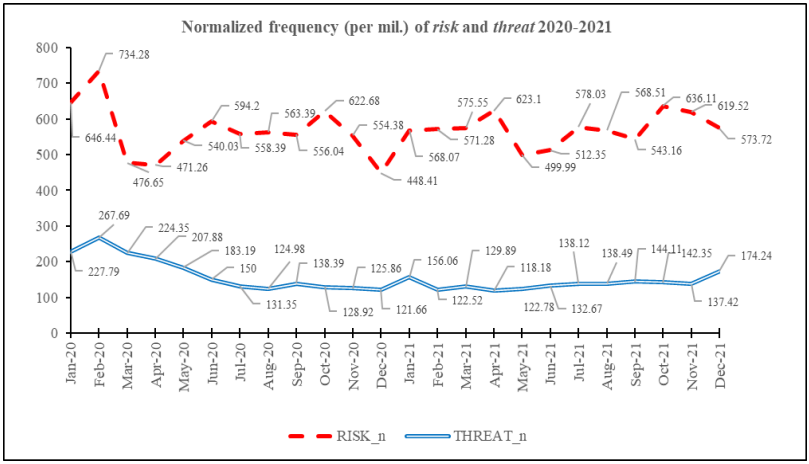

Figure 4. 1 Comparison of the diachronic trend of *risk* and threat in 2020 and 2021.

The graph in Figure 4.1 shows how the word *risk* is used up to four times more than the word *threat*, which may mean that the press and articles focus more on communicating consequences related to the virus rather than metaphorically depicting it as a menace for society. Moreover, the relative frequency of our node words shows a more objective perspective of this trend compared to the previous analysis of the raw frequencies. In fact, the graph shows that the use of *risk* reaches a peak in February 2020, probably due to the first Covid-19 outburst. In March 2020, *risk* drops by almost 26% and then regularly oscillates between 471.26 and 636.11 hits in the following months of 2020 and 2021.

Similarly to *risk*, *threat* reaches a peak in use in February 2020 with a frequency of 267.69 cases per 1 million words, at the time of the Covid-19 outburst. Then, it slowly decreases until August 2020 (124.98) and then slightly fluctuates between 118.8 and 174.24 (December 2021), with the exception of January 2021 where it reaches another minor peak (156.06).

The graph also shows that the relative frequency of *threat* is more stable than of *risk.* Apart from the opening peak in February 2020, there is no correspondence between the peaks and troughs of the two words.

4.2 The study of *risk*

4.2.1 February 2021

With a first general overview on the use of *risk* in February 2021, we observe that out of 223 random concordances of our node word, almost 60% (132 hits) deals with risk in relation to the pandemic. The remaining 40% (91 hits) is divided between the sphere of business (61 hits) and other cases (30 hits) such as nature, climate change, and other medical diseases.

Of the 132 concordances that deal with risk in relation to the pandemic, most (92 hits) belong to the prepositional group of *at risk*, *at risk of*, and *at risk for*. A closer look reveals that when the preposition *at* precedes a noun, this is usually identified with the "Victim" (Fillmore and Atkins 1992) of risk, alias the individual that suffers when harm occurs. More specifically, in this case, when *risk* is modified by adjectives such as *extreme, great/greater, high/higher,* the Victim seems to be strongly linked to specific categories of people and members of community (i.e., *children and adolescents, people living with Alzheimer, the elderly*, etc.) who are considered fragile and *at higher risk/at great risk* of contracting the virus or of hospitalization (1) and (2). On the other hand, prepositions *for* and *of* are followed by what Fillmore and Atkins (1992) call a "Risky Situation" that coincides with consequences and contexts linked to the general spread and contagion of the virus (*transmission, contracting COVID-19, dying, exposure,* etc.).

(1) […] numerous people with dementia could be *at higher risk for* COVID19.

(2) […] people aged 65, who are *at much higher risk for* hospitalization and death due to COVID19.

