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Intercultural communication and discourse analysis: The case of Aviation English

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Abstract

Historically, applied linguistics has tended to shift from a theoretical approach toward a problem solving approach. Intercultural communication as a field of study has gained its position through asking how people from different cultures communicate and how misunderstanding can be prevented. Within the domain of English for Specific Purposes (ESP) Aviation English has become a matter of concentration worldwide. The requirements introduced by International Civil Aviation Organization encompass both technical language and plain English applicable to both native and non-native English speakers. However, based on cultural differences, related conventions, and diverse communication styles, air traffic controllers and pilots sometimes use English in a way that may cause confusion and misunderstanding, which in turn can result in aviation accidents or incidents. This paper aims to consider cultural dimensions as introduced by Hofstede (1980) and their involvement in aviation context. The paper highlights the necessity of focusing more on intercultural communicative competence in the teaching of aviation English.

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1. Introduction

The fact that English has become a world language is a concept that cannot be denied. Therefore, an enormous amount of intercultural sensitivity has risen in the recent years. As a result, the need for developing awareness of cultural diversity has gained tremendous attention. Cultural awareness not only requires cognitive but also affective

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engagements and when teaching English as a second language, both should be taken into account (Wandel, 2003). Based on the reality of English as ‘world language’ and its geographical scope, both native speakers’ culture and non-mainstream cultures should be seriously thought about. As making use of English as a lingua franca has become more significant, focusing on national target structures as well as intercultural approaches should also be applied.

The definition of lingua franca is interestingly distinct. Although some believe it to be a means of communication between speakers of different mother tongues, others argue that it is a medium of communication between people of different mother tongues and those using English as their second language (Samarin, 1987, as cited in Gnutzmann, 2000). However, in any case, owing to the fact that English has a head-start on other European languages as a lingua franca, its function as a medium between speakers of different languages has relatively been more emphasized (Decke-Cornill, 2002).

Because of the socio-cultural diversity among the different nationalities using English as a lingua franca and the cultural aspects that can have effects on individuals’ interactions with interlocutors from different cultural backgrounds, it is critical that understanding what one means in terms of discourse and pragmatics needs adequate attention. The importance gets more highlighted in cases where individuals need to respond to management demands or more importantly to meet operational requirements a compromise to which can result in fatal problems. The acceptance of diversity in cultural backgrounds is similar to the acknowledgment that human characters and personalities within the same culture differ widely. Therefore, understanding this diversity and learning necessary skills in intercultural communication must be compulsory in the study of Aviation English.

According to Jenkins (2006), English as a Lingua Franca (ELF) is used as a contact language among speakers from different first languages. However, the language of air communication between Air Traffic Controllers and Pilots is not a standard variety of English language and has a very brief and specialized syntax which is called ‘Phraseology’. Phraseology is used in routine situations by both native and non-native speakers with the goal of clarity and comprehension, and is regarded as English for Special Purposes (Hyland, 2002). Nevertheless, in non-routine situations, aviation experts have to use English language outside of phraseology which may lead to misunderstanding and thus aviation mishaps. The aim of this article is to analyze some of aviation incidents and accidents to illustrate how cultural factors affect communications between multicultural interlocutors in order to encourage the teaching of aviation English as a lingua franca.

2. Review of the literature

In aviation English, the learning goal of inter-culturalization is not the assimilation to norms of the target culture, but it is an expansion of the intermediate position. Any intermediate position is not an approximation to another system, but a potential resolution to the problem of mediating between two (or more) cultural frameworks. According to Merritt and Maurino (2004), cross-cultural issues in aviation can only be resolved with joint effort; that is, both sides should have a role in finding the best possible solution.

Cookson (2009) states that despite the fact that it is important to ensure that non-native speakers have a suitable level of English proficiency, the value of language awareness training cannot be overlooked in cases such as dealing with non-native speakers whose pronunciation is heavily influenced by their L1. According to Kim and Elder (2009), “since English is...generally the language used and ... since the participants in the exchange are by no means all native speakers.... it is more helpful to think of aviation English as a Lingua Franca than as a restricted specific purpose code” (p.14). And as ICAO language proficiency (ICAO, 2010 Doc 9835) additionally argues, English as a lingua franca can be debated as one possible way of approaching the difficulty of miscommunication in the aviation context.

Hymes (1972) developed the concept of ‘communicative competence,’ and he argued that in order to understand first language acquisition, both grammatical competence and the proper use of language are needed, and therefore sociolinguistic competence is also fundamentally significant. With regard to the intercultural communication as well as the intercultural speakers, in whatever stage a person’s linguistic competence is, when they interact, the knowledge of the world, which encompasses the knowledge of the country, is likely to play an important role. It is probable that they may even share social identities, which can be helpful in some cases.

