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# Online Covid-19-related Information for Travelers

## A Corpus-based Study of Modality in Airport Websites

**Abstract**

*Due to the current pandemic situation, international airport hubs need to adopt special procedures and distancing technology solutions to protect the health of travelers and employees (Sigala 2020). This paper explores the language of the sections of international airports' websites specifically devoted to Covid-19-related issues and procedures, an emerging type of discourse dynamically reflecting the evolving situation. Like other types of specialized discourse, these informative and regulatory texts present "interdiscoursive" features (Bhatia 2010) borrowed from other genres, mainly legal English (Maci 2013). The paper presents the results of an investigation into the use of modality in a specially compiled 126,000-word corpus of texts concerning major British, North American, central European (Dutch and German) and Italian airports. The findings revealed differences among the four varieties, concerning the frequency and use of core modals, semi-modals, and some suasive verbs and their nominalizations identified through the analysis of keywords. The British websites feature the largest amount of core- and semi-modals, followed by the central European ones. The American texts score the third lowest number of core- and semi-modals and the highest number of suasive verbs/nominalizations, while the Italian sub-corpus presents the lowest values for all the categories, with the exception of the suasive verb* recommend, *which they employ extensively.* Must *is used the most in the central European texts, probably because of L1 interference, while* recommend *is at times erroneously used by the Italian writers. The paper discusses these and other findings and their implications for prospective writers of such texts.*

**Keywords:** *modality, the language of tourism, Covid-19, English lingua franca, varieties of English*

The Covid-19 pandemic has had a major impact on the tourism industry and on the related travel industry (Fernandes 2020; Gretzel et al. 2020). Due to its global scale and to the shutdown of a large number of economic activities, its consequences have been of a much higher magnitude than those of previous crises (Higgins-Desbiolles 2020, 611). This has been especially true for intercontinental tourism markets and, as a consequence, for major aviation hubs

enabling tourists to access their target destinations (Hall et al. 2020, 583). To protect the health of both travelers and employees, international airport hubs have had to adopt special self-care, hygiene and safety procedures, as well as innovative crowd and social distancing technology solutions (Sigala 2020, 317).

Unfortunately, pandemics and outbreaks are expected to become more common in the future, due to climate change and to "the interwoven nature and vicious circle forces between the biological, physical and socio-economic systems" (Sigala 2020, 313). New measures and procedures are, therefore, currently explored to reimagine and reset safe tourism practices. The Covid-19 pandemic can thus represent an opportunity for the tourism and travelling industry to strategically adapt to the evolving global situation (e.g. Gretzel et al. 2020; Sigala 2020). As Sigala (2020, 319) suggests:

> the new operating environment enforced by COVID-19 measures requires firms to adopt new technologies and applications to ensure management of crowds and number of people gathered in public spaces (e.g. airports, shopping malls, museums, restaurants, hotels), human disinfectors and hand sanitiser equipment, applications identifying and managing people's health identity and profiles.

In order to put such measures into practice in public spaces such as international airports, clear, accurate and thorough Covid-19-related information and travelling procedures in English are necessary. It goes without saying that these should (also) be provided in English, as English is "the language of international air traffic control, and is currently developing its role in international maritime policing and emergency services […] and the leading language of international tourism" (Crystal 2019, 112). In spite of the global role of English in such sectors, however, local differences in its use are to be expected due to the status of English as a first, second, or foreign language in different countries, the specific variety of English spoken and/or its use as a lingua franca.

This study sets out to explore the use of the English language in international travelling-information texts providing Covid-19-related information and detailing the special procedures to be followed within the airport premises and in the countries of arrival. It is based on a corpus of texts extracted from major US and UK airports and on a comparable corpus of texts from Italian and central European airport websites. On the one hand, the comparisons between the American and the British sub-corpora is motivated by the fact that these two native varieties notably differ in various respects, especially when it comes to institutional types of discourse, such as the language of politics, business, economics and law (e.g. Baker 2017; Trudgill and Hannah 2017). On the other hand, the investigation of the Italian and the central European

data aims to explore the influence that the US and the UK varieties might exert on them and the possible transfers into English from the source languages, cultures and institutions.

This paper attempts to gain insights into the informative and directive aspects of this globally evolving type of discourse, which, prompted by the emergence of the pandemic, is likely to stay with us for some time. Careful attention is devoted to modality, a linguistic phenomenon that plays an important role in various types of specialized discourse, including legislative discourse (e.g. Garzone 2013), the discourse of tourism (e.g. Maci 2013) and that of airport ground staff (e.g. Cutting 2012).

Relevant research on established and developing text types in the field of tourism is reviewed in Section 1, while the use of modality in English tourism discourse is introduced in Section 2. The corpus and the method of analysis are described in Section 3 and the results in Section 4.

## 1. Genres and text types in tourism discourse

Tourism has a language of its own (Dann 1996, 2), which some scholars have described as specialized discourse. Like all types of specialized discourse, the language of tourism tends to exhibit the same lexical, syntactic, pragmatic and semantic features of general language, yet it employs them more or less frequently than in general contexts (Gotti 2006, 19). Tourism texts can be authored by a variety of writers, including institutional boards, specialized and non-specialized publishing houses, academic or commercial institutions. Tourism discourse tends to be highly specialized when used by experts to communicate with one another (e.g. professional meetings), while it shows a tendency towards general language when experts interact with non-experts (e.g. tourist guides) (Gotti 2006, 20-21). A mutual dialogue among non-experts can also occur, thus giving rise to communication between tourists and/or would-be tourists (e.g. chats) (Francesconi 2014, 19).