Moreover, results show a limited number of cases (8 hits) in which *risk* collocates with lexical elements that indicate the containment of the spread of the virus, such as the verbs *reduce* and *minimise/minimize*. Here the stress is put upon the safety precautions adopted against the spread of the virus, which can be both physical barriers (3) and medical solutions, such as vaccines (4). Reassurance of the reduction of risk is also implemented by statistical data and percentages which enhance the credibility of the statement (4).

(3) […] implemented thorough safety measures designed to reduce the *risk of* COVID-19 for both our staff and customers.

(4) […] Pfizer and AstraZeneca vaccines were found to reduce *the risk of* hospitalisation by up to 85% and 94% respectively.

This is in contrast with *RISK*'s collocations with *increas** which appear only 6 times and mainly in relation to the consequences of Covid-19 (5).

(5) […] of dying from the virus, as well as *increasing the risk* of many life-limiting serious diseases including heart.

4.2.2 December 2021

In December 2021, 80% (180 hits) of the selected random concordances of *risk* deals with the issue of Coronavirus. The percentage has increased from February, since the economy had gradually got back to some kind of normality, whereas the risks related to the illness (or the vaccination) continued to dominate the news.

In 20% of the cases analyzed in our concordances (44 hits), *risk* collocates with verbs and modifiers that indicate the containment of the spread of the virus (*low/lower*, *minimize* and *reduce*). Again, similarly to earlier in 2021, what helps the containment of the virus are either physical barriers, such as masks (6) or the support of science and medicine (7).

(6) […] they can continue to wear a mask for 5 days to *minimize the risk* of infecting others.

(7) […]14 days after the second dose you have a 70% *lower risk* of admission to hospital should you contract Covid-19.

However, in a small number of cases collocates that were categorized as containment of risk hold a negative connotation as they are associated with the potential inefficacy of the vaccines in relation to what was then the new Omicron variant (8).

(8) [...] significant number of mutations it carries poses a potential *risk of reducing* some of the effectiveness the current vaccines.

The rise in the number of collocates regarding the reduction and containment of the risk of contagion mirrors the intensification in the number of collocations regarding the increase of risk. In fact, there are 43 hits of *risk* collocating with lexical items related to the urgency of the spread of the virus (*high/higher*, *great/greater* and *increasing/increased*). While in February high risk was mainly associated with vulnerable

members of community, in December the context varies slightly, with 5 cases of countries and travel (9), 21 cases of people at risk because of specific health conditions or diseases or because of being unvaccinated (10) and (11), and 9 hits of other circumstances that put people at risk, such as the mental health consequences due to the Covid-19 safety measure of smart working (12).

(9) [...] the past about one week, including 5,249 from 11 *high risk countries*, six were found to be infected with the Delta plus [...].

(10) [...] We know that long-term care residents face an *increased risk* of COVID-19

(11) [...] underlying medical condition, or live with someone who is *high risk* or unvaccinated.

(12) [...] There is also an *increased risk of* burnout for fully remote employees who work longer hours

Moreover, *risk* also collocates with *reinfection/re-infection* (13) and (14), which appears 7 times in contrast with 0 hits in the February corpus. This is associated with the recent Covid-19 variant, Omicron, which was identified for the first time at the end of November 2021.[3] Besides this specific case, Omicron is mentioned another 13 times in relation to its high risk of contagion and, in some cases, lower chance of hospitalization.

(13) But preliminary evidence suggests there may be an increased *risk of reinfection* with Omicron [...].

(14) Omicron appears to have a higher *risk of re-infection* than other virus classes as well as easily.

With regards to some general considerations on the lexical-grammatical structure of *risk*, there is no significant diachronic change over 2021, which is why observations will be considered together. The first and most common structure is where *risk* is preceded by verbs realizing a relational process, such as *to constitute*, *to pose*, and *to be*:

ACTOR *constitut*/pos*/be* a *RISK* (for/to VICTIM)

[3] https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern

The Actor is what is or can constitute a risk for the Victim, which may not always be present. There is no consistency in what the Actor and the Victim are associated with, even if the former is more likely to coincide with the virus and/or its variants (15), and with contexts related to the pandemic (16-17), whereas the latter can coincide with people/society/countries, public institutions, facilities.

