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UP IN THE AIR
Air traffic control language use and attitudes

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Tämä Pro gradu -tutkielma käsittelee lennonjohdon kielen käyttöä sekä heidän kieliasenteitaan koskien niin ilmailun virallista kieltä englantia kuin muita kieliryhmiä, joiden kanssa lennonjohtajat ovat työnsä kautta vuorovaikutuksessa. Lisäksi tutkielmassa tutkitaan kielipolitiikan problematiikkaa ja sen yhteyttä kieliasenteisiin sekä monikielisyyttä asenteiden taustatekijänä. Näitä kysymyksiä tarkastellaan lennonjohtajille jaetun kyselyn ja sitä seuranneiden sähköpostihaastattelujen kautta. Kohteena on kaksi lentokenttää: Suomen Helsinki-Vantaa ja Espanjan Málaga - Costa del Sol. Osallistujamaat valittiin niiden erilaisen kulttuurillisen sekä kielellisen taustan takia.

Tutkimuksen taustalla on 2008 ilmailun tiukentuneet kielitasoedellytykset sekä 2017 voimaan tullut lakiesitys, että suurimmilla lentokentillä lennonjohdon tulisi käyttää eksklusiivisesti englantia. Suomessa laki otettiin hyvin vastaan, kun taas Espanjassa sitä vastustettiin ja siihen haettiin ja saatiin poikkeus. Nämä erilaiset suhtautumistavat äidinkielen rajoittamiseen luovat hyödyllisen lähtökohdan kieliasenteiden tutkimukselle. Kieliasenteiden tutkiminen tässä ympäristössä puolestaan on merkittävää ilmailuun liittyvien operaatioiden sujuvuuden ja turvallisuuden kannalta. Aikaisempi ilmailua koskeva kielitutkimus on keskittynyt lähinnä lentäjien kokemuksiin; täten lennonjohtajien tutkiminen on tarpeellista.

Tieteellisenä viitekehystenä tutkielma hyödyntää sosiolingvistiikkaa sekä pragmatiikkaa etenkin monikulttuurisuuden kontekstissa. Lisäksi teoriana toimivat yritysmaailmaa koskevat tutkimukset, joissa monikulttuuristen fuusioiden seurauksena yritysten kielimaisema on muuttunut ja lopulta viralliseksi kieleksi on valikoitunut englanti. Näin ollen tutkimus soveltaa teoriassaan ELF (English as a Lingua Franca) -variantin tutkimusta sekä toisen kielen oppimiseen liittyvää tematiikkaa. Lennonjohdolle jaetun kyselyn tuloksia tarkastellaan pääasiassa kvalitatiivisesti, mutta joiltakin osin myös tilastojen kautta.

Espanjassa kyselyyn vastasi 11 ja Suomessa 27 lennonjohtajaa, joista sähköpostihaastatteluihin valittiin kaksi vastaajaa kustakin maasta. Kyselyssä ja etenkin sähköpostihaastattelussa esiintyvät kieliasenteet liittyvät pääasiassa vastapuolen puutteelliseen englannin kielen taitoon ja vastaajat nimeävät selkeästi haastavia kieliryhmiä. Varsinaisesti lennonjohdon työn kannalta ongelmallisia asenteita ei ole havaittavissa, vaikkakin joitakin stereotyyppisiä nousee esille. Tärkein löydös on kuitenkin lennonjohtajien ajan kanssa rapistuva kielitaito, johon vastaajat esittivät monenlaisia ratkaisuja, toivoen etenkin johdon osallistumista varsinaisen ammatillisen koulutuksen jälkeiseen kielitaidon kehittämiseen. Näin ollen tutkielma tarjoaa lennonjohdon työhön konkreettisesti vaikuttavia näkökulmia, joihin jatkotutkimuksen myös kannattaisi keskittyä.

Avainsanat: lennonjohto, ilmailu, kieliasenteet, pragmatiikka, monikielisyys, ELF, kielipolitiikka

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ABSTRACT

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This Pro gradu thesis examines air traffic control language use and attitudes concerning the official language of aviation, English, as well as other linguistic groups ATC interacts with professionally. The study is also interested in the problematics of language policy and multilingualism as a background factor for attitudes. These issues are examined via a questionnaire contributed to the ATC and follow-up email interviews. The target airports are the Helsinki-Vantaa airport in Finland and the Costa del Sol airport in Spain. The participant countries were chosen because of their contrasting cultural and linguistic backgrounds.

The research is preceded by the 2008 heightened demands for linguistic competence in aviation and the legal proposition that the largest airports around Europe should use English exclusively. In Finland the initiative was well-received whereas in Spain it faced fierce opposition and a legal exception was thus granted. These different responses offer a fruitful starting point to studying language attitudes. Studying these issues is essential for guaranteeing smooth and safe aviation operations. Moreover, previous research has mainly assessed pilot views and so studying ATC views is necessary.

As theoretical framework, the study applies sociolinguistics as well as pragmatics, especially the subfield that studies multicultural contexts. In addition, the study utilizes research focusing on multicultural mergers where the linguistic realm has subsequently changed and English has been eventually elected as the main language. Thus, studies revolving around ELF (English as a Lingua Franca) and L2 thematics are also relevant to the present study. Results on the questionnaire distributed to ATC are mainly scrutinized qualitatively although some statistics are included as well.

11 ATC employees responded to the survey in Spain while 27 Finns participated. Two respondents were chosen for the email interviews from each country. In both the questionnaire and the subsequent interviews the participants mainly expressed attitudes that were based on the linguistic incompetence of their counterparts, and especially challenging linguistic groups were clearly named by the respondents. Particularly problematic attitudes that could hinder safe operations were not found, although some stereotypes arose in the responses. The most significant finding in the present study is, however, the controllers' deteriorating linguistic competence to which they offered many remedies. Management involvement in post-training linguistic improvement of the ATC was particularly desirable. The present study therefore offers findings that could elevate ATC competence in a tangible way, as well as a starting point to future research concerning aviation.

Keywords: Aviation, aviation English, air traffic control, ATC, language policy, language attitudes, pragmatics

The originality of this thesis has been checked using the Turnitin OriginalityCheck service

PREFACE

This study is the result of not only hard work but the very kind assistance I received from many directions. The amount of help I received was truly overwhelming.

Firstly, thank you to the ATC members who participated in the survey

– your input made this study possible but was also extremely interesting to read.

Secondly, Interviewee1 gave me a unique glimpse into the everyday life of the ATC.

Two air traffic controllers also kindly piloted the survey and pointed out the errors.

I am in awe of the work air traffic controllers do. Thank you for your dedication to making travelling safe for everyone.

Jyrki Paajanen from the European Commission was very helpful in providing legal information. Thomas Karlström from the aviation academy shared valuable information about ATC training. Thank you both for your time.

Finally, thank you Sokol for your support.

In Tampere, January 26, 2022.

Leena Hakrama

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1 INTRODUCTION

There are few environments where language use has such crucial repercussions as it does in aviation. Failing to employ linguistic forms attentively and accurately can lead to problem situations, unnecessary stress and, in worst case scenarios, fatal events. Air traffic control (ATC) has a vital role in making sure aircrafts take off, travel and land safely – and preferably on time – by giving instructions to the pilots on each plane in their air space.

Since the 1950s, English has been used as the prevalent language of air travel communications (Tiewtrakul & Fletcher 2010, 229); thus, ATC operators worldwide must master this lingua franca to be able to perform their tasks to a necessary standard. Linguistic inadequacy, on the contrary, can present itself as a serious risk factor when the communicating parties do not share a first language (Tiewtrakul & Fletcher 2010, 229). Although weak English skills can occur due to poor resources for learning it, dispositions concerning the language can also motivate resistance to its application (Coulmas 2005, 195). English might be the ruling language of the international airspace but real-life circumstances do not always reflect the enforced policy, as Cheng (2004, 50) has found.

The interplay between language policy, usage and attitudes are spheres this research dwells in by examining air traffic control as a multicultural and -lingual environment. The focus will mainly be on English with specific attention given to how comfortable controllers are with the language and how their language attitudes affect their willingness to apply it professionally. Interculturalism will however be given some attention as it has often been cited as a complication for aviation (Tajima 2004; Tiewtrakul & Fletcher 2010; Cheng 2014). The specific areas of interest in the research are two geographically distant European countries: Finland and Spain. These countries were chosen based on their very different histories and present relationships with the English language.

Much of the research concerning air traffic control focuses on analyzing the language choices contributing to accidents (Cushing 1994; Tajima 2004; Shorrocks 2006; Tiewtrakul & Fletcher 2010; Breul 2013). ATC has yet to attract attention from sociolinguists although it's one of the most significant multicultural environments in the world with innumerable cross-linguistic encounters every day. Furthermore, the linguistic backgrounds and views behind ATC language use have thus far not been assessed at length. There is also a slight tendency for most of the aviation analysis to concentrate on the cockpit side of risk situations since it is the pilot who controls the aircraft and makes the crucial decisions in the end.

Studying attitudes towards English is very timely, as the use of other languages was relatively recently prohibited in the largest European airports, Jyrki Paajanen¹ from the European Commission informs (personal communication, October 19, 2017). Not everyone, however, welcomed the policy: the French and the Spanish, in fact, resisted the application so fiercely that they were eventually given the freedom to opt out of the ruling, Paajanen continues. Finland, on the contrary, has not contended (J. Paajanen, personal communication January 18, 2018). Despite the different policies on the airports, the International Civil Aviation Organization has previously ruled that English must be nevertheless available upon request everywhere, stating “safety” as the reason (ICAO document A38-8).

Interestingly for Finland, according to an ATC operator that was initially interviewed for this study (personal communication, December 3, 2017) there seems to generally exist a readiness to accept the English-only policy as practice has already been largely in accordance with the recent legislation. Finns were also readily co-operative in various aspects of the study whereas the Spanish in general showed more reservation, which could imply that ATC language policy is still a sensitive issue among the South European aviation personnel.

Over the process of this research, aviation in Europe has altogether been facing a chaotic time with strikes and consequent inconvenience for travelers – in fact 2018 was declared “one of the worst years on record for air traffic control delays and flight cancellations in nearly a decade” by Airlines for Europe (n.d.). The Helsinki-Vantaa airport then overcame a job action in early 2019 (ANS Finland, n.d.). In Spain, the province of Catalonia was in the meanwhile fighting for independence from Spain (BBC 2017), stirring unease in the nation. If there ever was a fruitful time to be studying cross-cultural communication and language attitudes, it would be in the midst of these events.

¹ Jyrki Paajanen works in the Mobility and Transport division of European Commission and has assisted in this research by providing information on legal developments in European aviation.

2 DATA AND METHOD

This study utilizes an online survey to assess air traffic control language use and attitudes. The areas of focus are two European airports: Helsinki-Vantaa in Finland and the Málaga - Costa del Sol airport in Spain. In addition to the questionnaire, two ATC professionals from each airport were subsequently interviewed for the study. The main research questions this study aims to answer are:

- What kind of individual and collective attitudes towards English can be detected?
- Which factors contribute to these attitudes?
- For possible negative attitudes, is the resistance against the language itself or against the policy?
- Does multilingualism complicate ATC work in some ways?
- What conclusions and practical implications can be drawn from the results?

There are also opportunities for ATC staff to share real-life experiences where language has compromised the efficacy of their work, as these descriptions could reveal problematic communication patterns and attitudes. The subjects are given anonymity although the option for leaving an email address was provided for those who would be interested in participating in the email interviews. The interviewees were chosen at random.

There are both multiple choice and open-ended questions in the survey and the results are examined mainly via qualitative methods although statistics are given when relevant. The complete outline of the survey can be found in Appendix 1. Answers were requested in English-only despite the domestic airport of Helsinki-Vantaa taking part in the study, as this would give all respondents an equal platform linguistically. The survey was piloted by two ATC operators from Pirkkala and Helsinki-Vantaa airports in Finland. Survey Planet was used as the platform for the questionnaire and the answering occurred during the Spring of 2019.

Prior to the creation of the survey, a semi-constructed interview with an experienced operator from the Helsinki-Vantaa airport was conducted to achieve a better understanding of ATC work and especially ATC communication. Much of the questioning followed the lines of the actual questionnaire. This interview should not be confused with the interviews following the survey; the operator initially assisting with the groundwork will thus be addressed as 'Interviewee1' throughout the study.

Before moving onto the theoretical grounds of the current study, I will discuss how English came to be the main language of aviation. I will also describe the specific variety² of English that ATC operators utilize. A basic understanding of the history of English in aviation industry as well as the measures that have been taken to better accommodate the language to suit the needs of ATC communications will later help in understanding the ramifications of choosing this specific lingua franca, as we deal with multiculturalism and -lingualism, language policy and attitudes.

² I will use the term ‘variety’ in reference to any kind of language variety in this study. This includes natural languages, dialectal styles as well as consciously constructed codes.