Tourism texts take the form of a variety of genres, according to the communicative intentions of the interlocutors and the socio-professional contexts of their use. Notably, Calvi (2010, 22-23) classifies tourism genres into genre families as follows: editorial (e.g. travel guides, tourist magazines); institutional (e.g. official leaflets and brochures); commercial (e.g. travel agent websites, hotel brochures); organizational (e.g. tickets, bookings); legal (e.g. regulations, norms); scientific and academic (e.g. critical volumes, articles); and informal genre families (e.g. travel blogs, travel chats). Dann (1996; 2012) distinguishes tourism text types according to trip stage, and divides them into: pre-trip (e.g. brochures, consultation with tourists), on-trip (e.g. tourist guides, informational texts), and post-trip (e.g. postcards, tourists' accounts) texts.

New, innovative and hybrid types of tourism genres constantly emerge, due to a variety of reasons, such as the availability of new media and the changes in marketing strategies (Calvi 2010). Innovative practices in professional communication, including tourism discourse, can be viewed as the product of "intertextuality" and "interdiscoursivity," whereby textual as well as generic resources are appropriated across different genres, practices and/or cultures in and across professional contexts (Bhatia 2010, 37-38). Francesconi (2014, 29), for example, mentions Wikitravel,[1] which is a type of hybrid text that adapts the Wikipedia encyclopedia format and offers an "open digital travel guide, with the purpose of guiding prospective travelers in their destination choice." Maci (2013, 84-85) explores the language of another interdiscoursive genre: the series of normative guidelines known as European tourism recommendations. These texts have no real legal validity, in that each Member State applies them according to the specific legal system of the country. Nonetheless, they should be considered as juridical acts, adopting the "grammatical, rhetorical and discoursal generic conventions deriving from legal discourse" to the regulation of tourism practices in Europe (Maci 2013, 85).

To sum up, tourism texts have a tendency towards variability, innovation and hybridization, which complicates any attempt to ascribe them to specific tourism genres (Calvi 2010, 28).

## 2. Modality in English for tourism and travelling

Modality is a semantic category which is "centrally concerned with the speaker's attitude towards the factuality or actualization of the situation expressed by the rest of the clause" (Huddleston and Pullum 2002, 172-173). Palmer (2001) breaks down modality into "epistemic," "deontic" and "dynamic" modality. Epistemic modality is concerned with "the speaker's attitude to the truth-value or factual status of the proposition," deontic modality "relates to obligation or permission emanating from an external source," while dynamic modality "relates to the ability or willingness which comes from the individual concerned" (Palmer 2001, 9-10).

In English, modality is primarily expressed by core modal verbs, also known as core modals (e.g. *must, will, should*) and semi-modals (e.g. *have to, be able to, be bound to*). Core modals act as auxiliary verbs and express central modal meanings of possibility, necessity, permission, obligation, prediction and volition. Semi-modals are multi-word constructions which tend to behave like lexical verbs and express the same meanings of core modals (Biber et al. 1999, 483-486). Modality can also be conveyed through the so-called "lexical modals," a broad category

[1] wikitravel.org/en/Main_Page. Last visited 05/10/2021.

including adjectives (e.g. *possible, necessary*), adverbs (e.g. *perhaps, possibly*), lexical verbs (e.g. *hope, want*), and nouns (e.g. *possibility, necessity*) (Huddleston and Pullum 2002, 173).

The corpus-based analysis conducted by Biber et al. (1999, 487-488) revealed that in fiction and conversation modal verbs are more common in British than in American English, and that this is especially the case of *must* and *should*, marking obligation/necessity, and of *will, would* and *shall*, marking volition/prediction. In contrast, semi-modals tend to be more common in American English, especially *have to* and *be going to*, with the exception of (*have) got to* and *had better*. Leech et al. (2009, 71-90) found that the use of core modal verbs in corpora representing American and British edited written English declined between the early 1960s and the early 1990s, with a more extreme descending trend in American English. By contrast, in the same time span the use of semi-modals increased, yet they remained on the whole much less frequent than core modals. As regards *must*, "unlike *may* and *should*, [it] suffered a decline in both epistemic and deontic aspects of usage [… and] the deontic aspect remains dominant in both varieties" (Leech at al. 2009, 87-88). Baker (2017, 163) obtained similar results from the analysis of two other corpora representative of British and American English, namely a consistently lower frequency of modality in American English than in British English between 1931 and 2001 (Baker 2017, 163-164).

Maci (2013, 56) suggests that in promotional tourism discourse modality expresses ways of behaving and of promoting an action to be undertaken by the tourist rather than pure deontic or epistemic meanings. The most frequently used core modals are *can* and *will*. These tend to convey the idea of possibility and certainty, and are often used in combination with the pronoun *you* referred to the tourist. *Must* is also used in her data, but it often occurs as part of such nominalized expressions as a *must* and *a must-see* (Maci 2013, 56-57). By contrast, European tourism recommendations, another tourism text type this author explores, present a large number of expressions of deontic modality, used to give "precise indications in assigning right and obligations to people, companies and institutions" (Maci 2013, 109). These include the central modals *shall*, *should*, *must* and *would*, indicating obligation, and *can* and *may*, expressing permission. *Might*, *may*, *can* and *could* are used to signal epistemic possibility, with little if any difference in meaning between them, while *would* often conveys dynamic modality meanings in clauses expressing non-subjective willingness (Maci 2013, 109-116).