(15) Omicron seems to be an *increasing risk* worldwide [...].

(16) Keeping schools closed *poses a major risk* to kids' health and wellbeing [...].

(17) [...] given that refusing a vaccine *can constitute a risk* for others.

Overall, while the general normalized frequency of *risk* has remained quite stable since February 2021 (Table 4.1), the number of concordances dealing with Coronavirus-related issues increased in December 2021. This reflects an intense interest in the discourse of the media for the notion of risk in relation to the new wave of the Omicron variant. The collocation analysis has shown no significant change between the two months, except perhaps for a wider set of contextual factors that may be related to risk, including greater attention to vaccines and consequences of Covid-19. The choice of the word *risk* also proves to be rather constant in terms of lexico-grammatical patterns, typically constructing the virus as Actor and people as Victims.

4.3 The study of *threat*

4.3.1 February 2021

Regarding the use of *threat* in February 2021, out of the 195 random concordances 94 are linked to the pandemic, whereas the remaining 101 concordances are divided between the spheres of politics, elections, wars and, to a lesser extent, economics. A closer examination of the collocations, that we will refer to from now on as "the pandemic threat", showed that in 15 cases *threat* is preceded and defined by the virus/its variant. More specifically, in 5 cases *Coronavirus/Covid-19* comes before the noun *threat*, whereas in the remaining 10 cases, the specification of the nature of the menace appears in *threat of Coronavirus/Covid*-19. Therefore, it seems that by associating *threat* with something specific, there is a precise enemy to fight against.

Moreover, the pandemic threat is emphasized by the use of modifiers that give our node of interest new and specific acceptations. Table 4.2 shows the different semantic categories in which modifiers of *threat* have been classified followed by the number of hits in brackets.

Dimension		**Hazard type**		**Probability**		**Urgency**	
biggest	(2)	*biological*	(1)	*potential*	(1)	*current*	(1)
global	(2)	*deadly*	(1)	*real*	(4)	*escalating*	(1)
grave	(1)	*disease*	(1)			*historic*	(1)
greater	(1)	*existential*	(1)			*immediate*	(1)
major	(2)	*health*	(1)			*imminent*	(1)
significant	(1)	*lethal*	(1)			*increasing*	(1)
transnational	(2)	*safety*	(1)				
		security	(2)				
		serious	(2)				

Table 4.2 Semantic categories of the modifiers of threat - February 2021.

Within the category of 'dimension' we have grouped adjectives that highlight the high level of contagion of the pandemic threat both at a quantitative (*biggest, grave, greater,* etc.) and a geographical level (*global, transnational*) (18) and (19).

(18) But the coronavirus has proven to be *the biggest threat*.

(19) COVID-19, caused by the SARS-CoV-2 virus, is a *global threat* and there is an urgent need to assess new treatments to prevent.

The semantic category of 'hazard type' groups together modifiers related to the physical consequences of Covid-19 both from a clinical and medical perspective (20 - 21), whereas the semantic category of 'probability' gathers modifiers related to the degree of certainty and seriousness of the Covid-19 consequences (22).

(20) This virus is a *lethal threat* to us all and as we respond through this huge endeavour [...].

(21) A security approach would stress the *health threat* to individual countries from new variants potentially [...].

(22) [...] are still in lockdown and the virus is still a *real threat* to communities across the West Midlands.

The semantic dimension of 'urgency', instead, groups adjectives related both to time and to the contingency of the threat, as well as its exponential increase and high level of contagion (23 - 24).

(23) [...] Redfield, where we received a harrowing warning of the *imminent threat* of a novel coronavirus that was about to reach our shores.

(24) "[...] tool we have had in the ongoing fight against this *historic threat*" said Mark Parkinson, the president and CEO of AHCA/NCAL.

