Exploring the construct of radiotelephony communication: A critique of the ICAO English testing policy from the perspective of Korean aviation experts

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Introduction

This study explored the construct of pilot and air traffic controller communication in international flight operation and air traffic control. The construct was examined in the context of international aviation communication in Korea as a way of investigating the language proficiency testing policy established by the International Civil Aviation Organization (ICAO).

Background

In recent years there has been widespread concern about insufficient English proficiency in the aviation industry on the part of Non-Native English Speaking (NNES) pilots or air traffic controllers and its role as a contributing factor in the chain of events leading to accidents or incidents. These concerns have led ICAO, a special agency of the United Nations responsible for all aviation-related matters including establishing international law and policies, to strengthen its provisions regarding English for radiotelephony communication. Accordingly, in 2003, it instituted a requirement that all aviation personnel pass a test of English. However, Native English Speaking (NES) pilots and air traffic controllers are in effect permanently exempted from testing because they are deemed to be expert users of the language unless, during the process of licensure, they are identified as having a problem such as a speech impediment or a strong regional accent (ICAO, n.d.). The deadline for member states to meet this requirement was set initially for March 2008 and later shifted to March 2011, given that many of the ICAO member states (137 out of 191) had not yet complied.

While Korea was one of the first member states to develop its own test of aviation English, it subverted the ICAO policy by disclosing all forms of the test on its website, thereby ensuring that all aviation personnel were able to reach the minimum required standard. In spite of this, there was strong resistance to the ICAO policy from incumbent Korean airline pilots and air traffic controllers,

most notably from those who had many years of experience. Before the Korean government ratified the ICAO policy, Korean airline pilots through the Airline Pilots Association of Korea made strong representations against the new policy to the Korean government.

The study

To better understand the resistance by Korean aviation personnel to the ICAO policy and associated testing regime, the study (Kim, 2012) aimed to probe their perceptions in greater depth. The research questions addressed in the study were:

1) How do Korean pilots and air traffic controllers perceive the requirements of radiotelephony communication
   a) as represented in the test implemented in Korea?
   b) as represented in the ICAO policy?
2) What are the important qualities of pilot and air traffic controller radiotelephony discourse as perceived by Koreans who work in these professions?

Methodology

This study combined quantitative and qualitative research methods in a triangulated approach. Three different sources (pilots and air traffic controllers as informants and discourse samples of radiotelephony communication) and five different methods (nonparticipant observation, discourse analysis of audio-recordings of pilot and air traffic controller communication, feedback analysis of the collected audio-recordings by aviation specialist informants, interviews and questionnaires) were used. Observation of air traffic control centres at the international airport in Korea was undertaken to gain an understanding of the procedures involved in pilot and air traffic controller communication. Interviews with 10 Korean pilots and 12 Korean air traffic controllers were carried out in order to explore issues raised in the Korean aeronautical community with regard to the ICAO policy and the English test administered in Korea and to obtain in-depth opinions on these concerns. Questionnaires comprising 23 items including short answer, multiple choice, and open-ended questions were designed and administered in order to elicit opinions on the same issues on a broader scale. Questionnaire responses from a sample of 300 Korean pilots and 100 Korean air traffic controllers were gathered. For analysis of the responses from the 400 questionnaire participants a frequency

distribution method was used. For the open-ended questionnaire items the frequency of themes mentioned by the respondents was counted. The interviews with 22 of the participants were transcribed in Korean. Quotes from these transcripts were then selected and translated into English to illustrate and elaborate on the results of the questionnaire analysis. Finally, six episodes of live pilot and air traffic controller radiotelephony discourse were collected from two air traffic centres at the international airport in Korea. These episodes involved three NES pilots (one American and two Australians) and three NNES pilots (one Macanese, one Russian and one French) speaking with Korean air traffic controllers. The recordings were used for the purpose of conducting grounded ethnography on the discourse (Douglas, 2000; Frankel & Beckman, 1982) serving both as a primary data source and as the stimulus for domain experts who were asked to interpret and evaluate the events in a series of one-on-one sessions with three Korean pilot informants and two focus group sessions with five Korean air traffic controller informants. The specialist informants' sessions were recorded and transcribed, translated into English, and segmented into communication units (Loban, 1963). Emerging themes from the informants' commentaries were then identified and grouped into categories.

Overview of results

Relevance of the test to the requirements of radiotelephony communication

Opposition to the English test used in Korea was unanimous amongst the Korean aviation personnel surveyed for this study via questionnaire and interview and their complaints about the test quality were multiple: the test content was inappropriate and irrelevant to the demands of the job; test development procedures were unclear; and there was no information publicly available on the validity or reliability of the test. The Korean government's political reasons for disclosure of the test materials were well understood, but also strongly criticised. Many of the respondents felt that the government had agreed to the policy in order not to lose face as a member state of ICAO, but had simultaneously attempted to grapple with the reality that some or many personnel might fail. However, the main criticism was directed at the policy, as discussed below.