During any kind of interaction, there are culturally and stylistically differences among speakers, which does not necessarily mean that the differences will lead to miscommunication. In the words of Sarangi, if we define an

intercultural context in terms of “cultural attributes of the participants”, then it is very likely that any miscommunication which takes place in the discourse is identified and subsequently explained on the basis of ‘cultural differences’ (Sarangi 1994, p. 414).

Taking aviation into account, Merritt (2000) believes that pilots are usually at the technological and modernized forefront of their country’s workforce and many of them have to travel to other countries as a regular part of their job. In the aviation community, there has been a denial or minimization of national differences, and the belief is that as pilots operate similar types of aircrafts and go through the same standard trainings, they should be able to communicate effectively. However, it seems that national and international differences can have implications and can be discussed in a wider cultural context.

Orsanu, Fischer and Davison (1997) believe that in the context of aviation, there are a minimum of three ways which can lead to miscommunication. Firstly, there could be complications in transmission of language; accent problems belong to this category. Secondly, the transmission of the message could have been done accurately; however, there might be some miscomprehension on the side of the receiver. Using jargons or unfamiliar utterances can lead to confusion. The third category is the messages that are transmitted as well as understood correctly, but fail to build a shared understanding of that particular situation.

Undeniably, successful flight operations need much more than just skills to fly an aircraft. Historically, flight safety has been jeopardized by insufficient and in some instances inappropriate communication between the crew and air traffic control (ATC). Due to the fact that discourse can be routinized, specifically between the flight crew and the air traffic control, its analysis can be complicated. This standardization of communication is basically intended to decline communication misunderstanding; nevertheless, it does not always work. This paper attempts to specifically address miscommunications in commercial aviation, precisely between flight crew and controllers.

2.1. The killing communication

Most accident investigators lack the tools and training to analyze language related factors in aviation accidents (Mathews, 2012). Sometimes professional culture of aviation experts is impressed by national culture and style of communication. The work of Hofstede (1980, 1991) seems to be the most relevant in analyzing accidents which is focused in this paper. Hofstede in the analysis of his initial study identified systematic differences in national cultures on four primary dimensions: power distance (PDI), individualism (IDV) vs. collectivism, uncertainty avoidance (UAI) and masculinity (MAS) vs. femininity, and later he added long-term orientation (LTO) and indulgence versus restraint (IVR).

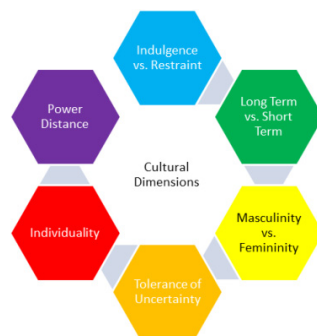


Fig.1 Cultural dimensions (adopted from Hofstede, 1980)

According to Merritt (2000), “significant replication correlations for all indexes of individualism-collectivism, power distance, masculinity-femininity, and uncertainty avoidance confirms that national culture exerts an influence on cockpit behaviour over and above the professional culture of pilots”

On August 2, 1976, a Boeing 707 cargo flight departed from Tehran to Seoul and collided into a mountain due to a wrong turn. A formal report of the accident investigation was “Deviation from Standard Instrument Chart and drifting to the right instead of left”.

The following is the conversation transcription between the Air Traffic Controller (ATC) and the pilot

Standard Instrument Departure (SID) is published flight procedure followed by aircraft immediately after takeoff from an airport

ATC -PILOT: “follow SID11”

PILOT- ATC: “What is SID11?”

ATC - Pilot: “Standard Instrument Departure11”

Pilot action: Silence

In sentence two, the pilot asked for details of SID11 due to lack of familiarity with the procedure. The Air Traffic Controller assumed that the pilot did not know the meaning of that acronym (SID), so in response, he described its components. Despite the fact that the pilot was aware that his message was not received by ATC, he did not ask for clarification. Why? Is there any trace of cultural factors in this miscommunication? As shown in the following diagram, Korea is located in the high power distance area; based on this cultural perspective, the pilot must have felt subordinate to the air traffic controller; this can explain why he did not express his doubt, and ask for clarification and guidance.

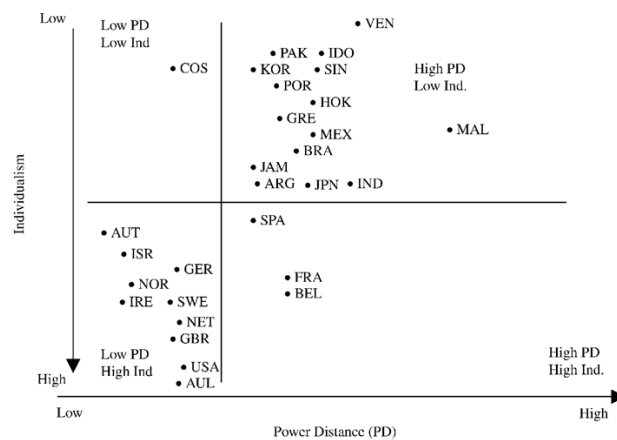


Fig.2 Individualism, power distance (adopted from Hofstede, 1983)