The core modals *can* and *will* proved to be the most frequent modal verbs in Manca's (2016) study of the official tourist websites of Great Britain and Australia. Her results indicate that *can* expresses the "high probability to see and enjoy something, [while] *will* conveys a strong sense of certainty particularly related to children and families who will certainly appreciate

what is offered to them" (Manca, 2016, 127; italics mine). The collocational profile of *can* in the two websites is similar. The subject of *can* is often *you*, the lexical verbs *see* and *enjoy* frequently co-occur with *can*, and words such as *trips*, *ride*, *find*, *stay* and *explore* follow it. By contrast, the profile of *can* is not shared by the two websites. In the British data, the most frequent subjects of *will* are *children*, *kids* and *family* and the lexical verbs that follow it are *love*, *be* and *keep*. In the Australian texts, *will* often occurs in clauses in which the pronoun *you* or the name of a specific tour/guide act as subject, it tends to pre-modify either the modal *need* or the lexical verb *take*, and to be followed by words such as *visa*, *permit* and *information* (Manca 2016, 125-129).

Castello (2002, 73) found that modality and imperative forms tend to be used with different frequencies in related genres of promotional tourism information texts. The tendency is for printed magazines to display the highest frequencies of modal verbs and the lowest of imperative forms, while printed tourism brochures follow the opposite trend. On the other hand, web pages and tourist guides score average values for both modality and the imperative mood.

According to Cutting (2012), modality represents a key linguistic resource also for airport ground staff, who have to speak English with international passengers. Dialogues between travelers and security guards, ground handlers and bus drivers tend to employ the core modal *will* extensively, with the aim of referring to regulations and of offering their help. On the other hand, catering staff and bus drivers mainly use *would*, *can* and *could* to make offers and requests. Security guards also happen to employ the semi-modal *have to*, in utterances such as "I'm afraid we have to do a body search, madam" and "[y]ou have to go through the check point first." In these cases *have to* implies that such professionals are not expressing their personal volition but a duty from an outside source, while the pronouns *we* and *you* generalize the regulation to all security staff and to all passengers, respectively (Cutting 2012, 8-12).

## 3. Corpus and method

Section 3.1 outlines the detailed composition of the corpus used for the present study, while Section 3.2 describes the software and method used to explore it.

### *3.1 The corpus*

The corpus specially compiled for this study consists of Covid-19-related information texts published on the websites of the busiest international airports in the UK, US, Italy and Central Europe, chosen according to the World Airport Codes Premium's 2018 ranking.[2]

[2] www.world-airport-codes.com. Last visited 05/10/2021.

The texts were collected from 1st May, 2021 to 11th May, 2021 and divided into four sub-corpora: the British sub-corpus (UK), the American sub-corpus (US), the Italian sub-corpus (IT), and the Central European one (CE). Each one of them contains information specifically devoted to two to four airports of the country/area, as well as information from official local and/or national online resources, to which the viewer is linked from at least two of the airport websites.

The UK sub-corpus contains texts extracted from the websites of Gatwick[3] and Heathrow[4] airports. It also comprises the content of webpages from the GOV.UK website,[5] which travellers are repeatedly directed to from the airport websites.

The US sub-corpus is made up of Covid-19-related web resources about Harfield-Jackson Atlanta International airport,[6] Los Angeles (LAX) airport,[7] and Chicago O'Hare and Midway airport.[8] Information from then national Centers for Disease Control and Prevention (CDC)'s website[9], to which viewers are directed from the airport websites, is also included.

The IT sub-corpus consists of texts from the English version of the Milano Malpensa[10] and Milano Bergamo[11] airports websites, the Rome airports website,[12] and Venice Marco Polo airport website.[13] It also contains some texts linked to them from the English version of the portal of the Italian Ministry of Health website[14] and the Italian Ministry of Foreign Affairs website.[15]

Finally, the CE sub-corpus comprises texts from the English versions of the Frankfurt Airport website,[16] the Shipol Airport website,[17] as well as informative pages from the German Federal Foreign Office website,[18] the Bundesministerium fur Gesundheit[19] and the Government of the Netherlands English webpage.[20]

[3] www.gatwickairport.com. Last visited 05/10/2021.
[4] www.heathrow.com. Last visited 05/10/2021.
[5] www.gov.uk/coronavirus. Last visited 05/10/2021.
[6] www.atl.com. Last visited 05/10/2021.
[7] www.flylax.com. Last visited 05/10/2021.
[8] www.flychicago.com. Last visited 05/10/2021.
[9] www.cdc.gov. Last visited 05/10/2021.
[10] www.milanomalpensa-airport.com. Last visited 05/10/2021.
[11] www.milanbergamoairport.it/en/. Last visited 05/10/2021.
[12] www.adr.it/web/aeroporti-di-roma-en-/pax-fco-fiumicino. Last visited 05/10/2021.
[13] www.veneziaairport.it/en. Last visited 05/10/2021.
[14] www.salute.gov.it. Last visited 05/10/2021.
[15] www.esteri.it. Last visited 05/10/2021.
[16] www.frankfurt-airport.com. Last visited 05/10/2021.
[17] www.schiphol.nl. Last visited 05/10/2021.
[18] www.auswaertiges-amt.de. Last visited 05/10/2021.
[19] www.zusammengegencorona.de. Last visited 05/10/2021.
[20] www.government.nl. Last visited 05/10/2021.

In order to obtain keywords for the IT and CE sub-corpora, the UK and the US data were brought together into a single component (UK+US) representing native English Covid-19-related information texts, as described in the following section.