3 ENGLISH AS THE OFFICIAL AVIATION LANGUAGE

Aviation English refers to “a semi-artificial sublanguage based on English” (Breul 2013, 71) that is utilized by air travel staff globally. Terminologically, it is placed under English for Specific Purposes (Breul 2013, 74). As a coded variety, it differs greatly from the English we employ in everyday communication (details in Cushing 1994, 2, 11). As air traffic control is the focus here, I will generally refer to the linguistic variety in question as *ATC English* in the manner it is often used in research (e.g. Breul 2013; Kraśnicka 2016), although occasionally the terms *airspeak* and *aviation English* will also appear. It should be noted that the linguistic conventions within the cockpit crew are different from the ones air traffic control employs (see Dietrich & Childress 2016, 194) even though both are often discussed by the same terms in research. Although ATC English is not a perfectly uniform variety (Breul 2013, 74), as an overarching feature its context-reliance is reduced to promote disambiguity (Tajima 2004, 454). I will now introduce some attributes of the code.

3.1 General features of ATC English

Considering the vastness of air travel today, it is fundamental to ensure that all parties representing various linguistic backgrounds understand each other and that vagueness is avoided to the highest measure possible. Ambiguity of expressions and similar-sounding words have indeed often been cited as a cause for risk situations in aviation (Cushing 1994, 11, 14; Shorrock 2006, 894). English, hence, has its flaws and has to be modified to suit the aims of both native and non-native ATC professionals.

As ATC communication relies on radio transmissions in noisy environments, the pronunciation must be as easily comprehensible as possible. Differences in pronunciation, particularly dialectal variation, have also been previously raised as a major problem in communications between pilots and the ATC, especially by Tiewtrakul & Fletcher (2010). Due to these factors, the NATO code for numbers and letters is utilized. As an example, ‘niner’ is clearer over the radio transmission than ‘nine’ would be and is thus used instead (Breul 2013, 74); in German the conventional pronunciation actually translates to ‘no’ which could be very distracting (Tajima 2004, 463). Some examples from the NATO alphabet include ‘alpha’ for the letter A and ‘whiskey’ for W (North Atlantic Treaty Organization, 2016).

Aviation English generally has a large set of standardized phraseology specific to the field. These ‘airspeak’ expressions are very simplified versions of natural sentences and often omit for instance prepositions and personal pronouns in their syntax (Breul 2013, 75) – a phenomenon that linguistics calls ‘ellipsis’ (Crystal 2008, 166). There are also standardized codes such as ‘affirmative’

to signal understanding and ‘say again’ for a request for clarification (Breul 2013, 75). Finally, there is a predetermined hierarchy for which messages should be prioritized over others (Breul 2013, 74). The failure to use the correct phrase can have dangerous consequences although the pilot might think that plain English will solve the situation, as described in Cushing (1994, 11). The exhaustive list of expressions used in the ATC can be found on the Eurocontrol Phraseology Database online (Say again? Phraseology Database n.d.).

3.2 The ramifications of applying English in the ATC environment

English has been the prevalent language of air travel since 1951 (Tiewtrakul & Fletcher 2010, 229), although the foundations for this development were laid as early as in 1944 (see Kraśnicka 2016). There are several organizations worldwide that monitor the keeping of safety standards such as the ensuring of adequate linguistic skills among aviation staff. At the broadest scale, the International Civil Aviation Organization (ICAO), a UN-based agency with as many as 193 nations as members, monitors language proficiency worldwide (International Civil Aviation Organization, n.d.). In Europe, the EASA (European Union Aviation Safety Agency) oversees requirements with the multigovernmental organization Eurocontrol working alongside it (Skybrary 2019; J. Paajanen, personal communication, 19. October 2017).

While proficiency in English is most vital to the air travel personnel, it should be noted that some level of knowledge is necessary for the ordinary traveler as well, from reserving tickets to finding one’s way around a foreign airport or even ordering a drink on a flight. Moreover, emergency protocol could be explained in a language that the passenger does not speak and being uninformed could naturally have fatal consequences (Tajima 2004, 452). Air travel overall is an area where globalization is strikingly evident.

As for ATC operators, a generally comprehensible language is not only important to the operator and the pilot negotiating takeoffs and landings. It is also crucial for what is known as situation awareness: radio interactions are constantly overheard by pilots who are not directly part of the exchange but nevertheless must know what is happening (Tajima 2004, 455). These outsiders in “the listening watch” both keep track of the locations of other aircrafts and depict possible errors in others’ communications, Borins (1983, 31) explains. Situation awareness would of course be entirely impossible for someone linguistically unequipped to understand the conversation they are tuning into. Relatedly, Dietrich and Childress (2016, 193) warn against code-switching, as the change of language variety within a conversation can create risk situations (as explained in Cushing 1994, 44-45). A

lengthier account of problematic language use can be found in chapter 4 where previous ATC research will be discussed.

3.3 Policy implications of English

Considering the extent of time that English has been applied in global aviation, it is safe to say it is strongly established and hence reversing the policy would be extremely difficult. Yet, the choice of one language over others in any environment may lead to questioning its superiority. English certainly has its critics and its triumphant spread has occasionally been considered a threat to linguistic variation (e.g. Phillipson 2003). In any case, the obvious obstacle for substituting English in the aviation industry would be the immense resources necessary for educating the global staff in whatever variety is chosen as the replacement. Furthermore, *what* would be the plausible substitute for what already is a global lingua franca with massive educational resources is a question with no apparent answer.

Sometimes the practices of language can become problematic due to the language policy that is enforced in a certain context (Phillipson 2003, 86-87). A central question in the present study is whether resisting the use of English is the result of problems with the characteristics of or skills in the language itself or whether negativity is a response to a policy that is seen as a threat to one's linguistic identity. This question has certainly been largely overlooked in the aviation context. Little attention has likewise been given to the very question of identity which, after all, is an important aspect of linguistic choices, as Coulmas (2005, 171) notes. The issue of identity makes producing policies for any intercultural and -lingual environment very challenging. I will now further discuss the abovementioned issues.

4 INTERCULTURAL COMMUNICATION, POLICY AND LANGUAGE ATTITUDES

The theoretical background of this study mainly encompasses sociolinguistics and pragmatics. Sociolinguistics studies language in connection to society (Yule 2006, 205) and communication across language boundaries is one significant area of interest in this field. The cross-linguistic perspective has likewise raised interest in pragmatics over recent decades. There are some overlaps in how these disciplines approach intercultural communication and they could thus be described as two slightly different lenses through which the same issue is examined. The main difference is, though, that pragmatics focuses more on the linguistic coding of norms whereas sociolinguistics has adopted a wider perspective (Thomas 1983, 104) and is thus an overarching theory here.

Pragmatics, in essence, assumes that more is said than can be observed from the linguistic form of utterances and that the context of the exchange has great relevance to the interpretation (Birner 2013, 1-2). When communication breakdown occurs, it might well be due to misinterpretation of the message to which linguistic limitations of foreign language speakers can certainly contribute in disadvantageous ways (Thomas 1983). Intercultural pragmatics concerns itself with these cross-linguistic challenges and will be the topic of the following section. Section 4.1 thus discusses how cultural norms are embedded in languages, how L2 speakers fail to apply appropriate norms and how developing pragmatic competence can help. The focus will then shift to language policy and language attitudes.

To set the premises for the discussion, though, it is necessary to specify some key terms concerning non-natively used English. Linguistics generally makes the separation between different levels of ability in a language with the following abbreviations: L1 for the mother tongue, L2 for a second language and FL for a foreign language. The distinction between L2 and FL is sometimes a vague one but L2 is often used for a language that is widely spoken in one's home country, Johnson (2008, 12) concludes. I will utilize these terms interchangeably unless the context demands specificity. Finally, English as a Lingua Franca (ELF) is a hybrid form of English that is utilized among non-natives and typically serves a practical purpose (e.g. Knapp & Meierkord 2002, 10). I argue that English in the aviation context widely utilizes this type of English in addition to the ESP (English for Specific Purposes) terminology and that this angle is worthy of research.

4.1 Intercultural pragmatics

Intercultural pragmatics was born out of the contrastive approach that was interested in differences found in linguistic forms across cultures (Trosborg 2010, 2). Culture is however an inseparable part of language and inevitably the academia had to start paying attention to how cultural norms could be contributing to linguistic behavior (Trosborg 2010, 2). In theoretical terms then, being informed in intercultural pragmatics largely overlaps with what sociolinguistics calls ‘sociolinguistic competence’ (e.g. Johnson 2008, 32), as both demand familiarity with L2 rules.

To comprehend the effect of culture on language use and norms, a definition of the term is necessary. Yule (2006, 216) defines culture as “socially acquired knowledge” which defines the way we see the world around us. Mey (2007, 167) also discusses cultures as being embedded within one another and, relatedly, Thomas (1983, 91) points out that national context is not the only sphere that determines our ideological perspectives. Just as Coulmas (2005, 172) refers to identity on both individual and communal levels, we can be part of innumerable cultures based on contexts like our ethnic backgrounds, hobbies and professions. Cultures are also dynamic, constantly being redefined by their members (Meierkord 2012, 122) as well as by outside forces (Mey 2007, 170).

Although pragmatics is beneficial for understanding “virtually any linguistic expression”, as Breul (2013, 71) states, it has been proposed that the discipline could be culturally biased. Even the paramount theory of Gricean implicature has been repeatedly accused of leaning towards the West and the natively English-speaking world (e.g. Meibauer 2017; Wierzbicka 2008). The famous theorist Grice proposed four ‘maxims’ to be guiding interactions: quantity, quality, relation and manner (Birner 2013, 42). These could be either observed or broken intentionally or unintentionally (Birner 2013, 43).

The shortcoming of theories such as that of Grice is that across different languages different value hierarchies apply, Wierzbicka (2008, 12) indicates. What is considered as a violation of a maxim in one culture would not be seen as an offense in another, as Meibauer (2017) shows in regard to different approaches to lying. Hence, determining universally relevant principles of communication would be an impossible task – a notion that makes intercultural pragmatics ever more vital.

As an example of different principles, Wierzbicka (2008) discusses the Russian tendency to place honesty before tact, which tends to offend people with different cultural conventions. In another study, Thomas (1983, 107) describes a fitting example of receiving blunt feedback from her Russian supervisor and consequently feeling extremely offended by the manner of the speaker. However, *responding* in an honest way to the feedback was deemed inappropriate from the Russian viewpoint.

Thomas hence, at least in part, counterargues Wierzbicka's (2008, 12) statement that Russians generally value truthfulness above protecting the hearer's self-image and shows how value hierarchies could operate differently in different contexts. Culture becomes relevant again here as norms greatly vary between environments.

Intercultural pragmatics has often been suggested as an especially vital aspect to second language training (e.g. Thomas 1983; Piskorska & Walaszewska 2012). To be truly competent in a foreign language, one needs to acknowledge the general differences of the cultural norms between one's mother tongue and L2 (Piskorska & Walaszewska 2012, 2). Thomas (1983, 96), nevertheless, suggests that a foreign language teacher should focus on making students aware of L2 pragmatic principles rather than subjecting them to prescriptive rules that should be followed under all circumstances. Therefore, students are given autonomy while being able to avoid unknowingly breaking L2 pragmatic rules (Thomas 1983, 96).

Besides L2 incompetence, lack of pragmatic tools in a foreign language could in fact lead to stereotypes (Thomas 1983, 97). Stereotypes are ideas based on overemphasized differences between groups and they tend to be very stagnant in nature (Garret 2010, 32-33). Contrary to what might seem logical, regular contact with the mentally stigmatized group does not easily change these convictions Garrett (2010, 33) and Louhiala-Salminen et al (2005, 403) observe. Viewpoints of this type could indeed be toxic to a work environment.

While Breul (2013) has previously suggested that pragmatic knowledge would be beneficial to studies in the ATC environment, the inclusion of intercultural elements in research has sometimes been neglected. Perhaps this is due to ATC English typically being considered a highly standardized and hence formal variety without cultural connotations. However, the role of casual English has *repeatedly* been emphasized in research (Tajima 2004, 465; Sullivan & Girginer 2002, 402; Dietrich & Childress 2016, 193) as ATC work entails more than the application of terminology. Furthermore, the cross-cultural nature of the occupation has in general terms been suggested problematic to aviation (Breul 2013, 79). Below, the dynamics of cross-cultural communication will be further discussed.

4.2 Pragmatic transfer and failure

While the term 'transfer' traditionally in linguistics refers to the application of L1 patterns to another language (Yule 2006, 167), pragmatic transfer refers to norms being the element that gets carried, often unconsciously, across languages (Yates 2010, 288). Pragmatic failure occurs when an individual simply fails to understand the pragmatic meaning of an utterance (Thomas 1983, 91). Although it is

often discussed as a recipient problem, it is not always exclusively specified as such and at least Thomas (1983) freely uses the term for both sides of communication. In departure from grammatical errors that are typically excused based on inadequate skills, pragmatic errors can be judged very harshly and often seen as violations to what is considered polite and appropriate in the target language (Thomas 1983, 97; Yates 2010, 288).