On January 25, 1990 Avianca flight 052 departed from Medellin, Colombia to New York's JFK airport. Due to air traffic conditions at JFK airport, the flight was held for 1 hour and 17 minutes, and the aircraft fuel was getting critically low near the JFK airport. The co-pilot who had better English language speaking skills asked ATC for priority and said: “I think we need priority...” which in the ATC terminology does not mean emergency situation. This condition lasted for 39 minutes, and the co-pilot still did not tell the controllers that they were in danger. While approaching the runway the plane encountered heavy wind shear and hence was forced to abandon landing. Soon after that, the captain told the co-pilot, “Tell them we are in emergency”. And, the co-pilot informed ATC “Ah we'll try once again; we're running out of fuel”. The captain again told the co-pilot to: “Advise them we are in emergency”, and the co-pilot replied “Yes, sir, I already advised them”. The captain told the co-pilot the third time to “... Advise them that we don't have fuel”. Again, the co-pilot passed their message. “We're running out of fuel,

sir". Avianca flight was controlled by two different parts of air traffic control at the final stage of flight; thus, the repeated concern of the flight crew was not all directed to a single air traffic controller. Finally, Avianca 052's engines flamed-out and the aircraft crashed during the final approach to landing. Colombia is a highly masculine, high power distance (Hofstede, 1980) and the pilots were reluctant to ask for assistance or challenge instructions issued by air traffic controllers concerning the flight path and therefore expressed their concern indirectly.

2.2. Features of effective communication

The following is a near miss event due to ineffective communication between two air traffic controllers.

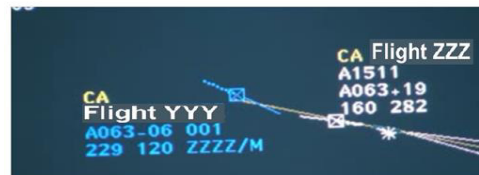


Fig.3 RADAR screen showing a near miss event

(The communication between two controllers has been translated from Persian to English)

XXX: The name of the control tower

YYY: The name of arriving flight

ZZZ: The name of the departing flight

(YYY)Flight-(XXX) Tower: "Hello, Good Evening".

(YYY)Flight-(XXX) Tower: "Not released by Tehran centre 88 miles to XXX descending flight level two seven zero we do have information papa one zero two nine shall we use runway 11 for landing? Thank you very much sir".

(XXX)Tower-(YYY) Flight: "Good evening sir, no problem for using runway 11 left"

(YYY) Flight -(XXX)Tower: "Thank you very much ,back to you"

Then the (XXX) tower controller informs the RADAR controller regarding request of pilot in Persian language

Tower controller - RADAR controller: "Hello, Dear Ali"

(XXX)Tower controller - RADAR controller: "Sir, (YYY) flight has requested the opposite direction of active runway for landing, It's Ok for us if you don't have any restriction".

RADAR controller- (XXX) Tower controller: "It's ok!"

(XXX)Tower controller- RADAR controller: "Thank you!"

RADAR controller-(XXX) Tower controller: "So we will direct flight (YYY) to the opposite direction".

(XXX)Tower controller - RADAR controller: "OK!"

A few minutes later departing flight (ZZZ) is preparing for takeoff in the opposite direction to the arriving flight (YYY)

(ZZZ)Flight -Tower: "we are ready for departure "

(XXX)Tower controller - RADAR controller "Request release for (ZZZ) Flight"

(1) RADAR controller-(XXX) Tower controller : "(ZZZ) flight is released for departure"

(XXX)Tower controller - (ZZZ) Flight: "cleared for line up and take off runway two nine right (29R) wind is two seven zero degrees at seven knots after departure contact RADAR one one nine point seven"

(ZZZ)Flight - (XXX) Tower controller: "copy it thanks two nine right cleared for takeoff departure RADAR one one nine point seven"

(2)(XXX)Tower controller - RADAR controller : "(ZZZ) rolling" (departing)

A Few seconds later the two aircrafts were approaching head-on, but in the last moment before impact, RADAR controller directed (YYY) flight to another track to avoid a mid-air collision. There was a discussion between the Tower and The Radar controller . The RADAR controller claimed that permission for takeoff was issued based on

the condition of known traffic including (YYY) flight (1), and Tower controller claimed RADAR controller was informed by him (2)

Analysis of the mentioned communication highlights three important points: 1) an implicit exchange of critical information between air traffic controllers 2) repeated code switching from Persian to English 3) the long time conversation between Tower and RADAR controllers. The above analysis raises a question, “Is there a universal model of communication?”