### *3.2 Method*

The texts were downloaded, manually cleaned from unnecessary formatting code, and saved as plain text files. The sub-corpora were uploaded onto the corpus query system Sketch Engine,[21] which automatically lemmatized them and tagged them for part-of-speech (POS) (Kilgarriff et al. 2014). The platform provided frequency lists of word forms, word lemmas and POS tags.
Table 1 shows quantitative information about the number of word tokens, word types and lemma types for each sub-corpus obtained from Sketch Engine:

| Sub-corpora | UK | US | IT | CE | UK+US |
|---|---|---|---|---|---|
| Word tokens | 35,066 | 29,566 | 27,974 | 33,649 | 64,632 |
| Word types | 2,639 | 2,775 | 3,035 | 2,776 | 4,242 |
| Lemma types | 2,060 | 2,195 | 2,481 | 2,228 | 3,195 |

**Tab. 1:** Quantitative data about the sub-corpora

Sketch Engine was also used to generate keywords and keyword lemmas. Firstly, the UK sub-corpus was compared to the US one, with a view to obtaining information about possible differences between these two varieties of native English. By contrast, the IT and the CE sub-corpora were compared to the combination of the UK and the US sub-corpora, henceforth the UK+US component, so as to gain insight into what stands out in each non-native sub-corpus with respect to native English. The Sketch Engine keywords advanced tool was set with a focus on rather common words (i.e. 100,000), that is words that are frequent in general language and/or in the corpus they are compared to.
The word lists and the keywords were subsequently explored, with the aim of singling out the expressions of modality that stood out in a given sub-corpus/component with respect to the others. Using the Corpus Query Language (CQL) tool embedded in Sketch Engine, the frequencies of expressions of modality or words related to it were quantified and compared: i.e. core modal verbs, semi-modals and key expressions related to modality. These word forms and lemmas were studied in detail through the analysis of KeyWord-In-Context (KWIC)

[21] app.sketchengine.eu/. Last visited 05/10/2021.

concordances, patterns of collocation, and word clusters (e.g. Scott and Tribble 2006; Baker 2010).

The study explores the following research questions:

1. Are there differences between the sub-corpora with regard to the frequency and use of core modals, semi-modals and key expressions of modality?
2. If so, why do the differences apply?
3. What specific meanings do modality markers make in context?

## 4. Results and discussion

This section discusses the main findings of the analysis. It provides a fine-grained analysis of core modal verbs (Section 4.1) and of semi-modals and other expressions of modality (Section 4.2).

### *4.1 Core modal verbs*

Table 2 presents the tabulation of the raw and normalized frequencies of the lemmas for the core modals in the four sub-corpora. The lemmas consist of the basic form of each modal verb plus any possible contracted form. For example, CAN represents the forms *can*, *can't* and *cannot*, and WILL the forms *will*, *won't* and *'ll*. Lemmas are indicated in small caps.

| Core modals | UK | US | IT | CE |
|---|---|---|---|---|
| CAN | 338 (.964%) | 133 (.450%) | 108 (.386%) | 272 (.808%) |
| WILL | 274 (.781%) | 89 (.301%) | 95 (.340%) | 131(.389%) |
| MUST | 167 (.486%) | 64 (.216%) | 53 (.189%) | 184 (.547%) |
| SHOULD | 156 (.445%) | 111 (.375%) | 46 (.164%) | 48 (.143%) |
| MAY | 117 (.334%) | 94 (.318%) | 42 (.150%) | 73 (.217%) |
| WOULD | 16 (.046%) | 8 (.027%) | 1 (.004%) | 14 (.042%) |
| COULD | 15 (.043%) | 8 (.027%) | 8 (.029%) | 8 (.024%) |
| MIGHT | 7 (.020%) | 17 (.057%) | 2 (.007%) | 6 (.018%) |
| SHALL | 0 (.000%) | 2 (.007%) | 10 (.036%) | 1 (.003%) |
| Total | 1090 (3.108%) | 526 (1.779%) | 365 (1.305%) | 737 (2.190%) |

**Tab. 2:** Frequencies of core more verbs (lemmas)

A look at the table shows that the British sub-corpus features a higher number of core modal verbs in respect to all the other components, including the US one. This trend is in line with the findings of the studies reviewed in Section 2, according to which modal verbs tend to be more common in British than in American English.

The UK data scores the highest total value for core modals (3.108%), followed by the CE (2.190%), the US (1.779%), and the IT sub-corpora (1.305%). Specifically, the British component also displays the highest values for each individual modal, with only a few exceptions: MUST is more frequently used in the CE component, MIGHT in the American, and SHALL in the Italian one.

CAN and WILL are the most used core modals across the board. CAN is mainly employed to express deontic and/or dynamic meanings. In addition, or alternatively, it can express epistemic modality. COULD, the past form of CAN, is used to speculate about whether something is true or possible or to seek permission or make requests and directives (Carter and McCarthy 2006, 645-646). The following extracts exemplify the use of these modal verbs:[22]

(1) You can take a private paid test 5 full days after arriving from an approved provider. (UK)

(2) You can gather indoors with fully vaccinated people without wearing a mask or staying 6 feet apart. (US)

(3) Can I wave goodbye or welcome someone inside? (CE)

(4) Can the new Coronavirus infection be developed by a case that presents no symptoms (asymptomatic)? (IT)

(5) Where can I get further information? (CE)

(6) If a passenger's flight is at 1pm on a Friday, the passenger could board with a negative test that was taken any time on the prior Tuesday or after. (US)

Examples (1) and (2) illustrate that the most recurrent subject of CAN in all the datasets is the pronoun *you*, like in promotional tourism discourse (e.g. Manca 2016, 126-127). By using this pronoun, Covid-19-related information texts address the reader and prospective traveler

[22] The specific sub-corpus each example belongs to is indicated in brackets at the end of the extract.

directly. CAN is also used to ask questions that are often included in the Frequently Asked Questions (FAQs) sections of the websites (see examples 3 to 5). In such cases, the subject of yes/no- and WH-questions tends to be the personal pronoun *I*, used in reference to the reader/prospective traveler. These questions are meant to focus the reader's attention on a given Covid-19-related issue addressed in a subsequent stretch of text.