4.2.1 Pragmalinguistic failure

Thomas (1983) discusses pragmatic failure on two levels: the pragmalinguistic and the sociopragmatic. Although the two levels frequently overlap, pragmalinguistic failure is generally more concerned with grammar and could thus be overcome with less effort (Thomas 1983, 91). In essence, it is the failure to recognize what type of speech act and linguistic force was intended by the speaker, Thomas (1983, 99) states. ‘Speech act’ means performing an act verbally, such as making a request or offering an invitation although not explicitly stated as such (Birner 2013, 175). Force is a closely related concept that expresses what the speaker is hoping to accomplish via a speech act (Birner 2013, 187; Thomas 1983, 93). To exemplify this area of failure: I was told in Costa Rica to never compliment a person’s belongings such as an accessory they are wearing as locals would interpret this as a request for that item and feel obliged to give it away.

Meierkord (2012, 112) furthermore points out that sometimes a corresponding speech act cannot be found in L2 and an inappropriate form is consequently chosen. Information in general is coded differently in languages and this contrast can lead to pragmalinguistic failure. Bohnacker (2010) has studied variations between Swedish and German in regard to where new information is placed in the sentence. She observed a tendency in Swedes to place new information late in the L2 sentence which was atypical for German but common for the L1. While grammatically appropriate, pragmatically the utterances showed what Bohnacker (2010 132, 134) calls “a discourse accent”. In Thomas’ terms, they were transferring L1 elements to L2 and thus failing at the pragmalinguistic level.

4.2.2 Sociopragmatic competence

The sociopragmatic level, rather than focusing on linguistic patterns, is preoccupied with value systems behind form. An example of a failure on this level would be misunderstanding what kind of information could be requested from somebody as well as asking intrusive questions (Thomas 1983,

105). Asking about one's income could for instance be deemed small talk in some countries whereas in others the question would be extremely invasive. In another example, Thomas (1983, 105) mentions that teachers have higher prestige in some cultures than in others and students can violate this hierarchy via linguistic behavior because of different norms. The sociopragmatic level of a foreign language is generally much harder to master than the grammar aspect since it requires a good grasp of the FLcon as well as the reassessment of value judgements linguistically (Thomas 1983, 91, 104).

As an important area of sociopragmatic competence, Thomas (1983, 107) proposes familiarity with the "ground rules" of another language. The concept essentially refers to what is considered general knowledge among the nationality concerned (Thomas 1983, 107). This largely corresponds to "rules of use" described by Johnson as part of 'sociolinguistic competence' (2008, 32). Hence, an anecdotal example from this author can be cited here: in Croatia it is customary to ask "Where are you going?" as a form of greeting, yet, Johnson (2008, 33) was unaware of the custom and grew wary of giving account of his comings and goings. The adequate answer to the question would however be something vague. While this event might fall also under pragmalinguistic failure in terms of speech acts, sociopragmatic failure certainly occurred here due to unfamiliarity with the ground rules of the FL.

Pragmatic transfer and pragmatic failure are significant concepts when discussing language attitudes since misunderstanding speaker intentions can lead to strong attitudes towards other nationalities, as was noted by Thomas (1983, 97). In my estimation, it is unrealistic to expect that these positions would never jeopardize the quality of work in even the highly controlled ATC environment. After all, Cushing (1994, 75-77) attributes some accidents to *a blatant refusal of cooperation*. Interviewee1 (personal communication, December 3, 2017) likewise describes situations where various airline employees were uncooperative based on factors such as status and nationality. Stereotypes – the result of snowballing failed expectations – could easily be a factor undermining collaboration in ATC communications. Regrettably, interculturality beyond word choices has largely been neglected in research concerning aviation. Language attitudes in other environments will be discussed shortly. The policies directing language use will however be addressed now.

4.3 The benefits and challenges of language policy and planning

With the accelerating globalism of today's world, managing the consequent mixing of languages is ever more relevant. Situations where separate languages need to co-exist or communication is dysfunctional call for interference from relevant governing organizations. In other words, language planning and language policy are essential. The goal of language policy, according to Coulmas (2005, 186-187), is to reinforce some linguistic practices while preventing unwanted developments in a context that could be global, national or local. States dictate, first of all, which varieties are used in public spheres such as education and the media (Phillipson 2003, 14); on a smaller scale policy determines for instance the lingua franca used in a multicultural enterprise. The latter context will be shortly examined in section 4.5.

While language policy states the end goal, language planning is the roadmap there. Plans indicate which languages will be used and for which purposes, as well as where each language variety stands in relation to other varieties (Coulmas 2005, 189). These types of decisions are part of status planning, as languages involved in the planning are given varying prestige (Coulmas 2005, 189). An ever-present problem in status hierarchies is the elevation of one variety above another even to the point where the minority language vanishes entirely, as Phillipson (2003, 13) mentions. Yet, granting equal status to several languages does not automatically cause them to thrive – Phillipson (2003) commends, for instance, the co-official status of Finnish and Swedish in Finland whereas local academics are less idealistic (Hult & Pietikäinen 2014).

Corpus planning is an essential part of successful policy but, unfortunately, it can be overlooked causing policy to fail (Coulmas 2005, 195). The aim of corpus planning, essentially, is ensuring that people have the necessary resources for applying the language(s) policy enforces (Coulmas 2005, 195). Implanting a new language, for example, will be unsuccessful if people lack the necessary skills in that variety. Citing vast lack of fluency Phillipson (2003, 12) criticizes the endorsement of English in Europe. One question that the present study attends to is whether objection to the 'English-only' policy simply could stem from poor grasp of English which in turn could stem from poor corpus planning. Status and corpus planning are, as Coulmas (2005, 195) emphasizes, interdependent.

Yet another challenge for language policy is the unpredictability of the process. Even with careful planning there are no guarantees that the goals will be achieved in the end, as circumstances may change abruptly and, so, the policy should be reassessed as time passes (Coulmas 2005, 187). Sometimes policy issues can even contribute to conflict, although complex identity processes and historical factors are usually already in the background and language only triggers larger issues (see

Phillipson 2003, 43). Enough resistance to policy can even overturn initiatives, as the rejection of the English-only policy in the Spanish air traffic control demonstrated. Policy and language attitudes can indeed affect one another and it is thus logical that the latter would now be addressed.

4.4 Language attitudes

The term ‘attitude’ is based on social psychology and was thereon adopted into sociolinguistics in the 1960s (Garrett 2010, 19). Although the concept is somewhat difficult to define (Garrett 2010, 19), Bohner and Wänke (2002, 5) quite sharply describe attitude as “an evaluative response toward an object” which need not, however, be a tangible entity existent in the world. Attitudes are generally thought to operate in three ways: the cognitive, the affective and the behavioral (Garrett 2010, 23). By clearer terms, we respond to the object of our attitude in how we think, our feelings are affected whenever the issue is raised and we might act in ways that demonstrate these sentiments (see Bohner and Wänke 2002, 5).

It is oftentimes the behavioral aspect that makes attitudes so significant, as actions have an influence on others around us. Attitude seems to exist as something invisible strictly in the human mind when we act on it and behavior also makes attitudes scientifically approachable, Hyrkstedt & Kalaja (1998, 346) state. It should however be emphasized that the conditioning between attitude and the consequent behavior is anything but straightforward and studying attitudes overall is a complicated matter (Garrett 2010, 20, 25). Furthermore, all of the three areas of the attitudinal reaction need not always present themselves (Bohner & Wänke 2002, 5). Therefore Garrett (2010, 23) prefers to treat the components as catalysts to rather than the actual subject matter of attitudes.

Attitudes are learned through life experience as well as from our surroundings (Garrett 2010, 22). They exist for a purpose and for this reason learning the “function” of an attitude is a pathway to possibly adjusting a person’s viewpoint, Bohner and Wänke (2002, 6) suggest. Language attitudes have particularly strong identity and ideology functions. It is generally accepted in sociolinguistics today that words build identity (Mesthrie 2011, 151) – in fact the very choice of a language variety is directed by identity (Coulmas 2005, 176; Garrett 2010, 108). Relatedly, Garrett (2010, 21) states that language attitudes manifest themselves in both “input and output” as we not only respond to others but anticipate a certain response from them which motivates our linguistic behavior. Language attitudes thus demonstrate both identity and ideology.

More aspects of language attitudes will be discussed shortly with the countries of interest as specific focus. Before that, however, there are some viewpoints relevant to the air traffic control that

research in other contexts has previously addressed and should be mentioned at this point. Firstly, there are professional fields where neutrality is expected more than in others. However, as Garrett (2010) reviewed research on the fields of law, education, health and employment, he concluded that language attitudes are very much present in these environments, directing the decisions being made. This conclusion is cause for concern and could, furthermore, signal potential for trouble in the aviation industry as well.

Secondly, Dragojevic and Giles (2016) studied how cognitively challenging linguistic material could affect language attitudes. They played extracts of Standard American English as well as Punjabi English to subjects who then had to rate the speakers in terms of competence, social attributes and likability (a technique that is typical to attitudinal studies). They then played the pieces of audio with background noise, therefore hindering understanding even more, and asked for feedback as in the first test. Slower processing speed at the hearer end was generally found to have an effect on listener attitudes and a foreign accent prompted a more negative response (Dragojevic and Giles 2016, 414).

Along similar lines, Dietrich and Childress (2016, 193) have claimed that processing input is considerably slower in a foreign language even when the listener has good skills in the variety. They have also pointed out that the more challenging the communication channel the more simplified must the linguistic variety utilized there be; they refer specifically to the noise distractions in ATC work and the subsequent standardization of language (Dietrich and Childress 2016, 195). Considering that processing speed is hindered in a foreign language, which then could provoke a negative response, and that ATC work is plagued with noise distractions, one could conclude that the air traffic control is fertile ground for language attitudes. Whether these viewpoints are manifested in the actual work, is one question the analysis aims to tackle.

4.4.1 Linguistic identities and ideologies in Spain

Spain at large is a monolingual country. However, several provincial languages are spoken in certain areas. The largest one of these languages is Catalan, the second largest Galician and the least widespread one is Basque (The Guardian 2008). The province of Catalonia has been particularly in focus recently in European media as the long fight for independence culminated in a referendum with overwhelming support for separation from Spain in 2017 – with little tangible change however to follow. Nevertheless, language and identity have been heated issues in the nation for a long time, especially since the collapse of the Franco regime that suppressed minorities (e.g. Muñoz 2000, 161; Coulmas 2005, 194).

It is against this politically loaded backdrop that Iglesias Álvarez (2009) has researched the dynamics of regional and national identities among the processes of globalization. Utilizing conversation analysis, Iglesias Álvarez regards remarks that reveal beliefs about other linguistic groups as well as commentary concerning one's in-group. In general, the subjects showed great appreciation towards linguistic diversity, seeing it as a common Spanish value (Iglesias Álvarez 2009, 93). Further analysis, however, revealed that this attitude might simply have the purpose of presenting tolerance, and people had a tendency to rank the different linguistic varieties with their L1 on top (Iglesias Álvarez 2009, 93-94). The findings echo the author's (2009, 91-92) initial notions that ideologies mainly exist to protect group interests and this solidarity is only strengthened when crisis occurs. Note that attitudes here showed a clear function, in line with the notions of Bohner and Wänke (2002).

A later study by Busse (2017) examines language attitudes in multilingual countries in Europe, including Spain. Her focus is on the sentiments that the English language evokes. While the author's target group is adolescents rather than adults, it should be noted that language attitudes are typically formed early in life (Garrett 2010, 29-30) and thus studying younger people can be beneficial in this field. In contrast to the formerly dominant approach to language learning that has credited motivation to instrumental purposes or those of integration, Busse (2017, 567) leans on Dörnyei's (2009) idea that one's "ideal self" – a desired future identity – guides motivation. This shift in theoretical terms is largely caused by the ever-increasing tendency to use English as a lingua franca among non-native speakers which would make the issue of integration irrelevant (Busse 2017, 567). Dörnyei's viewpoint is, in fact, closely connected to what sociolinguistics has come to call 'identity choices' (especially Cutler 2010) as both concepts strongly point toward the construction of one's identity through language. Intriguingly, these studies focus on varieties other than the subject's L1.

Busse's (2017) main question is whether the demands of the ever-globalizing English affect one's willingness to acquire other languages. One of my main objectives concerning the Spanish respondents in the present study is, interestingly, the opposite: whether possible pressure to be plurilingual in Spain would undermine one's willingness to acquire yet another language: English. Muñoz (2000, 161) points out that the post-Franco period has made the revival of minority languages possible but this process has coincided with the increasing pressure of knowing English for international purposes. It is rational to expect this overlap to influence attitudes.

Busse (2017, 572-573) concludes that young students are very aware of both the prestige and utility of English but they place more affective value to minority languages. In general, the Spanish adolescents deemed English more equal in status with other foreign languages than did the young students in other countries (Busse 2017, 572). Adverse attitudes were also evident, as students understood the necessity of knowing English yet some had negative feelings concerning the language,

and some thought that English is undermining local languages (Busse 2017, 573). Note that Iglesias Álvarez (2009) also found multilingualism to be greatly valued by the Spanish. Whether English is indeed a threat to multilingualism is a question that has prompted a multitude of opinions, with especially Phillipson (2003) showing reservations towards the language while House (2003) has been more optimistic.

