DISCOURSE ANALYSIS OF AIRSPEAK BETWEEN PILOTS AND AIR TRAFFIC CONTROLLERS AT ATATÜRK INTERNATIONAL AIRPORT IN ISTANBUL: IMPLICATIONS FOR AVIATION ENGLISH COURSES

A THESIS PRESENTED BY
AYŞEN HANĐAN GİRİNER
TO THE INSTITUTE OF ECONOMICS AND SOCIAL SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN TEACHING ENGLISH AS A FOREIGN LANGUAGE

BILKENT UNIVERSITY
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ABSTRACT

Title: Discourse Analysis of Airspeak between Pilots and Air Traffic Controllers at Atatürk International Airport in İstanbul: Implications for Aviation English Courses.

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Airspeak, the language of the sky used between pilots and air traffic controllers, is an English-based language that has distinguishing features from standard English. This study aimed first at investigating what those distinguishing features of Airspeak are; second, in what ways these differences might cause miscommunication; and third, which aspects of Airspeak should be considered when designing guidelines for English courses given to air traffic controller and pilot training students.

To consider all these points, this research study was triangulated with recordings, questionnaires and interviews. I obtained nine hours of recordings at Atatürk International Airport in İstanbul involving three operations of air traffic controlling: Area Control, Approach Control and Tower-Ground Control. I transcribed the recordings to use as the major source of data.

I supported my data with questionnaires and interviews. The participants who completed questionnaires were twenty-five pilots and twenty-five air traffic controllers. The purpose of the questionnaires was to give an overall idea of
controllers. The purpose of the questionnaires was to give an overall idea of problems in the use of both standard English and Airspeak. The questionnaires contained sections on personal information, use of English in Airspeak and language-based problems. In the interviews with ten pilots and ten air traffic controllers, real-life situations concerning Airspeak were discussed.

In data analysis, I used a discourse analysis approach. I focused on communicative acts of Airspeak such as speech acts and adjacency pairs. I also indicated language-based problems to use as a basis for classroom guidelines.

The results of this study indicate that the distinguishing Airspeak linguistic features include reduced syntactical forms, and specific vocabulary based on ICAO guidelines and standard English. In addition, the findings of this study suggests that pronunciation and listening comprehension are the most important skills to improve. Suggestion for the classroom is to use actual recordings from controllers and pilots to teach. Airspeak. These are crucial for pilots and air traffic controllers, and lead to safety in the sky.
BILKENT UNIVERSITY

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MA THESIS EXAMINATION RESULT FORM

July 31, 1998

The examining committee appointed by the Institute of Economics and Social Sciences for the thesis examination of the MA TEFL student Ayşen Handan Girginer has read the thesis of the student.

The committee has decided that the thesis of the student is satisfactory.

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Approved for the  
Institute of Economics and Social Sciences

Metin Heper  
Director  
Institute of Economics and Social Sciences
to the memory of my mom and dad

I am only sorry they could not share this moment with me
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CHAPTER 1: INTRODUCTION

Today, English is the language of the sky. Pilots and air traffic controllers from different parts of the world share the same language, that is English, in an effort to provide for clear communication. English is the basis for “Airspeak”, the particular language used between pilots and air traffic controllers. While both English and Airspeak usually provide acceptable communication, they are not without problems, as demonstrated in the excerpt below taken from my field notes.

“January 7, 1998 was an unusual day for air traffic controllers at Atatürk International Airport in İstanbul since the automatic radar system was out of order from 11:00 to 13:00. The air traffic controllers were very anxious. I was there at the moment to collect Airspeak recordings. Experienced air traffic controllers had a meeting to discuss the situation. There were two things to do. One was to shut down the airport for three hours. The second one was to use a manual system. After some discussion, they decided to use the manual system to operate the airport. Luckily, I was there and I joined in the discussion about English. Senior air traffic controllers tried to design and check the terminology. They were not able to use Standard Instrumental Departure facilities, therefore, long phrases were chosen to give more detail and be clearer in the absence of the radar system. The most important part of the meeting concerned the choice and design of proper phrases for Airspeak and then teaching these phrases to inexperienced air traffic controllers. Air traffic controllers determined the most necessary sentences to provide proper communication. The second part of the meeting was to decide on the
routes for different arrivals and departures. Three hours later everybody
relaxed. There has been no miscommunication disasters related to human
factor.” (Field notes. January 8, 1998)

The possibility of miscommunication relating to the human factor, as described
above, does not just occur in times of crisis. Problems of miscommunication in the
aviation field can happen any time. They may be based in part on Airspeak and its
distinguishing features. To identify these, this research study is an analysis of the
discourse of “Airspeak” between pilots and air traffic controllers.

Gee (1990, p.11) states that “discourses are ways of life which integrate
words, art, values, believes, attitudes” (Cited in Clarke, 1994). In the aviation world
pilots and air traffic controllers integrate words in a unique way to communicate.
They feel the responsibility for millions of people when they are choosing the words in
the sky. The linguistic characteristics of English such as ambiguity, homophony,
native language interference and repetition all contribute to the problems that both
pilots and air traffic controllers face (Cushing, 1994).

The language used between pilots and air traffic controllers differs from
standard English in that it requires the consistent use of specifically formulated terms.
This is doubly important since a substitution of non-technical terms can cause
misunderstanding and even air disasters. Since the air accidents often occur where
misunderstandings between the tower and the pilots has been a factor, the importance
of using Airspeak cannot be ignored.