WILL can be used to make a variety of meanings, including: predictions about the future and deductions about a present situation from the available evidence (epistemic uses); intentions, offers, requests and invitations (deontic uses); and future time (Carter and McCarthy 2006, 647-649). As can be seen from the examples below, in the corpora under investigation, WILL is mainly used with the subjects *you* and *they* (7 and 8), the word *passengers* (9), with the names of health protections agencies such as *CDC* (Centers for Disease Control and Prevention) in the US (10) and *GGD* (Municipal Health Service) in the Netherlands, or with various other types of subjects in WH-questions (11). Finally, WILL sometimes occurs in combination with the semi-modals *have to* and *need to* (9).

(7) You will also notice that seating arrangements have been changed to ensure social distancing measures can be observed. (UK)

(8) They will phone you to give you the results as quickly as possible. (CE)

(9) Passengers will have to enter through door 8 on the first floor […] (IT)

(10) CDC will update these recommendations as more people are vaccinated, as rates of COVID-19 change, and as additional scientific evidence becomes available. (US)

(11) How will social distancing be implemented in the checkpoint line? (US)

In all corpus components, MUST is used exclusively to indicate deontic modality, namely authoritative obligations, prohibitions or necessity. Obligations and prohibitions tend to be targeted to *travelers*, also called *arrivals* or *passengers* (see examples 12 and 13 below), to the pronoun *you* (15 and 16), referred to the reader/traveler, and to airport ground staff (14). On the other hand, necessity concerns the tests that travelers have to take (17) and the procedures they have to go through (18).

(12) All other arrivals must quarantine at home. (UK)

(13) Returning travelers must go straight home or to other suitable accommodations immediately after landing. (CE)

(14) Employees must wear a mask while on the premises of a transportation hub unless they are only person in the work area (US).

(15) At the moment you must not go to or from Scotland unless you have a good reason. (UK)

(16) You must notify the local health department without delay by submitting a before-entry completed arrival form. (CE)

(17) The test must meet performance standards of ≥97% specificity, […] (UK)

(18) Social distancing must be maintained on board aircraft (IT)

SHALL can be used instead of WILL with first person subjects in rather formal contexts to make predictions or announce intentions (Carter and McCarthy 2006, 649). It can also be used with second and third person subjects to issue directives and express speaker volition as an alternative to MUST in very formal contexts, especially in legal or quasi-legal English (Quirk et al. 1985, 230; Huddleston and Pullum, 2002, 194-196; Maci 2013, 112). In the corpus under investigation, SHALL is exclusively used with third person subjects to issue directives: ten times in the Italian texts (see 19 and 20 below), twice in the US ones (21 and 22), and once in the CE texts (23). No occurrence was detected in the UK component.

(19) Airlines and Shipowners shall obtain, from passengers, the proof of registration on the Sardegna Sicura website/App and the documentation certifying the reasons for travel and possession of the requirements referred to in Prime Ministerial Decree dated 2 March 2021. Failing that, boarding shall be prohibited. (IT)

(20) Transport and haulage personnel engaged in transporting passengers and freight shall not be required to self-isolate in Italy (unless they show symptoms of COVID-19) but shall nevertheless be required to take a molecular or antigen swab test on arrival at the airport […] (IT)

(21) The guidance for travelers [...] shall apply prospectively from April 5, 2021. (US)

(22) Late hour license hours […] shall remain prohibited during the Chicago Bridge Phase. (US)

(23) According to the explanatory memorandum on the law, transport shall not be denied to German citizens […] (CE)

Most of the clauses with SHALL in the corpus are passive ones, and their predicates often contain lexical verbs expressing prohibitions or obligations (e.g. *prohibit*, *deny, require*). In all the sub-

corpora, these types of lexical verbs are also used in combination with WILL, third-person subjects and the passive voice. In such cases, WILL appears to be less formal, imposing and directive than SHALL (24):

(24) From 15 February, all arrivals to the UK will be required to quarantine at home … (UK)

The majority of the instances of SHOULD in the corpus express deontic modality, ranging from necessity to obligation. The meanings are similar to those associated with MUST, yet SHOULD is less forceful and "committed" (Quirk et al. 1985, 221; 227). As can be seen from the excerpts (25) to (29), SHOULD is used with the general subject *you*, as well as with nouns such as *people*, *travelers*, and *caregivers*. Like CAN, SHOULD is also frequently employed to ask questions in FAQs sections with the pronoun *I* as subject (29).

(25) You should continue to follow recommended physical (social) distancing practices, staying at least 6 feet away from others, wear a face covering in the airport, and wash your hands often. (US)

(26) People who are not in your household or support bubble should not help you to move. (UK)

(27) All travelers who are not fully vaccinated should get tested with a COVID-19 viral test (swab or saliva) 1-3 days before travel. (US)

(28) The caregiver should be in good health and should not have any illnesses that put him/her at risk if infected. (IT)

(29) Should I use disinfectant on my hands? (CE)

In a handful of cases from the UK and in the IT data, SHOULD is used "with subject-verb inversion as an alternative to *if* in more formal contexts to refer to hypothetical situations" (Carter and McCarthy 2006, 654), as illustrated by (30) and (31):

(30) Should you need to be searched all of Security team will be wearing face coverings. (UK)

(31) Should the mother be asymptomatic and feel able to manage her newborn independently, mother and newborn can be managed together. (IT)

Some scholars associate this construction with formality and even with a somewhat literary style (Quirk et al. 1985, 1093-1094).