I have thus far discussed the issues of identity and ideology in the Spanish context. To conclude this section, I will address whether linguistic ability influences opinions. Lasagabaster (2005, 11) has previously found a correlation between good command of English and positive attitudes towards it. Performance pressure can affect attitudes as well though. Amengual-Pizarro (2018) recently studied negative affective factors in an ESP (English for Specific Purposes) setting at a Spanish university. Astonishingly, she found that the majority of students had considerable anxiety in FL performance with 44.3% at medium level and 26.6% in the “high anxiety” end of the spectrum (Amengual-Pizarro 2018, 149). Areas of FL learning causing unease included oral performance, understanding of speech and taking part in exams. It is noteworthy, however, that most anxiety was related to the setting as students were worried about their achievements in class but showed less concern about talking to native speakers.

Based on the combined findings of both Amengual-Pizarro (2018) and Busse (2017), it would appear that Spanish students are under considerable pressure concerning their academic achievement and their consequent careers. They acknowledge the importance of English but feel unsure about their abilities in the language. Teaching methods were not assessed in Amengual-Pizarro’s study, however, and it is thus uncertain whether they contribute to anxiety (Amengual-Pizarro 2018, 156). In addition, until relatively recently French was the dominant FL taught in Spain (Muñoz 2000, 161) and it could be that the shift towards English has been a slow one in education.

On the global level, a shift that has been taking place is that of English becoming a lingua franca with mainly non-native speakers (House 2010, 363) and norms that are constantly being recreated according to context (Meierkord 2012). This should take pressure off learners as they no longer need to aim towards one ‘correct’ form of English. English as a lingua franca (ELF) in the Finnish context will be the topic of the next chapter.

4.4.2 Finland: toward international English

In contrast to Spain, English in Finland is often considered to have reached second-language status (Jódar Sánchez & Tuomainen 2014, 130). In fact, statistics on language learning from 2016 tell that 99% of Finns in upper secondary education learn two or more foreign languages in drastic contrast

to 28% in Spain (Eurostat 14 January 2019). It is safe to say that Finland is vastly fluent in the English language. Of course having to learn a language does not guarantee fluency, but there is a great deal of exposure in education as well as, for instance, via media (more in Jódar Sánchez & Tuomainen 2014). English is exceedingly visible in the country.

High proficiency might come at a cost: Finnish teaching methods tend to emphasize native-like ability as the goal (Ranta 2004). Perhaps in consequence of these strict standards, research points to critical attitudes towards Finnish-influenced English even among peers (Toivonen 2009; Haapea 1999). Because of the general shift from L2-based use towards ‘English as an International Language’ (or ELF), Ranta (2004) suggests that Finnish education should re-evaluate its teaching methods and steer away from a system that focuses on one ‘correct’ variety of language. Her study shows though that while teachers are conscious of this change, they feel obstructed by current policy and fear that a change in approach would generally be judged harshly (Ranta 2004, 69, 74). Thus the potential for change is attributed to language policy. Attitudes and policy nonetheless shape one another (Garrett 2010, 21) and perhaps adequate resistance could hold potential for educational changes.

Curiously enough, the status of English is often discussed from the viewpoint of Finnish with little attention given to the issue that Finland is a bilingual country. Historically, the independent Finland of today has emerged from under Swedish rule with Swedish having been the dominant language of public life in the past (Hult & Pietikäinen 2014, 2-3). The development towards the now-dominant position of the Finnish language is anything but unremarkable: many Finns freely rejected the prestigious Swedish in favor of the minority language linked to the independence movement (Hult & Pietikäinen 2014, 3). However, if the public held “radical and polarized positions” in mid 1900s as the positions of the two languages were shifting (Hult & Pietikäinen 2014, 3), the dispute did certainly not die out towards the 21st century.

The issue of the position of Swedish constantly re-emerges, typically around the time of political elections when there is a chance for revision. The main question that arises is whether education in the Swedish language should be compulsory (Hult & Pietikäinen 2014, 8-9). This question is even more relevant with the universal importance of knowing English. As in Amengual-Pizarro’s (2018) study on young Spaniards, it is possible that English could undermine young Finns’ willingness to acquire other languages, especially Swedish that is practically in minor position. One’s desired occupation could also determine the preference: Swedish is required for many jobs in the public sphere such as those in education or law endorsement, while a career in business or commerce typically requires good English.

Overall, what from the outside is sometimes seen as a peaceful co-existence of two languages (Phillipson 2003, 67) is a continuing ideological debate (Hult & Pietikäinen 2014) to the linguistic

groups concerned. Swedish knowledge is, likewise, sometimes assumed to be better among Finns than reality shows, which some of the following studies conducted in multicultural business environments will exemplify. It now suffices to say that despite the obligatory Swedish education, Finns generally lack adequate knowledge (Hult & Pietikäinen 2014, 4) and often resort to English instead.

4.5 Multilingual work spaces

Several research projects have been conducted on multicultural companies, especially during and after cross-national mergers. This section will address a few of them. Over fifteen years ago, Vaara (2005, 595-596) et al claimed that research in this area typically focused on solving problems from a practical point of view with little attention given to ideological implications of language use. Coinciding and later research have attempted to rectify the shortcoming they mention. These studies are particularly useful for comparison in the present study as workspaces hardly get more intercultural than the air traffic control. Fittingly, these studies focus on Finland as the context.

Louhiala-Salminen et al (2005) examine two cross-national company mergers, namely, ones uniting Finnish and Swedish employees. One of them, a banking company, initially chose Swedish as the company language but eventually had to overrule the policy in favor of the more widely known English. This shift did little to dispel underlying beliefs about the opposing language group though Louhiala-Salminen et al (2005, 403) found. One of the key findings was thus that a language shift does not automatically lead to a change in employee ideologies.

ELF (English as a Lingua Franca) has been argued to be a linguistic variety with no set of pre-existent norms nor cultural basis (i.e. House 2003; 2010). It is spoken between non-natives and modified for each context (House 2010, 364). Louhiala-Salminen et al (2005, 404) counterargue this alleged neutrality by claiming that ELF is in fact heavily affected by cultural expectations and habits, as their analysis also proves. The fact that cultural conceptions here surpassed a linguistic shift could actually signal the existence of stereotypes –attitudes that reinforce group distinctions and are resistant to change (Garrett 2010, 32-33). These perceptions need not be based on reality: the Swedes in said study largely saw Finns as blunt and frugal with their words, yet, a word count proved their views misguided (Louhiala-Salminen et al 2005, 408, 410).

In addition to ideologies, a reoccurring concept in several studies has been social power (Vollstedt 2002; Louhiala-Salminen et al 2005; Vaara et al 2005; Kulkarni 2015). Language choices can be used, on many levels, to include and exclude speakers who do not share the language variety.

On the macro level this would mean language policies encompassing national or international contexts (see Phillipson 2003 for European issues). The lack of comprehension on a smaller scale can, intentionally or inadvertently, create power hierarchies (Kulkarni 2015) and loss of opportunity (Vollstedt 2002, 95). Louhiala-Salminen et al (2005) and Vaara et al (2005) found that Finnish employees post-merger indeed felt segregated because of their poor Swedish. A crucial problem in the ATC would be the loss of situation awareness among people lacking necessary language skills (Tajima 2004, 464). Above all this would have safety repercussions but some might interpret the exclusion as misuse of power.

Another re-emerging topic in merger studies is that of uncertainty concerning policy. At the management end there is disillusion regarding the expected success of the policies and at the employee end there are misunderstandings concerning the guidelines. The studies of Vaara et al (2005, 608) and Louhiala-Salminen (2005, 403) both demonstrated unrealistic management expectations concerning Finns' capacity in the Swedish language, and the former also reported this as a direct cause for employees' discontent. Vollstedt (2002, 99) attributes poor success of policy to poor language planning; the research mentioned above indeed points to insufficient corpus planning as policy is decided upon before language skills have been properly assessed.

As for the ideological divide that is often existent in intercultural situations, the construction of a common culture is offered as remedy by Vollstedt (2002, 94), who further mentions that the choice of official language is an important building block to the newly shared group identity. Among the subjects of Louhiala-Salminen et al (2005), the process was fortunately well underway: in addition to increased cultural unity, workers also typically accommodated their language use to suit the abilities of the participants in the conversation (Louhiala-Salminen et al 2005, 407). Thus, the stereotypes that were evident in the employee narratives did not hinder co-operation in the end.

All in all, the corporal studies utilized here shed light on many issues that ELF research needs to address. Above all, the ideological connotations not often recognized as part of lingua franca communication should be considered more. Intercultural pragmatics has been prominent in revealing the cultural baggage that every language carries with it and which is so often transferred to a foreign language. ELF research has fortunately started to recognize as well that lingua francas suffer from similar problems that L1s are subject to.

Being aware of cultural residue is something that aviation professionals could also benefit from, by reflecting on the pragmatic and intercultural aspects of their communication. For professional environments, task orientation should certainly be in the heart of English training, as Louhiala-Salminen et al (2005, 419) advice, yet, embedding pragmatic elements should not jube overlooked. Wherever real people go to work real problems occur. Intercultural studies that consider ideological

connotations have yet to become prominent in ATC research. The following chapter encompasses much of the research conducted on aviation communication so far.

5 ROOM FOR IMPROVEMENT: PREVIOUS WORK ON ATC COMMUNICATION BREAKDOWN

Although plane accidents cannot be contributed to one factor alone, language is a dominant factor in these events (Cushing 1994, 1; Tajima 2004, 451; Tiewtrakul & Fletcher 2010; Breul 2013). This chapter will demonstrate that correlation by introducing previous work dedicated to the question. It should be first noted that although problem situations in ATC communication are unwelcome and can cause a great deal of stress, the upside of these instances is that they might pinpoint flaws in present linguistic conventions and prompt necessary changes (Helmreich & Merrit, quoted in Breul 2013, 79). Thus, linguistic research can greatly contribute to creating a safer global airspace.

5.1 ATC linguistic skills

It goes without saying that English proficiency is extremely vital for ATC professionals. However, given the scale of aviation as a business, inconsistencies are bound to exist and taking full control of the proficiency of controllers is an enormous challenge. In effort to combat inadequacies, the ICAO established stricter requirements for European ATC in 2008 (Tiewtrakul & Fletcher 2010, 230), aiming to improve mutual comprehension between the ATC and the pilots they direct.

Despite these heightened expectations, testing for English proficiency in the industry has been slow to follow protocol (Alderson 2010). In fact, when the validity of English testing in aviation schools around Europe was investigated in 2010, there was a great deal of variation in, firstly, which tests were used and, secondly, the measure of concern that was shown about the issue in general (Alderson 2010, 62). However, the survey took place over a decade ago and since then the standardized ELPAC (English Language Proficiency for Aeronautical Communication) test ought to have spread to more prevalent use as guided by legislation.

As an example of the changes in ATC English education, the role of English in the Finnish Aviation Academy seems to have changed over the last couple of decades. My contact at the Finnish ATC, who at the time of the interview had been practicing his profession for 17 years, says that he did not receive formal English education during his training but, rather, learned appropriate communication on simulated flights (Interviewee1, personal communication, December 3, 2017). However, Thomas Karlström (personal communication, March 7, 2018) from the same academy says that English classes are available today for students wishing to improve their linguistic skills while the students' English skills have improved a great deal over the past decade as well. Thus, positive

developments seem to be taking place. The questionnaire in the present study further addresses controller views on their linguistic skills and training.

5.1.1 Code-switching

The co-existence of different languages can prove problematic among aviation personnel. As previously mentioned, code-switching – alternating between two or more languages – can compromise situation awareness for operators in the frequency. This change of pattern in the communication can also lead to failure in the duplication of one utterance into another, as Cushing (1994, 44-45) demonstrates by providing an instance where a Spanish co-pilot keeps switching codes and thus fails to deliver the essence of the message. The problem for the aircraft was fuel shortage, which the co-pilot enclosed to the controller. However, the correct phrase in aviation English would be “emergency” and not uttering that specific phrase resulted in the controller failing to convey the severity of the situation. The co-pilot kept using his native Spanish with the pilot while speaking English to the controller and the lack of resemblance between what he was told to utter and the actual output sadly led to a crash.

5.1.2 Deviation from standard air speak

Here, we will examine the most severe aviation accident of all time. The crash occurred in 1977 in Canary Islands, Tenerife, where communication breakdown resulted in the collision of two large airplanes (Tajima 2004, 459-461). Tajima (2004, 459) describes that prior to the accident the situation at the site was already chaotic due to foggy weather and re-direction of traffic from the Las Palmas airport to Tenerife. KLM Flight 4805 was waiting for clearance for takeoff when the fatal dialogue took place. The controller was giving the pilot instructions on how to proceed after takeoff, yet not giving him clearance. Nevertheless, the pilot thought he was cleared for departure (Tajima 2004, 460).

The crucial phrase that the pilot used for his current status was: “We are now at takeoff”, which the ATC understood as being yet expecting clearance, adding: “Stand by for takeoff. I will call you” (Cushing 1994, 10). The last instruction was, however, interrupted due to radio disturbance and missed by the KLM pilot – the KLM aircraft took off and collided with a Pan American Jumbo Jet, Flight 1736, killing 583 people (Tajima 2004, 459-460).