Moreover, such modifiers are embedded in the lexical-semantic structure of *threat* which can be schematized as follows:

ACTOR pose*/constitute*/be/remain* a *threat* (to VICTIM)

In most cases, *threat* is preceded by verbs expressing a relational process attributing the notion of threat to the subject (*to be, to constitute, to remain, to pose*); the verbs are typically introduced by the ACTOR and *threat* is followed by the VICTIM. The former usually coincides with something that represents a menace and, in this case, with the virus (e.g., *Coronavirus, chronic disease, disease*), while the latter, when present, represents the party to which the ACTOR poses a threat and usually corresponds to both individuals and society as a whole (i.e., *communities, urban communities, public health*) (25-26).

(25) Hinshaw said COVID-19 still *poses a serious threat* and people's choices still matter.

(26) The COVID-19 pandemic *is a major threat* to public health.

Additionally, we also observed a small number of cases (6/94, i.e. just above 6%) in which the lexical-semantic structure of *threat* is preceded by verbs related to the semantic field of 'war':

ACTOR Decrease*/play* down/eliminate*/handle*/ remain* vigilant to the *threat* (of RISKY SITUATION)

In this case, the ACTOR coincides with people/professionals/politicians (*we, professionals, the US, Trump*) that take an active position against a specific enemy, represented by the semantic preference *threat of* which is usually followed by elements related to the pandemic (*of new variants, the virus, Covid-19*). In (27) and (28) the use of an *inclusive we* emphasizes

the fact that society is fighting against the same enemy, namely Coronavirus.

(27) [...] but *we* must remain vigilant to the threat of the virus.

(28) [...] of our medical professionals will *we* be able to eliminate the threat posed by COVID-19.

4.3.2 December 2021

In December 2021, more than half of the total amount of 193 hits regard the pandemic threat (103), whereas the other 90 cases are linked to the areas of politics, elections and war. Not only has the general relative frequency of *threat* increased since February 2021 (Table 4.1), but also the incidence of its referring to the Coronavirus. A closer look at the pandemic threat reveals that *threat* is no longer associated with the general virus of Covid-19, but it is directly linked to the latest Coronavirus variant, namely Omicron. In point of fact, there are 22 hits divided between the prepositional group *threat of Omicron/new variant* and the nominal construction *Omicron/new variant threat*, against 2 hits of the general *Coronavirus/Covid-19 threat*.

Again, as for February 2021, there is a small number of modifiers that intensify the meaning of the pandemic threat. Although the categories of 'dimension', 'hazard type', and 'probability' are similar to those of February, 'urgency' is specifically related to the contingency of the Omicron variant and to its high level of contagion (29). Moreover, the category of 'novelty' has been added: this includes modifiers used to describe what at the time were still unknown risks and consequences related to the Omicron variant (30).

Dimension		**Hazard type**		**Novelty**		**Probability**		**Urgency**	
biggest	(1)	*health*	(1)	*emerging*	(2)	*real*	(1)	*actual*	(1)
grave	(1)	*viral*	(1)	*new*	(5)	*uncertain*	(1)	*fast-spreading*	(1)
major	(1)							*growing*	(1)
nationwide	(1)							*immediate*	(1)
serious	(1)							*imminent*	(1)
significant	(2)							*looming*	(1)
								urgent	(1)

Table 4. 3 Semantic categories of the modifiers of *threat* - December 2021.

(29) [...] Newsom outlined the state's response to the "*growing threat* of the omicron variant".

(30) However, acknowledged that the Omicron variant poses a *new threat* to the country [...].

With regard to the lexical-semantic constructions of *threat* in December 2021, the dominant construction is still the use of relational verbs attributing the notion of threat to the subject (*to be, to pose, to present, represent*) accounting for a total of 38 (38/103, i.e. roughly 37%) cases. The structure can be summarized as follows:

ACTOR pose*/present*/represent* a (modifier) *threat* (to VICTIM)

In this case, the ACTOR mostly identifies with virus and/or its variant, whereas the VICTIM, when present, can coincide with members of society, institutions, or countries (32).