In the corpus, MAY mainly denotes epistemic possibility, which is "the possibility of a given proposition's being or becoming true" (Quirk et al. 1985, 223). In such cases, the subjects of the clause are often the second person singular pronoun *you* (32 and 33), the third person plural *they* (34), or other referents (e.g. *this variant* in 35). MAY can also pre-modify an expression of deontic modality, such as *not be allowed to* in (32).

(32) If you are not British or Irish, you may not be allowed to enter the UK. (UK)

(33) Depending on the site, you may walk up or we may swab you in your car. (US)

(34) Employees or travelers who believe they may have been in contact with a person who has COVID-19 should consult with their healthcare provider. (US)

(35) Preliminary data indicate that this variant may also be characterised by higher transmissibility […] (IT)

At times, MAY expresses a deontic meaning of permission, such as in the following cases, in which the subjects are the inanimate noun *restaurants* (36), the pronoun *you* (37 and 38) and *the above categories* (39):

(36) Restaurants may continue to sell food via delivery, takeout, or curbside pickup at all hours. (US)

(37) In Hesse, you may end the quarantine five days after arriving in Germany by presenting a negative test result. (CE)

(38) You may request permission to leave quarantine for a limited period if a close family member or member of your household is dying. (UK)

(39) The above categories may be authorized entry exclusively in compliance with a specific protocol. See the section dedicated to India, Bangladesh, and Sri Lanka. (IT)

By contrast, MIGHT always indicates epistemic possibility. It is used either before lexical verbs (40) or before semi-modal verbs (41):

(40) Getting trip cancellation insurance might help ensure you are able to make a last-minute cancellation or change your itinerary […] (US)

(41) You might have to pay a fine of £200 for the first time that you break the rules. (UK)

WOULD is rather frequently employed in the UK and the CE sub-corpora. It is mainly used as a hedge to soften statements and requests (Carter and McCarthy 2006, 650-652). It often occurs with the personal pronouns *you* or *we* as subjects, with the catenative verb *like,* and with and lexical verbs such as *reassure* (42) and *report* (43). It is also employed to refer to habitual actions in the past that cannot take place at the time of writing because of the pandemic (44).

(42) We would like to reassure you that amendments to your booking can be made up to 24 hours prior to your original booking time. (UK)

(43) If you would like to report a hand sanitizer station that needs filled, please call 312-446-7265. (US)

(44) When you have collected your baggage, you go through customs into the arrival hall. This is where you would usually meet the person or people picking you up, but because we don't want the arrival hall to become too busy, we request that you meet and greet in the car park. (CE)

### *4.2 Semi-modals and a selection of key expressions of modality*

The semi-modals discussed in Leech et al. (2009, 91-117) were searched for in the corpus by using lemmas that captured all the inflected forms of the main verbs followed by the other words of the verb constructions. Table 3 provides quantitative information about the semi-modals attested in the corpus.

A look at the total frequencies shows that the distribution of the semi-modals follows the same trend of the core modals: the UK sub-corpus uses the highest amount of them, followed by the CE, the US and finally the IT sub-corpus. It also shows that they are much less extensively used than the core modals.

| Semi-modals | UK | US | IT | CE |
|---|---|---|---|---|
| NEED (not) (to) | 127 (.364%) | 70 (.237%) | 29 (.104%) | 50 (.149%) |
| BE (not) able to | 52 (.148%) | 9 (.030%) | 6 (.021%) | 20 (.059%) |
| HAVE to | 36 (.103%) | 10 (.034%) | 21 (.075%) | 43 (.128%) |
| BE (not) to | 3 (.009%) | 0 (.000%) | 1 (.004%) | 6 (.018%) |
| BE going to | 1 (.003%) | 0 (.000%) | 0 (.000%) | 3 (.009%) |
| Total | 219 (.625%) | 89 (.301%) | 57 (.204%) | 122 (.363%) |

**Tab. 3:** Frequencies of semi-modal verbs across the sub-corpora

When it comes to expressing necessity or obligation by "external forces" (Quirk et al. 1985, 226), the writers of the Covid-19-related information texts under investigation give preference to "NEED (not) (to)" rather than to "HAVE to." This runs against the findings presented by Leech et al. (2009, 97-102), according to whom the latter is both synchronically and diachronically more used in general spoken and written British and American English than the former. One possible explanation for the writers' preference is the strategic value of "NEED to" "in 'camouflaging' an imposed obligation as being in the obligatee's best interest" (Leech et al. 2009, 110).
Furthermore, the texts under investigation favor the semi-modal "NEED to" over the "marginal" modal "NEED (not)" (Leech et al. 2009, 92), which occurs only in two cases attested in the US data. Examples (45) and (46) illustrate the use of the semi-modal form, while examples (47) and (48) are the two instances of marginal "NEED (not)":

(45) You'll need to show your form when you check in to travel or board your plane, train or ferry to the UK. (UK)

(46) When do I need to go into quarantine? (CE)

(47) Loss of taste and smell may persist for weeks or months after recovery and need not delay the end of isolation. (US)