There were several problems in the exchange between ATC and the pilot. Firstly, the pilot was deviating from the standard phraseology he should have used to describe his position and, due to this ambiguity, the ATC did not grasp the actual meaning of his words (Cushing 1994, 9; Tajima 2004, 460). Secondly, the ATC operator gave the KLM pilot post-takeoff instructions which was highly unusual and untimely (Tajima 2004, 460). It should furthermore be noted that the exchange happened between different nationalities and non-native speakers of English: a Spanish ATC operator and a Dutch pilot. According to Tajima (2004, 461), the pilot could have been “code-mixing at a syntactic level” when using the ambiguous non-standard phrase. This is also known as linguistic transfer.

Non-natives are, however, not the only ones prone to deviation from standard linguistic forms – natives can in fact take an excessively relaxed approach to their language use, thus being too ambiguous in their word selection. Cushing (1994, 41) reports an instance where the controller instructs the pilot to “Squawk 1735”, to which the pilot responds: “Squawkin”. Although no accident followed, the refusal to offer a proper callback as a signal of understanding could potentially have fatal consequences. On another occasion, the hearer failed to apply phraseology when interpreting a phrase. In ATC English the word ‘hold’ means one should stop what they are doing whereas in casual English it does not necessarily signal this; the difference of application led to an accident when the pilot continued on his course of action instead of waiting to land (Cushing 1994, 11).

Nevertheless, casual language skills certainly have a place in ATC communication – in fact they could be what salvages a situation when no standard phrase is available (Dietrich & Childress 2016, 193). Just as a second language might fail to express what is clear in one’s L1, ATC English is flawed in what it can convey. Casual English is often, in fact, more challenging to master than phraseology (Louhiala-Salminen et al 2005, 407).

5.1.3 Pronunciation as a challenge

Tiewtrakul and Fletcher recognize (2010) the existence of regional accents around the world as a major factor in miscommunication. In fact, they point out that the likelihood of trouble increases when both parties are non-native speakers and that linguistic testing in the aviation industry is not helpful in alleviating this problem as it does not assess dialectal factors (Tiewtrakul and Fletcher 2010, 229). As for non-natives communicating with native speakers, tsmalöhey tend to struggle especially with the pace of communication (Tiewtrakul and Fletcher 2010, 230). Differences in the phonetic alphabets between English and one’s mother tongue can likewise cause difficulty, Tiewtrakul and Fletcher (2010, 231) as well as Breul (2013, 74) note.

Hindrances in understanding result in increased reliance on context rather than the linguistic form for non-native speakers (Tiewtrakul and Fletcher 2010, 231). This could in turn produce problems as knowledge of context in ATC communication is limited and close observance of linguistic form is the key to situation awareness. Over radio transmission there are, for instance, no visual clues such as facial expressions and body language – crucial factors in communication (Piskorska & Walaszewska 2012, 4) – to aid interpretation.

Strong native accents are also a challenge for those unfamiliar with the conventions of another variety of English. Helmreich and Merritt (1998, cited in Breul 2013, 79) describes an instance where an Australian on-flight staff member uttered “Mayday” over the radio transmission, which gripped the attention of ATC staff who kept waiting for further information. The meaning of the phrase was, however, concluded to be “Mode A”. This instance led to the adoption of the code ‘Alpha’ standing for ‘A’ (Helmreich and Merritt 1998, cited in Breul 2013, 79). Fortunately, the alphabet of ATC English is entirely coded today.

5.1.4 Varying speech practices

Culturally different habits and speech practices can also lead to problem situations. Politeness is one aspect of language that takes different shapes around the world (Breul 2013, 79). For instance, Chinese culture places great importance on keeping peace in the work environment, Liao (2015, 195) states. Interpersonal conflict would thus be considered a threat and errors easily go unreported (Liao 2015, 197). This could greatly compromise safety.

Problems can also occur based on status differences which have previously been found to affect, at least, cockpit communication (Fischer & Orasanu 1999). The ATC staff member I interviewed for the study seconds this notion (Interviewee1, personal communication, December 3, 2017). According to him, the ATC humorously talks about “a cap angle” among the cockpit: if one is much higher in status, that might hinder the ease of conversation between the two. Borins (1983, 18) also discusses contempt that some pilots have toward ATC staff as they consider themselves higher in prestige. In addition, pilots can be persistent in following the technical conventions of their country of origin rather than those of the host airport (Interviewee1, personal communication, December 3, 2017).

5.2 Extralinguistic factors in air traffic control

To conclude the section on language-related problems, it should be noted that extralinguistic disturbances complicate ATC work as well. Weather is one apparent factor in the functionality of air traffic, not just for pilots who cannot safely operate a plane in extreme conditions but also for the tower where controllers need adequate visibility to keep track of traffic and handle transfers (Wickens, Mavor & McGee 1997, 35). Work hours are also demanding for aviation professionals, as are changes in the intensity of traffic. Interestingly though, Borins (1983, 15) attributes more problems to boredom stemming from lagging traffic rather than the haste of rush hours. The author (1983, 14) also points to the sometimes contradictory expectations of safety and efficacy as sources of additional pressure for aviation professionals, on top of which they know that all of their exchanges are being recorded for possible future analysis.

Moreover, the aviation technology, although highly developed and frequently modernized, does not always work up to the standard that one might expect (Wickens, Mavor and McGee 1997, 44), and the cooperation of man and machine is certainly not seamless (Wickens, Mavor & McGee 1997, 17). Humans can, in fact, depend on automation either too much or too little (Breul 2013, 83; Wickens, Mavor and McGee 1997, 19). Too much automation in the aviation processes might undermine the ability of humans to control challenging situations (Wickens, Mavor and McGee 1997, 17).

Human weaknesses such as fatigue certainly add further challenges to the work (Tajima 2004, 459), as do the overlap of tasks and auditory distractions (Shorrock 2007, 897, 899). In addition, the recent job actions, the consequent strikes as well as the Covid19 complications throughout Europe have likely been the cause of unusual stress levels. These are issues that everyone in this line of work, regardless of their linguistic background, might struggle with.

Language use, especially between the cockpit and the air traffic control is, nonetheless, a dominant problem in aviation. Regrettably, the issue remains despite the high degree of standardization of aviation English around the world.

5.3 Past language policy issues within the ATC: Canada

Little research is available on language policy conflicts in aviation environments. However, a past conflict of Canadian ATC between those against and those for bilingual policy was recorded by Borins in 1983. The findings of the book will be discussed here as they address many aspects of making and responding to policy that are relevant to the current study. The recent Spanish ATC

conflict due to the English-only policy raised very similar issues despite the time elapsed between the two events.

Like Finland, Canada has two official languages: English and French. As in both Spain and Finland, the demographics change remarkably from one area to another, and the use of French natively is mostly concentrated on the province of Quebec which is the premise of the crisis in question here. The policy issue first arose when aviation personnel's pursuit of using French in the area was ill-received, which eventually resulted in a strike among pilots in favor of French and a subsequent strike against bilingualism (Borins 1983, 1). Prior to these events, the post-war aviation in Canada had been dominantly English and although French speakers were part of the industry, fluency in English was required of them and many failed to enter aviation school due to this obstacle (Borins 1983, 21, 24). However, with the increase in francophones within the ATC, discussions on the policy concerning the French language became unavoidable (Borins 1983, 24).

In practice, there had already been issues on both sides of the linguistic divide. The French-speakers often failed to repeat instructions in English although this was officially required for call-backs, and sometimes ATC operators would have to switch to French to accommodate pilots lacking English skills (Borins 1983, 22, 23). The anglophones in turn based their arguments for the English-only policy on safety but in reality were also in fear of no longer having the advantage for job opportunities because of language, as up to the conflict the most prestigious positions had been held by anglophones (Borins 1983, 24-25).

The process that led to the end of the conflict was complex with political discussions, studies concerning the safety of bilingual ATC as well as the mending of the strained relationships between the two language groups. To address the safety concern, an extensive string of simulated flights was executed and, in the end, it was concluded that applying an additional language did not hinder the efficacy of ATC work although the results were received with criticism (Borins 1983, 202, 208). Interestingly, both sides of the argument kept bringing up safety concerns (Borins 1983, 25), which is the key question in similar disputes today and unlikely to be fully resolved to the benefit of either side of the argument.

Air traffic control in Quebec eventually embraced bilingualism and remains so today. Despite the resolution to the crisis, Borins (1983, 218) raised a few issues in the aftermath. One was that there would be a shortage of capable bilinguals entering the aviation industry. The other one was that francophone pilots might face problems when flying to English-speaking airspaces. He expected both issues to be resolved in consequent years – a broader analysis might address whether those expectations have been met.

The Canadian conflict is intriguing in the way it relates to the one in Spain – and likely innumerable other disputes that have been evoked by language policy in contexts outside aviation as well. It should be noted that these types of conflicts are always multilayered, encompassing aspects of politics, identity, language rights as well as linguistic skills. A telling example of the complexity of the issue is the Canadian English speakers arguing for safety and thus disguising their concern for being undermined in the job market. Furthermore, a conflict on a larger scale is often already in motion when micro level conflicts occur. In Spain this could mean minority groups struggling to make their voices heard. Perhaps due to different history, Finland has thus far not faced a similar crisis concerning English use in ATC – probably also because they have not seen it as a considerable linguistic challenge. Overall, there are larger forces driving ATC conflicts than is apparent at first glance.

6 RESULTS AND ANALYSIS

A questionnaire assessing air traffic control language use and attitudes was distributed to the airports of Helsinki-Vantaa in Finland and Málaga in Spain early in 2019. The Spanish part of the analysis was originally destined for El Prat in Barcelona but due to unsuccessful attempts of contact Málaga participated instead. Since a much larger number of replies was collected in Finland – 27 in contrast to 11 in Spain – the analysis was extended to email interviews with two respondents from each airport. The questionnaires and the interviews are identical between the countries, except for the question on the participant's first language(s) where different options apply. I will first introduce the survey findings, after which the interviews will be discussed.

6.1 Survey findings in Málaga

As implied by the modest number of replies, the Spanish were somewhat reluctant to participate. Requests for the distribution of the survey, in the first place, were sent via several routes but most airports turned down the opportunity to contribute. In fact, when results began to appear, it was still unclear which airport they were from and only contact with the prospective interviewees revealed that the survey had eventually reached Málaga. Despite the smaller number of participants, the results, in contrast, were very informative in content. The replies will now be examined. Questions with quantitative results are presented together and examined first. Qualitative results from freeform questions will follow. For the list of questions included in the survey, see Appendix 1.

6.1.1 General demographics

Most participants were between the ages of 30 and 45. Two were between 46 and 55, one past 56 and none younger than 30. As for the length of work experience, none were new to the profession: three chose 6-10 years, an equal number past 21 years and five had between 11 and 20 years of ATC work behind them. Most respondents have multiple tasks at work, as is typical for controllers; 11 chose tower control as their expertise, ten also ticked radar control, and two opted for other tasks that were both specified as approach control. None of the respondents direct traffic en route.

6.1.2 Language demographics

All 11 participants speak Spanish as their first language – this result does not however exclude the chance that some could speak others just as fluently, as the question design only allowed for one option. Thus, the respondents could in reality possess language skills that share equal status with Spanish. However, as Iglesias Álvarez (2009) has found, minority language speakers tend to identify very strongly with those varieties and, based on this notion, it is likely that all 11 respondents come from areas where Spanish is indeed the dominant language.

As for languages used at work, everyone chose ‘English + native language’. Likewise, all chose this combination as the preferred choice for the languages they would prefer to speak professionally. It hence follows that Spanish is widely used in the Málaga ATC, although, when asked about the English-only policy, two participants were in favor of the restrictions it would place. On the contrary, six controllers opposed the policy while three were neutral or undecided. Based on the controversy raised by the 2018 initiative, it is no surprise that the majority would similarly oppose the ruling in the survey, but it is noteworthy that some did see the benefits of prohibiting English.

Four participants were exceedingly familiar with legislation concerning language use at their workplace. This is likely due to personal interest that was perhaps prompted by the recent ATC language policy crisis, as not everyone shared this level of knowledge – seven knew only the parts that concerned their own language use. It would be fascinating to discover what motivated the four controllers to take interest in studying the protocol, but the survey does not address this, and it is entirely possible that the controllers’ work requires extensive knowledge of laws.

The final multiple-choice question assessed the level of confidence the participants had in their language skills when they graduated from aviation academy. Ten controllers thought they had adequate language skills then, while one left the question unanswered. There was a flaw in the question design however: it was not specified if English was the language concerned and whether the mentioned skills included phraseology, casual language or both. Regrettably this shortcoming only presented itself in the answers and could not be modified at this point. Fortunately, the freeform answers provide essential information concerning similar issues.

6.1.3 Deviation from English and standard phraseology

In question 7, the ATC staff were asked when they choose to deviate from the English language. A great majority (7) used Spanish regularly with their countrymen. The choice of language was largely dictated by the recipient, as participants use their native language 1) when there are only Spanish

speakers in the frequency 2) with ground services and 3) with local pilots, some of whom lack adequate skills in English. The issue of situation awareness arose several times as the participants acknowledged the necessity of a common language when foreigners enter the frequency.