(31) Glynn said that the growth of Omicron represents a *significant threat* to people's ability to safely enjoy the Christmas and New Year

The most interesting verbs that relate to *threat*, however, are those expressing a material process connected to the semantic field of action (and metaphorically to battle and war), such as *face, reduce, minimize, tackle, mitigate*). These have increased since February, with a total of 22 cases (22/103, i.e. over 20% of the cases) presenting a lexical-semantic structure that typically identifies humans as Actors facing the threat:

ACTOR face*/tackle*/reduce*/minimize* a/the *threat* of omicron/coronavirus

In particular, such verbs convey the idea that the ACTOR - role attributed to people - is fighting against an invisible, but real enemy (i.e. Omicron variant, Covid-19) with the support of safety and pharmaceutical measures (i.e. boosters, vaccines, etc.).

These elements are also reinforced by the use of nominal constructions such as *in face of /in the face of, the threat of…, under threat from…, and in response to,* which again convey the idea of an actual battle against the Omicron variant (32 and 33). In particular, the nominal construction *under threat* reminds us of *under attack*, leaving the ACTOR (*humanity* in example 32) with the only choice of protecting oneself against the imminent menace of the new variant. Other expressions (33), instead, give

a more prominent and reactive role to the ACTOR, leaving more space to a strategic plan of attack against the virus.

(32) [...] new variant Omicron has shown, humanity continues to be *under threat* from new variants until better immunity is achieved.

(33) [...] that he had already put in place a package of "balanced and proportionate measures" *in response to* the threat posed by the new variant as cases of Omicron reached 22 [...].

Overall, while the general normalized frequency of *threat* has increased remarkably since February 2021 (Table 4. 1), the number of concordances dealing with Coronavirus-related issues has only had a slight increase. The analysis of its collocations has shown a loss of interest in the types of threats posed by Covid-19 together with greater emphasis on the novelty of the new wave and the Omicron variant. In terms of lexico-grammatical patterns, on the other hand, greater emphasis is placed on constructions that see humans as Actors fighting the threat of the virus.

5. Conclusions

Our analysis has provided a small diachronic case study on the use of *risk* and *threat* in the Coronavirus Corpus with a focus on the pandemic in 2021. A first quantitative analysis has shown that *risk* was not only used more frequently than *threat*, but it also showed a quite irregular trend over the years of the pandemic. A closer look at the qualitative development of the uses of *risk* and *threat* in 2021 revealed similarities and differences between the two nouns.

On the one hand, in February 2021, *risk* mostly appears in the prepositional group *at risk for/of*, preceded by what Fillmore and Atkins (1992) define as VICTIM, which in this case coincides with fragile members of society, and followed by a RISKY SITUATION, corresponding to Covid-19 consequences. Moreover, modifiers preceding *risk* are mostly used as intensifiers to emphasize the strong possibility of contagion. During the same month, on the other hand, results show more variety among the semantic dimensions of *threat*'s modifiers, namely those of dimension, hazard type, probability, and urgency.

Furthermore, by applying Fillmore and Atkins' cognitive "risk frame" (1992: 78) to *threat*, we noticed that, in this case, there are two clear lexical-semantic structures with a dual valence description of ACTOR either posing a *threat* to the VICTIM, or actively taking action against a

threat of a RISKY SITUATION. In the first case, the ACTOR coincides with something that represents a menace to the VICTIM, such as Covid-19, chronic diseases, while in the second case it corresponds to individuals, members of society and institutions that fight against the threat posed by the virus. The first pattern is much more frequent than the second.

Regarding the use of *risk* in December, collocates dealing with the containment of the virus (*minimize*, *reduce*) had increased since February, most probably showing an awareness in media discourse that physical barriers (i.e., social distancing, masks, etc.), medical research and the vaccination campaign (where carried out) had contributed to the reduction of the spread of the virus. However, despite this increase, modifiers preceding *risk* remained qualitatively stable conveying both a sense of urgency and of high probability of contagion. However, this sense of urgency together with the new collocation *risk of reinfection/re-infection*, which was absent in February, are due to the discovery that there is in fact a possibility of re-infection for this virus and to initial uncertainty about the latest Covid-19 variant, namely Omicron. Similarly, during the same month, *threat*'s modifiers also remained qualitatively similar to those in February, but with the addition of a new semantic category, namely that of novelty. This is again related to the latest Omicron variant, which represents a new and unknown menace to society by being extremely contagious.