(48) If you would like to report a hand sanitizer station that needs filled, please call 312-446-7265. (US)

"BE (not) able to" "often means the same as *can* when referring to abilities […] and it is often used in situations where *can* is not grammatically possible" (Carter and McCarthy 2006, 671; italics in original). The most common of such contextual situations in the four sub-corpora is when this semi-modal is deployed in combination with a core modal, which happens in about 74% of the cases. The core modals that most frequently co-occur with it are WILL, MAY, NEED and MUST. They are used to add further modal meanings to that of ability, as illustrated by examples (49) and (50):

(49) There are no exemptions from the testing obligation for areas of variants of concern. This means that all persons entering the country aged six years or over, who spent time in one such area within the previous 10 days, must be able to present a medical certificate (CE)

(50) If your plans are cancelled, we advise you to contact your airline or tour operator. You can also check ABTA's website which may be able to help with your questions (UK).

"HAVE to" is most frequent in the CE data. Generally, it appears that it could be substituted for by "NEED to" (51) and that it is attracted by interrogative forms and expressions of lack of obligation (52 to 54).

(51) Then all you have to do is drop off your baggage in the departure hall at Schiphol. (CE)

(52) What is it and do I have to bring it with me before I fly? (CE)

(53) People who are clinically extremely vulnerable don't have to shield themselves anymore. (UK)

(54) If you are fully vaccinated, you do NOT have to self-quarantine after exposure to a person with COVID-19. (US)

The few instances of "BE (not) to" in the dataset are employed in formal directives (55), while "BE going to" in predictions and in the expression of intentions (56) (Carter and McCarthy 2006, 664-665).

(55) All other arriving passengers are to follow the usual process through immigration and passports. (UK)

(56) So always wear a face mask at the check in desks, at security, throughout the border processes, during boarding and at reclaim. Schiphol staff are going to be helping you to remember this. (CE)

Some keywords/lemmas conveying modal meanings emerged from the comparisons drawn between the sub-corpora described in Section 3.2. Among the words that scored high keyness values are suasive verbs describing indirect directives (Quirk et al. 1985, 1182-1183) and the nominalizations derived from them. Their raw and normalized frequencies are reported in Table 4:

| Comp. | Key lemmas | UK | US | IT | CE |
|---|---|---|---|---|---|
| UK/US | ADVISE | 20 (.057%) | 1 (.003%) | 7 (.0025%) | 12 (.036%) |
| UK/US | ADVICE | 64 (.183%) | 2 (.007%) | 3 (.011%) | 15 (.045%) |
| US/UK & IT/UK+US | RECOMMEND | 11 (.031%) | 30 (.101%) | 40 (.143%) | 8 (.024%) |
| US/UK | RECOMMENDATION | 1 (.003%) | 56 (.189%) | 12 (.043%) | 1 (.003%) |

| | | | | | |
|---|---|---|---|---|---|
| US/UK | REQUIRE | 79 (.225%) | 121 (.409%) | 58 (.207%) | 61 (.181%) |
| US/UK | REQUIREMENT | 53 (.151%) | 83 (.281%) | 16 (.057%) | 52 (.155%) |
| CE/UK+US | OBLIGE | 0 (.000%) | 0 (.000%) | 1 (.004%) | 5 (.015%) |
| CE/UK+US | OBLIGATION | | | | |
| IT/UK+US | | 4 (.011%) | 0 (.000%) | 36 (.129%) | 75 (.223%) |
| Total | | 232 (.662%) | 293 (.991%) | 173 (.618%) | 229 (.681%) |

**Tab. 4:** Frequencies of a selection of key modality expressions obtained from the comparisons between sub-components (see column 1)

While the UK and the CE text writers show a preference for ADVISE/ADVICE, the US and the IT ones tend to express similar meanings with RECOMMEND/RECOMMENDATION. Furthermore, the US writers used the necessity/obligation expressions REQUIRE/REQUIREMENT the most, while the CE ones produced the highest number of instances of OBLIGE/OBLIGATION. Finally, the Italians made the most extensive use of RECOMMEND.

RECOMMEND deserves some attention, as a detailed analysis of its patterns of use revealed some infelicitous choices made by the Italian text producers. According to both prescriptive and descriptive English grammar, the complementation patterns admitted by RECOMMEND are: object, *that*-clause, *-ing* clause, "to someone" + *that* clause (e.g. Quirk et al. 1985, 1182; 1189-1190; 1213-1214; Carter and McCarthy 2006, 519-523; 528-529). As can be seen from Table 5, the native writers exploited the first three of them (see examples 57 to 59 below), but not the last one. However, they also wrote objective clauses without complementizer (60) and the past participle form *recommended* (61).

(57) […] public health officials recommend the influenza vaccine. (US)

(58) we recommend that you plan your journey in advance (UK)

(59) For rapid tests, we recommend allowing three hours before the flight is scheduled to depart. (US)

(60) For safety and capacity reasons, we do not recommend you arrive earlier than your 5-minute time slot. (US)