Quite predictably, unusual and risky situations were also mentioned as reasons for speaking Spanish. More specifically, one controller stated “Anomalous situations in which speed and precision are vital” as contexts for native language usage. In line with the conclusions of Dietrich and Childress (2016, 193) who referred to longer processing times in FL, another one said: “It will always be much more clarifying if both speakers use common native language”. Overall, there was a strong preference for Spanish when applying English would not be deemed vital.

As for deviation from phraseology, similar reasons were offered. Many matched non-standard communication, again, with unusual situations often outside the scope of phraseology. Situations outside traffic management are also behind casual approach to language. Greetings, for instance, were recognized as not part of phraseology as was discussing football scores for one participant. Finally, ground services, of course, communicate in a less controlled manner, as do medical services and the police, all of whom were mentioned in the responses.

6.1.4 Foreign languages outside work

Four participants listed English as a language they also use in their spare time. One respondent additionally uses Italian for familial reasons and is thus likely fluent in the language. Another participant listed family as a reason for using foreign languages but did not specify which language was in question. Three said that they use English with friends and three listed spare time activities as circumstances that require English. One of them did not elaborate which “leisure” activities this includes, but another listed “movies, books and music”, and another mentioned “Tv shows and movies” as well as “PC games”. The latter in fact added that he or she prefers entertainment in the original English form. In Spain it is common practice to add voiceovers to foreign movies, so, this is an interesting choice that could imply a willingness to improve language skills or perhaps an integrative orientation towards English speakers. Another respondent in fact specifically expressed a motivation to maintain his or her linguistic skills via leisure activities.

6.1.5 Reasons for attitudes towards English-only policy

When asked about the reasoning behind opinions concerning the proposed ban of Spanish in ATC, many controllers cited safety. Speed of operations was another factor that was thought to improve with native language. This claim would once again be supported by the fact that cognition slows down with the switch to a FL (Dietrich and Childress 2016, 193). One controller emphasized that some situations truly require a quick solution and opting for Spanish would thus be beneficial.

Improved situation awareness via Spanish arose several times, which is interesting, since the same reason is often mentioned as a justification for English-only. Then again, many participants had previously stated that they would only resort to their mother tongue when everyone in the frequency was Spanish. Yet, this is a telling response, as it implies that English is generally seen as rather taxing.

Ground services and VFR³ pilots were listed as among those who would not know enough English to effectively communicate in the language. This notion calls to question how much of the English-only policy was clarified to the ATC personnel when it was first announced: it is doubtful that communications outside the usual scope of ATC communications would be required to be conducted in English. If so, the requirement would certainly put a strain on local airport staff and pilots who have not previously needed English in their work or upon flying as a hobby. Perhaps with a better explanation of the terms of the policy the ensuing crisis could have been alleviated.

One respondent seemed to have a thorough plan for successful policy. S/he suggested the following regarding the English-only approach:

I basically support it, almost 100%, but I'd consider adding up [sic] a few exceptions: 1 Local vfr or unskilled pilots: using Spanish could help them understand at once (objectively, that happens). 2 Unusual situations where not aeronautical [sic] language is not strictly needed. 3 Situations [sic] where we believe it could help overall safety. And, in all theses [sic] scenarios, I'd include all needed explanation to English speaking pilots on the frequency in order to keep their situational awareness up to date.

Another one said: "I think that using the common sense, within some rules is always better than banning policy." This controller, in principle, opposed the policy. Only one respondent fully favored the restrictive policy, citing the same reasons the objection had: safety and situation awareness. Notably, this person also uses English outside work with family and might have a rather open attitude concerning the language.

³ VFR refers to 'Visual Flight Rules' that some pilots operate with whenever weather conditions allow it. Unlike in commercial aviation, navigation is quite independent and little communication with the ATC is required. Source: Phoenix East Aviation, n.d.

6.1.6 Experiences with problematic language

In question 14, the participants were given an opportunity to share experiences on problems evoked by language at work. This question prompted some of the most informative replies in the survey. Overall, the reported problems were remarkably similar to previous accounts of risk situations (e.g. Cushing 1994; Tajima 2004). Four participants reported no experiences and one chose not to answer.

Two controllers cited colloquial English as a source of trouble. The relaxed approach that native English speakers apply to their work has certainly received criticism before (e.g. Cushing 1994, 41). One individual explicitly referred to the British accent as challenging to understand – despite his long career in ATC. This controller however does not use English in his or her spare time, although it is noteworthy that even with constant exposure to the language, individuals might get accustomed to a certain type of accent and struggle with another. Movies and TV are, for instance, dominated by American accents.

Unusual situations that require longer conversations outside phraseology were found to be challenging for some respondents. It was not, however always specified whether unclear situations were handled via English; trouble could in fact simply emerge from poor sound quality in some cases. One respondent in fact criticized the quality of voice transmissions, adding that the numbers three and six are particularly challenging to convey over radio. Sometimes, due to challenging language or poor voice quality, several repetitions are needed to make sense of a situation, as one participant pointed out.

Instead of personal experiences, one controller shared a summary of secondary narratives from pilots whose understanding of a situation had suffered due to language. More accurately, the pilots complained that the ATC were using Spanish which made it impossible for them to make sense of the situation. The nationality of these pilots was not enclosed though. What is curious here, is the choice of this participant – opposing the English-only policy – to share an anecdote that would, in essence, support the restrictions.

6.1.7 Propositions for linguistic improvements

In question 16 the respondents were asked for ideas on how language skills within the ATC could be improved. The participants were very resourceful and offered a variety of options. Out of the ten that replied with suggestions, not one stated that improvement would be unnecessary.

Several respondents thought that the employer had the responsibility of ensuring proper language training for their workers. They likewise criticized current or past training practices. One controller shares:

They have given us access to online english [sic] courses, but you have to do them on [sic] your spare time. When you are working 5 out of 8 days, sometimes 6 out of 8 days, the last thing you think about is getting home sit [sic] on the computer and attend english [sic] lessons to improve your working skills. You prefer to do other things. If this [sic] classes where [sic] part of our monthly training we [sic] probably be more prepare [sic] to use english [sic] on [sic] every work situation.

Many controllers were specifically unhappy with the online courses offered to them as these were 1) poor in quality 2) outside work hours and 3) less effective than real life practice. Of on-site training, several options were contemplated, including workshops focusing on risk situations, face-to-face interaction, as well as staying abroad with visits to ATC premises included in the curriculum. The respondents' own inability to effectively handle emergencies arose repeatedly and the controllers hoped to receive specific help to improve communication in these situations.

Considering that many participants would readily participate in further English training, it is apparent that they recognize a need for improvement. One operator clearly stated this need, lamenting that his or her skills had greatly deteriorated since graduating from the aviation academy. It is rather concerning how many participants thought their language skills are inadequate, yet, there is a strong motivation for learning. It would be vastly beneficial if ATC management heard these suggestions and arranged the requested training. Perhaps with more confidence in their proficiency, the controllers would be more open towards an English-oriented policy.

Finally, some respondents once again raised the issue of code-switching between standardized and everyday language. One respondent strongly advised against casual language use, while another one stated that “just politeness and good manners can be even more helpful than other language skills or standard phraseology”.

6.1.8 Final words

Finally, the participants were given a platform to share any relevant information or views concerning ATC language. Out of the six that answered, two again pressed the significance and necessity of continuing English training. One wished that the employers would offer assistance and support in this effort. Another controller recognized that improvement must be made but, at the same time, that progress has been made over the past decade or so. Lastly, one person advised that “Whatever

measures are taken, a transition period would be recommended”, again drawing attention to the fact that successful policy is the result of careful planning.

6.2 Survey findings in Finland

The Finnish participation rate, with 27 responses, was considerably higher than the Spanish equivalent. Getting the questionnaire to the Finnish ATC was, however, challenging, as there was a job action in progress at the time the survey was supposed to be sent out. Fortunately, the right channel was eventually found, and the survey produced a good number of answers. The layout of the analysis will be identical to the one concerning Spain starting with the statistics and with freeform answers to follow.

6.2.1 General demographics

Likely due to the larger number of respondents, the Finnish staff covers a wider array of age groups and spans of work experience. Most Finnish respondents nonetheless fall under the age groups between 30s and 50s; 17 are from 30 to 45, eight are 46-55 while just one is 18-29 and one 56 or older. The majority have long careers in the ATC: 14 have 11 to 20 years of work experience behind them and eight have been in the ATC for 21 or more years. Unlike in Spain, there are also beginners, as two have been working between 1 and 5 years. Three have been working in the field for 6-10 years.

As in Spain, most controllers list tower and radar control as their expertise with 21 ticks for the former and 17 for the latter. There are also six en route controllers. Additionally, tasks in the ‘other’ category were listed by five people, including supervisory positions and one to two language proficiency assessors – one was simply listed as ‘assessor’ with no specifics given but is likely to refer to the same task listed by the other participant.

6.2.2 Language demographics

In addition to the 25 Finnish speakers, there was one Swedish speaker and one Dutch speaker. The Swedish speaker is likely bilingual as is usual for Finland’s Swedes, but the Dutch speaker appears to be an L2 Finnish speaker. It is apparently not unusual for the Finnish ATC to have non-Finns as part of staff – Karlström (personal communication, March 7, 2018) from the academy previously

mentioned that one of the current students was also a foreigner and the whole class would hence use English instead of Finnish.

For languages used at work, almost all listed English and native language, but the Dutch staff member also listed Dutch and one stated that s/he only uses English. For the preferred language(s), the results were the same. For opinions on the English-only policy, there was quite considerable variation. Compellingly, the vast majority (15) supported the restrictions of other languages, in contrast to the Spanish majority that resisted the policy. Three Finns objected the policy and nine were indifferent or undecided. Regarding familiarity with the legislation on ATC language use, 19 knew the parts relevant to their work, seven had extensive expertise and one, interestingly, stated that they were entirely uninformed.

Finns were mostly of the opinion that they graduated from the academy with sufficient linguistic skills. Two, however, did not share this sentiment. This finding raises the question, whether ATC language education is adequate or whether these two respondents did not fully seize the opportunities for the training that was offered to them. Apparently language education is available upon request (Karlström, personal information, March 7, 2018), but it is the responsibility of the student to request this extra training.

6.2.3 Deviation from English and standard phraseology

When asked about deviation from the English language, Finns did not differ much from the Spanish. Finns often speak their native tongue with colleagues, Finnish-speaking pilots as well as ground services. A lot of times the use of Finnish is pilot-initiated, while, sometimes, it is prompted by poor English skills. Especially private/VFR pilots as well as the military struggle with English, the ATC workers state. Unexpected or complicated situations were once again mentioned as the rationale behind native language use. It was also specified once that standard phrase is not always available or necessary. Additionally, the Dutch participant said that s/he would sometimes chat with his countrymen in the native language.

Deviation from phraseology was usually attributed to necessity: unexpected or unusual situations where standard phrases do not exist or would not effectively solve the situation motivate a casual approach. Other reasons included phone calls to nearby countries, commentary on amusing occurrences as well as offering multiple options for a pilot's course of action when time allows this. Reasons listed here largely follow those stated by the Spanish ATC.

6.2.4 Foreign languages outside work

The Finnish respondents listed a wide range of languages that they utilize in their spare time, although not everyone uses foreign languages. English and Finnish was a common combination for the respondents. Swedish was the second-most cited foreign language, while Norwegian was also listed from the group of Scandinavian varieties. German, Dutch (although as native language) and Spanish were mentioned as well.

One respondent spoke an impressive array of languages: Finnish, English, Swedish, French and Russian. For motivation s/he simply stated: “Languages are interesting”. Perhaps correlatedly, this respondent was in favor of the English-only policy. It is possible this attitude was prompted by an international focus and thus a readiness to use foreign languages whenever possible. This person seems to be using languages for the mere pleasure they provide.

Travelling and communication with foreign friends were common reasons for FL usage. Hobbies and family – Norwegian as L2 and English with relatives in Switzerland – were also mentioned by some. Examples of spare time activities included reading, gaming, TV and movies. Overall, many Finns seem to be comfortable in intercultural environments, although it should be said that eight respondents did not reply.

6.2.5 Reasons for attitudes towards English-only policy

Situation awareness was a commonly cited justification for English-only policy, although once again, safety was mentioned on both sides of the argument. Some respondents had rather strong opinions on why English should be applied in aviation; one offers historical reasons:

One common language is necessary. English was chosen a long time ago, probably because pioneering aviation was born mostly in english [sic] speakin [sic] countries and of course, the international status of strong british [sic] commonwealth on [sic] those times.

Another one stated the global language as “an obvious choice” whose position “as an ATC language is pretty much the same as UTC time... is in time settings”. Again, there were some willing to accept the policy with some exceptions, such as the permission to use Finnish with other ATC personnel and ground services. Additional justification for a monolingual policy in one controller’s opinion was “better movement of labour” when English is the language shared worldwide.

Of those opposing the policy, one reasoning stood out:

Finnish and Swedish are the official languages in Finland, not English. You cant [sic] demand english [sic] from people who has [sic] an aviation [sic] as a hobby.