December also marks an overall increase in the frequency of *threat*, while *risk* remains stable. The overall change obviously reflects media interest in what is new: the decreasing focus on the overall types of risks is in line with the fact that these have already widely studied by scientists and discussed in the media, while the emphasis on novelty coincides with an increasing interest in the new variant.

Changes in the lexical-semantic structures have also proved to be relevant. With regard to *risk*, in December there are a few occurrences of the ACTOR constituting a *risk to/for* the VICTIM, with the former coinciding with Covid-19 and its variants, while the latter is associated with individuals and members of society. During the same month, the lexical-semantic patterns of *threat* are more multi-faceted than those of *risk*, with the ACTOR showing once more a double valence description. The role of the ACTOR can be taken up both by the virus and its variants, and by individuals that actively try to eradicate the threat posed by Covid-19. The increase in this double valence pattern allowing human actors a more prominent role is noticeable, and can be related to an increasing

awareness (in the second half of the year) of the means by which the problem can be faced.

To conclude, our study reveals that the use of *risk* and *threat* in the communication of Coronavirus issues has generally remained a constant element of media discourse over the time of the pandemic. It also shows that the two nouns do not only have a different semantics in terms of positive (*risk*) or negative (*threat*) intentionality, but they also present different co-textual features. The use of *threat* is generally more multifaceted than *risk*, not so much because of a wider range of modifiers, but due to more complex lexical-semantic structures variously highlighting different semantic roles in the interaction between people and the virus.

In particular, the analysis has highlighted the distinctive features of the two lexical items and the different ways in which they link – more or less explicitly - the virus as ACTOR/RISKY SITUATION and people as VICTIMS/ACTORS. While the nominalization of *risk* typically constructs a direct association and relationship between the virus as ACTOR and people as VICTIMS (i.e., the virus constituting a risk for people), the lexical-grammatical patterns of *threat* also include a different pattern where people as ACTORS face the threat of a RISKY SITUATION (i.e., people handling the threat of the virus). The ACTOR of *threat* can in fact coincide with both the virus – as for *risk* – and with individuals and members of society actively fighting against the menace of the imminent virus. The explicitly negative semantic elements evoked by a word like *threat* - and its clear association with negative intentionality in the harm being produced - find a counterweight in the more complex lexical-semantic patterns representing the relations between people and the virus, allowing constructions which see human actors actively limiting the harm.

These changes in the use of *risk* and *threat* in media discourse accompany the development of the pandemic in its second year. They represent how the media had to handle different elements over the second year of the pandemic: on the one hand, a constant focus on the development of the vaccination campaign and the need to study its efficacy and consequences, and on the other hand the need to deal with elements of novelty, such as the new variants of the virus - Delta earlier and Omicron towards the end of 2021. In a way the emphasis on *risk* may be more related to the development of perceptions of probability in the advancement of knowledge, whereas *threat* is more linked to the dominant metaphor of waging war to the virus. The media are equally interested in both, and use both *threat* and *risk* to represent not only the evolution of the pandemic, but also people's perceptions of it.

Of course, the war metaphors related to *threat* have only been briefly mentioned in this chapter and could be explored more thoroughly in future research in order to better understand and theorize the construction of a threat discourse during the pandemic. Similarly, the analysis could be extended to words like *danger* and *hazard* and to verbal representations of the same notions, so as to get a fuller picture of the language of risk. On the other hand, we hope to have shown how the combination of quantitative and qualitative data, ranging from collocation and semantic preference to an analysis of the semantic framing of clausal patterns can actually help interpret the mere quantitative data and explore subtler patterns of change.

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