(61) Rapid lateral flow testing […] is recommended for all secondary school pupils and college students. (UK)

| RECOMMEND | UK | US | IT | CE |
|---|---|---|---|---|
| Object | 1 (.003%) | 2 (.007%) | 1 (.004%) | 0 (.000%) |
| *that*-clause | 3 (.009%) | 6 (.020%) | 9 (.032%) | 4 (.012%) |
| -*ing* clause | 2 (.006%) | 11 (.037%) | 4 (.014%) | 1 (.003%) |
| clause no *that* | 3 (.009%) | 5 (.017%) | 0 (.000%) | 0 (.000%) |
| *recommended* | 2 (.006%) | 6 (.020%) | 8 (.029%) | 2 (.006%) |
| to someone *that*-clause | 0 (.000%) | 0 (.000%) | 2 (.007%) | 0 (.000%) |
| ?*it is recom. to* DO | 0 (.000%) | 0 (.000%) | 10 (.036%) | 0 (.000%) |
| *?to*-clause | 0 (.000%) | 0 (.000%) | 1 (.004%) | 1 (.003%) |
| *someone to DO | 0 (.000%) | 0 (.000%) | 5 (.018%) | 0 (.000%) |
| Total | 11 (.031%) | 30 (.101%) | 40 (.143%) | 8 (.024%) |

**Tab. 5:** Breakdown of the complementation patterns of RECOMMEND in the corpus and their frequencies

The Italian writers took advantage of all the 'canonical' patterns, including the "to someone + *that*-clause" pattern (62), as well as of three non-canonical and thus very likely erroneous patterns: the "it is recommended to DO" (63), the "*to*-clause" (64), and the "someone to DO something" patterns (65).

(62) What is recommended to all Italian citizens? (IT)

(63) […] it is strongly recommended to use a respiratory tract protection, […] (IT)

(64) We recommend (as indicated by the authorities) to have a sufficient number of masks (IT)

(65) In any case, we recommend you to check carefully the regulation established in the country of destination […] (IT)

The production of these inaccurate patterns is very likely due to interference from Italian, and specifically to the different complementation patterns required by the Italian verb *raccomandare*. Furthermore, the writers might have confused the "objective clauses without complementizer" pattern with the "someone to DO something" one.

## 5. Discussion and conclusions

The Covid-19-related information texts explored in this paper aim to provide international travelers with clear and thorough information and guidelines on how to travel safely and in good health to their final destinations. These texts were written by local and/or national institutional boards and are meant to be consulted at the pre- and on-trip stage by accessing the airport websites of interest. They belong to an interdiscoursive genre, bringing together features of tourism English, airport ground staff English and legal English. Since modality is an extremely important feature of all these specialized types of discourse, it stands to reason that it should play an equally important role in the corpus of texts under investigation. This consideration has prompted the choice of a fine-grained corpus-based study of modality.

The representative sub-corpus of texts published on British airport websites feature the largest frequency of both central modals and semi-modals, thus outnumbering those from the selection of North American airports' websites. This is in line with research results on general English, which has shown that in recent years central modals and semi-modals have decreased in frequency more dramatically in American than in British English. By contrast, the US information texts appear to rely more extensively on suasive verbs, such as *recommend* and *require*, and on the nominalized forms derived from them. The selected webpages from central European airports score the second largest frequencies for all types of modality, while the Italian ones the lowest ones. With regard to the high number of core- and semi-modals used, the Covid-19-related information texts produced by central Europeans boards appear to be closer to the British variety, while those produced in Italy to the American one.

CAN and WILL are the most frequent core modals across the board. Furthermore, CAN, SHOULD and WOULD are often used to ask questions, especially in the sections devoted to FAQs. Semi-modal NEED *to* is preferred over marginal modal NEED, which is employed only twice in the US data. Formal and quasi-legal SHALL is mainly used in the Italian and in the US data, which suggests that Italian and, to a lesser extent, American Covid-19-related information texts are conceived of as pseudo-legal pieces of writing. In the UK and in the IT sub-corpora, SHOULD is used in some conditional clauses with subject-verb inversion, thus adding a flavor of formality to these texts.

MUST is used the most in the central European data, while RECOMMEND in the Italian data. This tendency is likely due to interference from the languages spoken in the two areas. On the one hand, both German *müssen* and Dutch *moeten* are cognates of English *must*, while Italian *raccomandare* is a cognate of English *recommend*. This latter consideration explains the ungrammatical patterns used after *recommend* detected in the Italian data.

Although collected in a principled way, the corpus used for this study may not be completely representative of the Covid-19-related information text genre, and a larger corpus would be desirable. Such a corpus could include data about a larger number of airport hubs, possibly also from countries where English is spoken as a second language, e.g. India, thus giving voice to L2 varieties as well. It would be interesting to explore whether the L2 English used in these areas is influenced by the other official language(s) of the country and by the local cultural and institutional environments. A larger database would also make it possible to study other expressions of modality, including adverbs, adjectives, nouns and syntactic structures contributing modality meanings. It would also enable the investigation of Covid-19-related terminology, which might vary across countries, varieties of English and contexts (e.g., *bubble, face mask, face covering, quarantine, isolation, curfew, lockdown*).

In spite of these limitations, the findings of this study can have implications for writing informative and directive texts targeted to travelers of the Covid-19 era and beyond. Prospective writers of such texts should be aware of the differences in the frequency and type of modality (dis-)favored by authors belonging to different English varieties, and of the resulting varying degrees of imposition, formality and legal status they might convey. Furthermore, non-native writers should pay careful attention to the correct use of modal expressions, carefully consider the meanings they convey, and avoid overusing and/or misusing some of them. Writers should also take into account the emerging features of this dynamic genre and use them appropriately. Notably, they might want to consider including a FAQs section and/or asking clearly articulated questions in the texts, with the aim of focusing the readers' attention on the topics discussed in detail later on.

The appropriate uses of modality markers and of the other genre-specific features that this paper has brought to light has the potential to ultimately be beneficial for both national and international travelers, who need clear and well-structured guidelines that are neither too imposing and detailed nor too relaxed and vague.

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