This respondent, despite being a Finnish speaker who does not speak foreign languages outside work, felt the need to defend the status of Swedish in Finland. As an en route controller, s/he constantly speaks to private pilots with poor English skills, so, this might affect the strong view. Another controller was also doubtful that some aviation personnel could effectively communicate in English, while another one speculated whether there is need for a monolingual policy “in a small country like Finland”. One participant had skipped the question altogether.

6.2.6 Experiences with problematic language

What was most striking about answers concerning linguistic troubles at work was Finns’ tendency to signal out specific nationalities: Russians and Chinese (or East Europeans/Asians in some cases) were criticized repeatedly. Interviewee1 (personal communication, December 3, 2017) also previously mentioned these linguistic groups as problematic to communicate with. Complex conversations, with the example of explaining “snow removal”, were found especially challenging with pilots from these countries. More generally, Finns kept alluding to foreign pilots with very limited English beyond phraseology and, at times, strong accents. Native English accents were, nonetheless, also found difficult by one participant.

One respondent pointed out that linguistic trouble is not limited to foreign languages, as communication in general can result in a breakdown. This notion echoes the premises of pragmatics which assumes that in principle any phrase could be misunderstood. Along similar lines, this participant cites that misunderstandings are usually “the result of an assumption”. This controller seems to be highly aware of the cognitive challenges of communication in general. Shorrock (2006) also names false expectations as one major problem in ATC communications.

Nevertheless, there was some highly optimistic commentary in this section, as some participants emphasized that there is always a way to solve problem situations somehow. One way to do so would be asking for help from colleagues or the other pilot in the cockpit. Another one prefers to refer to “challenges” rather than problems. Yet another participant says – in contrast to others’ criticism – that Russians nowadays speak better English than they used to, while Chinese are still challenging to talk to.

While this question provoked a good deal of examples, there are a few controllers who claim to not struggle with language at all. Six have not answered the question. Yet, one controller has “daily” troubles concerning languages, although most of these situations are minor in importance. Nonetheless, it is somewhat concerning that pilots flying internationally still lack adequate skills in the globally shared variety. Once again it becomes clear that standard phraseology is by no means sufficient in ATC communications.

6.2.7 Propositions for linguistic improvements

There was a lack of consensus among Finns on whether linguistic skills in the ATC are adequate. Some thought that their personal skills as well as those on a larger scale were where they should be. One in fact clearly stated that s/he would not have any interest in further linguistic training. Some also said that ensuring one’s skills are sufficient should be his or her own responsibility, and that English is or should be learned outside the academy. These comments are a drastic contrast to the Spanish responses.

Several people nonetheless mentioned that courses would be beneficial and, unlike among the Spanish, computer-mediated training was not found disagreeable. Some thought that language learning, or the entire ATC training, should take place abroad. As for the contents of language courses, casual English training was desired over phraseology revisions, as standard utterances are learned quite extensively in both school and work. One participant added that education in “flight theory in English” should also be part of basic training.

One controller was discontented with the requirements of and maintenance of English skills among the ATC, stating that the demanded level 4 on the ICAO scale is simply not sufficient for the work. S/he added that level 5 should be the general standard and if there are shortcomings, additional language training should be arranged. Additionally, the participant said that language training only has a small role in basic training.

Another respondent had yet more to say about policy:

If there was a regulation that you could only speak english [sic] at work, that would improve everyones [sic] english [sic]. It could also make things more unsafe. So my question is, which one is more important? English or safety?

This controller views the issue from both sides of the dispute. The response could hint at discontent concerning forceful application of English in the aviation industry. It is possible that, in his or her

opinion, monolingual policy is pressed for the sake of the language rather than for safety reasons. On the other hand, the policy would improve skills in time, but before that, it would compromise security.

Finally, there were differences in controllers who discussed language skills from a personal point of view and those who focused on a larger scale. One participant had a more global orientation as s/he wished that linguistic skills were equally adequate around the world, which would ease communication between different nationalities. This viewpoint was not raised on the Spanish side.

6.2.8 Final words

In the free speech section, many participants again raised the issue of language education. Many commented on the basic training in the academy, which could be improved in a number of ways: by offering more training in oral communication rather than writing, including technical vocabulary in the curriculum, as well as by exercises concerning emergencies. As the last wish was seconded in the Spanish answers, it seems that emergency protocol is generally a matter of concern to the participants. This is, naturally, alarming from the safety point of view.

One employee lamented the fact that today's language training was not available in the past.

Back in the day when i [sic] graduated english [sic] was not so highly taught at the academy. Nowadays the courses are more dealt in english [sic] and the proficiency is getting better day by day. But for us old geezers it has always been and looks like it will also be so in the future, mostly about our own efforts in making our language proficiency better. Personally I feel my english [sic] proficiency deteriorating every year even though I used it every now and then.

Despite the improvements that have been made in the linguistic training of ATC, older generations have not had the privilege of enjoying them.

Making future employees more aware of "human factors" that complicate communication was another factor that was thought important to training. This point of view echoes what the works of Cushing (1994) Wickens, Mavor and McGee (1997) have emphasized in the past: understanding the complexity of linguistic exchanges is highly important to aviation professionals. Fortunately, many workers acknowledged the incredibly important role that language has in safety. One says:

We work with speech, language is very important on [sic] our line of business. A wrong word could cause a big problem. Understanding between ATC's [sic] abroad and what is more important, with pilots is our number one priority

Finally, one respondent once again returned to policy, suggesting the following:

After switching to use only english [sic], there is a risk in the beginning of how non-native english [sic] speakers understand what is written. After time, local practises and perceptions will adapt and harmonize itself [sic]. All explanations of "what it means" e.g. on documentation of working methods should be given in english [sic], not in native languae [sic].

Like the Spanish ATC, Finns were quite resourceful in offering solutions to problems. These are voices that should certainly be heard as they can help make ATC training more effective. Furthermore, any insecurity concerning linguistic skills should raise the question: what could be done to give professionals better tools for their work?

6.3 The email interviews

While the survey focused mainly on the English language and the related policy, the email questions were designed to concentrate more on multicultural issues. The questions were identical between the participants. To avoid confusion with Interviewee1, the interviewees here will be referred to as Participants with a corresponding number according to the order of replies. I will once more start with the South European participants.

6.3.1 Spanish views

Participant1

1. How do you find interacting with other language groups?

Good. Sometimes there are problems understanding each other because of the accent or when we use none standard [sic] language, but when we talk using aeronautical phraseology it's very simple.

2. Do you enjoy interacting with different nationalities?

It's not bad.

3. Why did you choose to become an air traffic controller?

Someone told me it could be a good job for me, I took the exams, pass everything and became one. It's one of the best things that have ever happened to me.

4. Did the multicultural aspect of ATC work affect your decision to become a controller?

No, but I enjoy to work for pilots that are from other countries.

5. Do you find talking to your own nationality different from interacting with foreign language speakers?

Spanish pilots are sometimes a bit rude compare with foreign pilots, but I think it could be because of the confidence the language gives them. When possible I try to talk to all of them in english.

Apparent in Participant1's replies is the enjoyment ATC work and its cross-cultural aspect offer him/her. Notably, in the survey, this ATC controller mentioned having hobbies involving the English language as well as a desire to further improve professional language skills. As for cultural notions, the controller interestingly mentions his or her own countrymen, claiming them to be somewhat impolite in comparison to other nationalities, adding that said attitude might be due to linguistic capabilities.

The remark might however also be an indication that different cultural conventions concerning what kind of communication is considered polite are at play. Spanish language tends to be rather direct, whereas English, for example, typically contains longer expressions to signal politeness. It is of course fascinating that a Spaniard would assess people from his own nation as "rude", as this type of notion would be more plausible coming from a foreigner. Then again, Participant1 seems to be rather invested in the English language, having mentioned an inclination towards it in the survey already. Nevertheless, further explanation of the sentiment discussed here would have been useful.

Participant2

1. How do you find interacting with other language groups?

I find it very interesting and in some cases really challenging.

2. Do you enjoy interacting with different nationalities?

Absolutely YES.

3. Why did you choose to become an air traffic controller?

Since I was a kid I was amazed with aviation world. I've started to work as a Check-in agent and Flight dispatcher and then I've found the opportunity to become an ATC.

4. Did the multicultural aspect of ATC work affect your decision to become a controller?

I would say no. The main reason was that becoming an ATC was to reach the top of aviation jobs (pilots apart) without spending a huge amount of money. (That was years ago in Spain).

5. Do you find talking to your own nationality different from interacting with foreign language speakers?

Yes of course. Beside the language barrier, every nationality has its own "characteristics" flying. E.g. Italian and Spaniards are very "latinos", Germans are extremely professional, Finnish are very flat, I mean, on the radio they sound exactly [sic] the same if they are happy, sad or angry, English crews on the radio are sometimes like having a beer on a Irish pub...

Similarly to Participant1, Participant2 enjoys the international nature of ATC work, although this was not a factor in his or her decision to pursue said career. Rather, Participant2 expressed an inclination towards aviation in general. S/he does, however, see clear distinctions between different nationalities in the field. What the participant means with Italians and the Spanish being "very 'latinos'" remains unclear, though. Interestingly, one would have to access another stereotype – that of latinos – to understand the qualities of the previously mentioned nationalities in Participant2's view.

Finns, the other nationality represented in the current study, are allegedly monotonic in their exchanges whereas commentary regarding the British seems to suggest that they are somewhat informal in the respondent's opinion, as the setting Participant2 mentions as an appropriate context for the kind of communication Englishmen practice is a casual one. Interestingly, pilots from the UK were previously claimed to be difficult to understand in the survey answers. Perhaps Participant2's observation here offers an explanation why: they are too casual in their interactions. Participant2 does also state that, in general, cross-culturalism is "challenging" in ATC work.

6.3.2 Finnish views

Participant3

1. How do you find interacting with other language groups?

I find it nice and every now and then a bit challenging.

2. Do you enjoy interacting with different nationalities?

Yes I do.

3. Why did you choose to become an air traffic controller?

I did my military service in Finnish Air Force and I was there a fighter controller (controlling the fighter planes). Some instructors told about air traffic controller profession and I decided to apply for the next ATC course. I have always been interested in aviation.

4. Did the multicultural aspect of ATC work affect your decision to become a controller?

Partly yes.

5. Do you find talking to your own nationality different from interacting with foreign language speakers?

Yes I do. It's much easier for me to talk with own nationality. There is no problem with the vocabulary. I'm not a native (English) speaker, so it's hard to find the right words when interacting with foreign people in some cases.

Again, the international component of ATC work is found agreeable, although likewise demanding. This is however the only participant whose career choice was at least in part guided by the multicultural component of the work. Like Participant2, Participant3 mentions previous interest in aviation, although his or her career path has been very different from that of the Spanish counterpart.

Finally, this controller discloses that communication with people from the native country is simpler than exchanges with foreigners as well as the difficulties of not speaking English natively.

His or her main concern is the vocabulary, struggling to choose the correct expressions. Participant3, thus finds challenge at the pragmalinguistic level of communication, which is, according to Thomas (1983, 91), easier to mend than sociopragmatic issues. In other words, the ATC member in question could rather easily overcome his or her obstacles as they exist at the surface level rather than deeper in the language.

Participant4

1. How do you find interacting with other language groups?

If it is an airline from a "new" country - i.e. a new route or a business jet - it sometimes takes time to get used to the English accent. You get used to the different accents and know the problems/benefits. Actually the most difficulties I have experienced have been with American pilots speaking English as their Mother tongue. They speak fast and non-standard phraseology. And British pilots are sometimes too polite - they talk too much when they have to ask for something and you have a lot of traffic on the frequency...

2. Do you enjoy interacting with different nationalities?

Yes I think it is interesting.

3. Why did you choose to become an air traffic controller?

It was not something I planned to be. I saw an advertisement in a news paper and applied. I worked as an aircraft mechanic then and was flying my PPL-license so aviation was familiar. I did not have a clue what ATCO's actually do, though.

4. Did the multicultural aspect of ATC work affect your decision to become a controller?

No. I applied just for fun.

4. Do you find talking to your own nationality different from interacting with foreign language speakers?

Of course it is different. It is somehow easier because you think in the same way. And you can always switch language if you have to explain something complex. Finnish radio phraseology though is difficult because you don't use it daily. (My mother tongue is actually Swedish but in 18 years I think I have used it twice to explain something).

Once again, native English speakers are seen as challenging to interact with, a problem previously arisen in research (Louhiala-Salminen et al 2005, 407; Tiewtrakul & Fletcher 2010, 230) and was also an area of ATC language in need of revision in many controllers' views in the present study. Americans, specifically, are mentioned as too casual in their approach to ATC exchanges and too speedy in communication. Brits, on the other hand, are found to be too time-consuming which Participant4 links to the need to be polite. This once again refers to different conventions of politeness. As Louhiala-Salminen (2005, 408) has pointed out, Finns can be perceived as direct in their communication compared to some other linguistic groups. Participant4 could think of wordier exchanges as unnecessarily long as his or her first language is more economical with words.