Perhaps the most suitable model to follow in such aviation communication as the above is Grice’s model. In Grice’s words (1967, 1987), cooperation in communication can follow the following maxims: Be truthful; be informative; be relevant, and be perspicuous.

Aviation discourse analysis has verified that there is a contradiction between communicating safety issues and sustaining face. According to the theory of politeness which was developed by Brown and Levinson (1987), the face of interlocutors should be saved by mitigating face threatening act. The degree of politeness varies and the greater will be used especially for a person who holds a higher rank than the speaker. In a study at NASA, Linde (1988) has characterized politeness in terms of mitigated speech by using several markers such as modals (“would you, could you”), and markers of request for agreement: Ok? Right? Linde (1988) found that co-pilots tended to use greater mitigated speech than pilots when they talked to each other; as a result, the pilots considered the speech less seriously.

3. Conclusion

Bennet and Wiseman (as cited in Guerro, 2008) attempted to overcome some of the murkiness of intercultural communicative competence definitions by drawing a major distinction between intercultural sensitivity and intercultural competence. From their perspective, intercultural sensitivity is “the ability to discriminate and experience relevant cultural differences”, whereas intercultural competence is “the ability to think and act in intercultural appropriate ways” (p. 422). The distinction is between knowing and doing in intercultural competent ways. Accordingly, Bennett (1993) defines intercultural sensitivity as the worldviews that determine how people react to cultural differences; it is assumed that these reactions can be predicted as people learn to become more intercultural competent communicators. It is clear that what foreign aviation crew need is far more than intercultural sensitivity; the ability that they need to have should also encompass intercultural competence in order to keep miscomprehension problems to a minimum.

Language teachers of English for aviation should recognize the sensitivity and significance of language and its culture to ensure a safe career. Teachers should become conscious of the fact that language serves a number of purposes, the most obvious and immediate of which is said to be communication. With the advent of communicative language teaching, culture has been recognized as one of the significant dimensions of foreign language teaching (Atay, Kurt, çamlıbel, Ersin & Kaslioglu, 2009). The fact that language and culture are interdependent has been emphasized by numerous scholars (e.g., Kramsch, 1991; Byram, 2009; Karabinar, 2012). One of the major requirements in vocational tact is language competency, which is an influential factor in ensuring the attainment of the full safety and standards. English for specific purposes (ESP) courses need to be designed and practiced in ways to consider language along with culture as tools for vocational activities. ESP learners need to be prepared with specific linguistic and cultural competency which is pertinently determined for workplace demands.

With regard to the significance of vocational language and use of English as the default international lingua franca, pilots and ATCs have to respond comprehensibly in English at a fully-functional haste, which requires a good understanding of the cultural issues. Flight teams and instructors certainly concur with the importance of communication abilities in the aviation profession (Ruiz, 2004). Their communication context is a logical illustration of challenge to use and comprehend English fluently.

Following a series of occurrences related to high-profile accidents and incidents because of the language as a fundamental factor and inherent complexity of radiotelephony correspondence, International Civil Aviation Organization (ICAO) proposed an alternate prerequisite scale in order to determine English language level before allowing pilots and air traffic controllers to be licensed to work in international operations (ICAO, 2004, p. 1-1). Since acknowledgement of instructions between pilots and air traffic controller relies upon a complete understanding and comprehension, in order to secure flight standards, defining the cultural knowledge of English language proficiency seems to be of an

undeniable essence for authorities such as ICAO. In other words, attempts should be made to include intercultural communicative competence requirements instead of the sole language proficiency criterion to ensure that the standards are properly met.

As a result of ICAO's presentation of a set of Language Proficiency Requirements (LPRs) in 2004, a framework which identified six different levels of operational aviation English competency was developed. The rubric includes six skills as criteria: vocabulary, grammar/structure, pronunciation/accent, fluency, comprehension, and interactions. These skills are measured on a rating scale from 1 to 6 in a holistic fashion. Respondents need to achieve at least level 4 in the radiotelephony context appropriate to aviation in order to be qualified (ICAO, 2004, A8-A9). Since the deadline in March, 2011, all ICAO Contracting States have approved, instructed, and measured the aviation crews using these new standards. However, what is lacking from this framework is the intercultural knowledge which is complementary to appropriate meaning construction, and which proves especially important in unexpected circumstances, as shown in the past events.

In the multicultural context of aviation, therefore, effective teaching requires curriculum designers, trainers, teachers, and testers to go beyond the traditional ways of teaching and testing aviation English, which emphasize only language skills. Intercultural awareness and intercultural communicative competence also need to be enhanced in aviation frontline personnel including pilots and air traffic controllers. In such a context that a single misunderstanding may lead to a tragedy confirms that the creation of a lingua franca is an essential part that contributes to effective aviation communication.

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