Relevance of the ICAO policy to the requirements of radiotelephony communication

The majority of those surveyed via questionnaire and interview responded negatively to questions about the ICAO policy. There were three reasons for their resistance. First, they questioned the premise on which ICAO based the

policy, namely: that insufficient English proficiency on the part of pilot or air traffic controller had been a prime causal or contributing factor in the chain of events leading to accidents in the past. They added that the contexts of accidents were too complex for a sole factor to be singled out and the real safety issue was related to observance (or not) of radiotelephony conventions. The second reason for the respondents' objections to the ICAO policy was its impact on the NNES aeronautical community, resulting in a situation where those senior members of the aviation industry with expertise and many years of experience were at risk of losing their jobs because they had relatively lower English proficiency than their younger and relatively inexpert counterparts. The respondents feared that the loss of such experienced personnel would actually increase the safety risk rather than reducing it. The third reason was that the policy unfairly targeted NNESs and overlooked the shortcomings of the NES members of the aeronautical community, who often did not adhere to the requirement to use prescribed phraseology, the standardised set of words and phrases agreed on for use in all routine radiotelephony communications. The NES personnel were also perceived as failing to communicate in 'plain' English, which, according to the ICAO policy, should be used only in situations where standard phraseology would not suffice and should be delivered 'in the same clear, concise, and unambiguous manner as phraseologies' (ICAO, 2004, pp. 2–3).

What are the important qualities of pilot and air traffic controller radiotelephony discourse as perceived by Koreans who work in these professions?

The second research question considered the important qualities of pilot and air traffic controller communication as revealed in the aviation experts' response to the questionnaire and general interviews on the one hand, and on the other, in the focus group commentary on actual episodes of radiotelephony communication involving NES and NNES pilots. In the former, a substantial majority of respondents reported that they prioritised strict adherence to the required radiotelephony conventions as the most important aspect, over and above any others, in radiotelephony communication in general. Noncompliance with radiotelephony conventions was the commonly mentioned problem with NES, followed by the variety of local accents and expressions, and fast rate of speech. When asked about any difficulties they faced with NNES interlocutors, the variety of first language (L1) influenced accents was reported as the most challenging factor in the international radiotelephony communication context. Also perceived to be problematic was the tendency by some proficient speakers to deliberately use general English to show off their ability, often at the expense of efficient and effective communication.

The findings emerging from feedback on the six radiotelephony episodes echoed the interview and questionnaire responses and are reported in detail in Kim and Elder (2009). Again it was the professionalism (or lack thereof) of pilot and air traffic controller behaviour, including adherence (or failed adherence) to prescribed conventions, that attracted the bulk of feedback from the focus group respondents. They perceived the main distinguishing feature of the NES pilot discourse to be their tendency to use general English even when phraseology sufficed. All three NES pilots were observed to use general English habitually and in an unnecessarily wordy manner. Their lack of sensitivity in using general colloquial English when plain English was required was emphasised along with their unduly fast rate of speech and choice of words whose meanings were unlikely to be shared. As for the 3 NNES pilots (Russian, Macanese, and French speakers respectively), the main criticism from respondents was directed at the level of their English proficiency, and in particular their L1-transferred English pronunciation and accents were recognised as the most challenging factor in radiotelephony English as a Lingua Franca (ELF) communication.

Implications of the study

The findings of this study would suggest that in the radiotelephony communication context it is not possible to separate language from the broader context of professional communication, which is essentially cooperative in nature. It is argued that the construct of radiotelephony communication needs to be revisited in light of relevant literature on ELF literature and with reference to insights from domain experts. The co-constructed nature of communication is at the heart of ELF communication – as emphasised in both the general ELF literature (e.g., Canagarajah, 2007; Firth, 1996; House, 2003; Meierkord, 2004) and in that which focuses specifically on ELF testing (Elder & Davies, 2006; McNamara, 2012). Therefore, qualities such as strategic competence for accommodation, and shared responsibility for lack of success of communication by participants should be incorporated into the radiotelephony communication construct and any tests which are designed to reflect this. Taking an English for Specific Purposes perspective on construct definition, on the other hand, necessitates consideration of 'indigenous assessment criteria' (Jacoby, 1998; Jacoby & McNamara, 1999) or in other words the qualities of effective communication as perceived by domain experts (in this case pilots and air traffic controllers). As others have recognised (e.g., Brown, 1995; Douglas & Myers, 2000; Elder, 1993; Elder et al., 2012; Jacoby & McNamara, 1999; Knoch, forthcoming; Lumley, 1998), it is these domain experts who are best placed to

determine what really matters for communicative success in the context of concern.

This study also has implications for contexts in which tests are used for policy implementation purposes. The ICAO language testing policy was adopted with a view to creating a positive impact on NNESs: raising awareness of the importance of English proficiency, encouraging them to improve their English proficiency, and ultimately ensuring better safety in aviation. However, the findings of this study imply that the ICAO policy has not met its intended goals, and these seem unlikely to be met in the future unless the policy and its underlying construct are modified. This situation highlights the importance of considering the social meaning of tests in their policy context (McNamara, 2008, 2011; McNamara & Roever, 2006; Shohamy, 2001, 2006, 2009) where complex and often conflicting social and political interests are at stake. This study has shown that the ICAO test policy construct is value-laden and contested by two large groups of stakeholders, those (including ICAO) who see English proficiency as the primary matter of concern versus those who see this as simplistic, and have a more complex view of the nature of communication in their professional context, in which responsibility for success is shared between participants.

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