As for conversing in a shared L1, Participant4 intriguingly mentions the cognitive aspect of language use as crucial. This comment would support the notion of Dietrich and Childress (2016, 193) that FL cognitive processing is slower than that of L1. Shared sociopragmatic knowledge (Thomas 1983, 91), or sociolinguistic competence in Johnson's (2008, 32) terms, moreover, make communication easier. Participant4 also considers unfamiliar accents taxing in his or her work – an issue Tiewtrakul and Fletcher (2010) extensively studied – although experience promotes understanding in his or her opinion.

Overall, the consensus on the cross-cultural element of ATC work was that it is pleasant, although the interviewees seem to have chosen this career path mostly for other reasons. The participants were remarkably open in their opinions on different linguistic groups, although their responses concerning preferences on certain nationalities over others varied; some replies connected unfavorable attitudes with strictly linguistic features whereas others freely offered opinions on the nationality itself, such as Participant2 in his or her notions on Italians and Spaniards.

7 DISCUSSION

This study has examined language attitudes, policy and multicultural issues in the air traffic control in two countries by giving real-life employees an opportunity to voice their opinions and, moreover, point to possible language-related problems in their work. These issues were scrutinized, firstly, via a survey and then, on a smaller scale, via email interviews. To summarize the findings, I will now return to the original research questions.

My first two questions addressed language attitudes and possible reasons behind these dispositions. While the respondents did not show blatant dislike of other nationalities, they did often point out certain nationalities as difficult to work with based on *linguistic abilities*. Dragojevic and Giles (2016) have previously found a link between dislike of another nationality and difficulties of comprehending their linguistic output. While the respondents in the present study did not express disapproval per se, they were willing to address the linguistic abilities rather pointedly. Similar remarks were originally shared by Interviewee1; in fact, this ATC member named the same nationalities as problematic ones as the survey respondents .

Interestingly, however, both native and non-native speakers of English were seen as difficult to work with, the latter because of their poor grasp of the language and the former because of a tendency to use English outside phraseology, as well as for their fast-paced and accented (from the listener's point of view) English. To put it differently, being fluent in English did not guarantee a positive response from an ATC member, but was in fact sometimes a hindrance to listeners – even with very good command of English.

Language was also, clearly, a source of stress for the ATC as trying to comprehend pilots who do not share a first language with the controllers was thought to be both time-consuming and taxing. On top of the general stress of working in such an important position, language does evidently produce additional pressure for the ATC. As Dietrich and Childress (2016, 193) note, FL material is challenging for the recipient side of interactions who spend longer to unpack utterances than they would in L1.

The respondents furthermore presented clear stereotypes, even more so in the email interviews; note specifically Participant2 naming certain nationalities as having very distinct attributes. Whether these features were deemed as likeable or the opposite in this case remains mostly unclear, though. Assessing attitudes in general can be challenging, especially when attempting to access the cognitive attribute that Bohner and Wänke (2002) mention; some aspects of an attitude always remain hidden. Even if a person is glaringly prejudiced against a certain group of people, he

or she might be reluctant to express this to others – note that Iglesias Álvarez (2009, 93, 94) has previously found that people could conceal their true attitudes to save face.

The next research question focused on policy and its role in attitudes towards English. This issue prompted some of the most intriguing and beneficial findings in the present study and, ultimately, raised further questions. What was apparent on the Spanish side was their frustration towards a restrictive policy and, moreover, the need for further education in the English language. It was also indicated that a new policy should not be enforced abruptly but rather that time should be allowed for adjustment. The Spanish opposition to the English-only policy could very well signal poor corpus planning – or its unsuccessful application – considering that English lessons were widely desired by the controllers that participated in the survey.

An important notion here again is that English education in Spain has historically been overshadowed by French, as (Muñoz 2000, 161) mentions, although more recently globalism has made English education unavoidable, especially to younger generations. The regional languages further complicate linguistic policies in the country; even if these issues do not directly concern regions such as Málaga, they are present in politics and the media in the country at large. In many ways the issue of regional languages, in fact, relates to the struggle of Swedish in Finland. One more observation on Spain would be that while the significance of English is recognized, especially by younger Spaniards, the global lingua franca does not seem to be hindering the status of the national language. Note for example that American movies are still generally dubbed in in comparison to Finland where subtitled English-speaking films are the only option, excluding children's movies where mastering the language cannot be expected.

As for the reception of the English-only policy on the Finnish side, the ATC in this country were slightly more accommodating even though the approval of the restrictive policy was hardly overwhelming. One apparent concern in the two countries was communication with ground services, emergency care employees, private pilots and such, as their English abilities were often found to be lacking and communication in the native language was thought to be simpler. Emergencies were overwhelmingly seen as circumstances where controllers wished to use their native languages. Here one must ponder how clearly the English-only policy was actually explained to the ATC and whether legislation would leave room for deviation when the situation absolutely required that. It should certainly have been made explicit which contacts should entail English alone and which could be handled via a different language. Perhaps, as one controller pointed out, “common sense” goes a long way in decisions concerning policy.

In summary, the policy might have been more successful if, firstly, it had been explained in more detail to those it concerns and, secondly, corpus planning, i.e. ensuring adequate language skills,

had been better. Corporate research in multilingual environments, especially conducted by Vaara et al (2005) and Louhiala-Salminen (2005) has, prior to the present study, raised similar issues, concluding that dialogue between management and employees as well as assessment of language skills are *essential* for the creation of successful policy. These concerns were certainly visible in the ATC responses. The inclusion of ATC in the process of language planning would generally be beneficial. Regrettably, the policy-making process often works from the top down and there are unforeseen blindsides to almost every decision. Therefore policy making should be an ongoing process rather than a one-and-done decision.

The fourth research question was concerned with multilingualism in the ATC environment. The consensus was that while cross-cultural contacts are challenging, interacting with multiple nationalities is also enjoyable. It might be safe to assume that, in general, people who seek employment in aviation are more or less internationally inclined. This was also visible in the responses concerning foreign language use outside the ATC sphere, as many listed hobbies involving English. Then again, some likewise appeared disinclined to apply other languages outside work. The survey, in fact, did not explicitly assess willingness to apply foreign languages, only whether the respondent uses any. Therefore, lack of exposure could be the reason behind answering no. After all, languages have instrumental purposes and many hobbies require the use of English and thus a person's like or dislike of the language is secondary to the necessity of its command.

Finally, the last research question addressed the practical implications of the survey results. In essence, this means how ATC work could be improved based on the findings. First of all and certainly most importantly, language skills are not always at a level that would ensure safe and smooth conversation between the ATC and the cockpit. This is obviously a glaring cause for concern worldwide but especially in countries where English education is not up to standard. Despite global recommendations and policies, a change at this scale is bound to be slow-paced as each national context has its own challenges and peculiarities. Another crucial issue that should be regarded is that language skills appear to decline somewhat rapidly, undoubtedly due to insufficient use outside work *and beyond phraseology*. Put differently, an ATC member could know the phraseology almost perfectly yet greatly struggle with everyday English. It is certainly compelling that someone who uses English throughout the workday could have declining skills in said language. This is the downfall of ATC phraseology. The phraseology lacks tools for handling unusual situations and emergencies in particular.

It was the wish of an overwhelming number of controllers that opportunities for improvement of both casual language skills and phraseology would be offered. As stated above, especially emergency protocol was found to be lacking when language was concerned. The controllers,

principally Spanish ones, were calling for employer involvement in this dilemma and, more specifically, tangible and functional tools for language training. Practical education was clearly preferred to online tools that were also found unsatisfactory in quality. It is indeed unreasonable to expect that employees with such a heavy workload and stressful work environment would be expected to study in their spare time for work purposes. Language education is cognitively taxing and therefore few employees are likely to choose that as a leisure activity. Furthermore, many hobbies that would entail the use of English might not include demanding enough linguistic material to meet the professional needs of controllers. Employers thus need to recognize the need for on-site language training yet should likewise be encouraged by the motivation for further learning that is so clearly present in the air traffic control. In the end, this inclination to learn more signals that the employees take their crucial role in aviation very seriously and wish to do their job to the highest standard possible.

There were some flaws in the present study that became obvious after the survey had already been answered, namely, slight discrepancies between the theory and the actual analysis. One problem was due to circumstance of course: the El Prat airport that was desired as the Spanish end of the research opted out of participating. The reason that the Barcelona airport would have been an ideal respondent in the survey is, as previously noted, the minority language Catalan spoken in the area. This trait in the linguistic landscape would have given the analysis additional texture given that the respondents' linguistic backgrounds would likely have been more complex than those of the Málaga ATC. This change of course regrettably made much of the theory on multilingualism in Spain somewhat irrelevant. Yet, as recently mentioned, the issue of multilingualism likely affects the population at large to some extent as well.

As for the theory concerning linguistics, pragmatics did not prove as useful as initially expected. The analysis mainly remained in the area of sociolinguistics. Accessing the former sphere would likely have required different survey questions or a more thorough analysis. Pragmatics would nevertheless be useful for ATC training purposes. The need for understanding language beyond surface structures was, in fact, seconded in the survey responses, which proves pragmatic competence all the more crucial. Intercultural pragmatics, more specifically, would be appropriate for training purposes. Understanding different linguistic conventions and varying interpretations of output could ascertain that these issues do not distract ATC employees from focusing on what is relevant in their work: the smooth exchange of messages.

Nevertheless, additional sociolinguistic background in the present study might have been more applicable to the actual analysis in the multicultural ATC environment. Language contact in particular could have been a useful theory here. Then again, this discipline has been covered rather

well in previous research as cross-cultural exchanges have been analyzed in the context of aviation, even if language contact has not been explicitly recognized in the theoretical framework. All in all, sociolinguistics has endless resources for studying the world of aviation.

Another discipline that could be expanded on would be the study of English as a lingua franca. This topic is incredibly relevant with the ever-increasing globalization and could be studied in various contexts. What makes ELF so interesting is its fluid nature; it is the users who shape the rules if rules indeed exist in the variety. On the other hand, it is the hybridity of ELF that makes it perhaps difficult to grasp. In the field of aviation, there are numerous linguistic backgrounds coming together and the question is, can ELF be even detected in this environment? Maybe research in this area would do well if it were to focus on smaller contexts, such as two language groups coming together in communication.

8 CONCLUSION

Aviation is, without doubt, an exceedingly fruitful object to research. Much has been scrutinized so far, yet, much remains to be studied. What makes aviation, and ATC specifically, an ideal target for studies, is the potential for results that have tangible, real-life use. It is extremely important for safe aviation that researchers keep raising issues that might hinder smooth operations between air traffic control and the cockpit. The present study has uniquely assessed some of these problems by giving controllers the opportunity to voice their concerns.

The main takeaway from this study is the constant need for improvement of language skills for both ATC and pilots. A further concern is the lack of employment involvement in ensuring that controllers' English skills are adequate enough for them to work effectively and with confidence in their abilities. On the contrary, the responsibility for learning is left to controllers who work long hours and need their spare time to rejuvenate rather than further burden them. Employers in the ATC have a crucial role in supporting their employees to accomplish the common goals of aviation: safety and efficacy.

Further studies on the air traffic control could continue on the trail of the present study in offering concrete solutions to the problems that have been illuminated here. This could entail efforts of improving ATC language education with the help of both educational and ATC experts. To deviate from the field of aviation, the results here could likewise be used for research concerning policy making, as inadequacies of corpus planning and the realization of these plans have been adduced as well.

Finally, while pointing out concerns, the present study has illuminated how motivated the ATC are to improve their operations. While discovering problems in this area is always unsettling, the ATC personnel – and the public – should be encouraged to know that ATC exchanges are done by personnel that take their work very seriously and are interested in finding solutions to issues that studies such as the present one bring forth.

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Appendix

The survey questions

1. Age? a) 18-29 b) 30-45 c) 46-55 d) 56 or older
2. First language (Finland/Spain)?
 a) Finnish b) Swedish c) English d) other
 /a) Spanish b) Catalán c) Basque d) English e) other
3. Years of experience working in the air traffic control?
 a) 1-5 b) 6-10 c) 10-20 d) 21 or more
4. What is your job in the air traffic control?
 a) tower control b) radar control c) en route control d) other, what?
5. Which languages do you use at work?
 a) only English b) English and my native language c) several
6. Which languages would you like to use at work?
 a) only English b) only my native language c) English and my native language
 d) as many as possible
7. In which situations do you deviate from English?
8. In which situations do you deviate from airspeak and speak casual English?
9. Which languages do you use in your spare time?
10. If you use foreign languages in your spare time, for what purposes do you use them?
11. What is your opinion on the policy that only permits the use of English in the ATC?
 (Please answer even if this policy does not concern your workplace.)
 a) I support it b) I'm against it c) I'm undecided
12. Please give reasons to your previous answer.
13. How well do you know the legislation concerning language use at your workplace?
 a) not at all b) the parts that concern my own language use c) extensively
14. Have you had problems with language in your work? Please describe the situation(s).
15. Do you feel that you had adequate language skills when you graduated from the aviation academy?
 a) yes b) no
16. In which ways could air traffic control language skills be improved in your opinion?
17. Any other thoughts you would like to share on language in ATC work?