A knowledge of English-based technical terms of Airspeak is essential for
pilots and air traffic controllers. The following situation occurred because of an
ambiguity of the phrase “take off”, which can mean either ‘waiting at the takeoff
point’ or ‘already on the takeoff roll’. The aircraft crash took place at Los Rodeos Airport, Tenerife, Canary Islands, on 27 March 1977 (Cushing, 1994, pp. 9-10).

1 1705:44.6 KLM 4805: The KLM four eight zero five is now ready for takeoff
2 and we are waiting for our ATC clearance (1705:50.77.).
3 1705:53.41 Tower: KLM eight seven zero five you are cleared to the Papa
4 Beacon, climb to maintain flight level nine zero, right turn after takeoff,
5 proceed with heading four zero until intercepting the three two five radial
6 from Las Palmas VOR (1706: 08. 09).
7 1706:09.61 KLM 4805: Ah- roger sir, we are cleared to the Papa Beacon,
8 flight level nine zero until intercepting the three two five. We are now at
9 take off (1706:17.79).
10 1706:18.19 Tower: OK . . . Stand by for takeoff, I will call you (1706:21.79)
11 [Note: A squeal starts at 1706:19.39 and ends at 1706:22.06]
12 [PAA: And we’re still taxiing down the Clipper one seven three six (1706:
13 23.6).]
15 1706:25.47 Tower: Ah- Papa Alpha one seven three six report the runway
16 clear (1706:28.89)
17 1706:29.59 PAA 1736: OK, will report when we’re clear (1706:30.69).
18 1706:61 [sic]. 69 Tower: thank you.
19 1706:50: COLLISON: KLM on takeoff run collides with PAA on ground.

Cushing (1994, p.16) indicates that “misunderstanding of the clearance may also have involved a speech-act confusion between an instruction for later and a permission for now, but it may simply have been an ambiguity in the content of the
permission.” In line 3, the controller says “you are cleared” and the pilot thinks he had permission to take off. Moreover, in lines 8 and 9, the pilot says that they are “at the take off” meaning “at the process of take off” but the controller’s next response is to “stand by for take off” in line 10, meaning “wait and I will call later”. The controller in this disaster intended to give instructions later but the pilot thought that he had all instructions and continued with take off. This accident occurred on the ground and 583 people were killed.

Background of the Study

The International Civil Aviation Organization was formed in 1944 (Illman, 1989, p. 24) and required a standard and unambiguous language system for communication between pilots and air traffic controllers. To meet this need, a successful semiartificial international language known as the “lingua franca” of pilots and air traffic controllers was created (Robertson, 1988). Since I have taught a number of pilots and air traffic controllers, the safety issues related to the use of ICAO terminology holds both professional and personal interest to me.

Whereas in discourse analysis many works have been done in areas such as teacher-student talk, telephone conversations, child-adult talk and commercial transactions (Francis and Hunston, 1992). There are few studies on Airspeak between pilots and air traffic controllers. F. A. Robertson (personal communication, December 22, 1997) says she did studies in this field but according to her linguistic theory has progressed since then so her studies are out of date. Another researcher, Vatsndal (1987) analyzed the discourse of pilot-controller exchanges as part of his register analysis. In another study, Cushing (1994) explained language-based
miscommunication problems by examining transcriptions of major aircraft crashes. He claimed linguistic characteristics of English caused the misunderstandings.

Statement of the Problem

Communication between pilots and air traffic controllers is critical; language-based miscommunication problems have caused terrible disasters in the world. Some of these problems are based on varying meanings of a word since words may have different meanings in standard English and Airspeak. Because of this, Ragan (1994) and Robertson (1988) claim that a good level of English proficiency is necessary before studying Airspeak. In addition, since having good knowledge of English is as crucial as having good knowledge of air traffic operations, classes need to focus on both standard English and Airspeak.

Purpose of the Study

The purpose of this study is to investigate “Airspeak” between pilots and air traffic controllers in Turkey by examining the language and the linguistic features which distinguish it from standard language and which may lead to language based language.

In light of the specific features of Airspeak that are found, this study will suggest guidelines for teaching vocabulary, pronunciation, listening and speaking skills in Aviation English courses at the Civil Aviation School of Anadolu University and other pilot and air traffic training courses.

Significance of the Study

This subject is worldwide in context, since the issues relate not just to Turkey but also to all aviation professionals. This study is significant in that it strives to delineate distinguishing features of language used by pilots and air traffic controllers.
These features may play significant roles in planning course content for classes teaching English to both pilot training and air traffic students.

Research Questions

This study addresses the following questions

1. What features distinguish Airspeak from Standard English?
2. In what ways might these differences result in miscommunication?
3. What aspects of Airspeak should be considered when developing guidelines for English language courses for air traffic controllers and pilots?

Definition of Terms

The term “Airspeak” refers to formal air communication language. According to Robertson (personal communication, December 22, 1997) this term builds on the word “Newspeak” coined by George Orwell in his novel “1984”. Newspeak, the official language of Oceania in the novel “1984,” was created to meet linguistic needs of his ideological society. Words were shortened; for example, “Insoc” means English Socialism in this language; and “Minluv” stands for Ministry of Love”. The term “Airspeak” in this study refers to formal air communication language. Likewise, Airspeak was developed to meet the needs of airline personnel.
CHAPTER 2: LITERATURE REVIEW

In Chapter one, I pointed out that the focus of my research is on the linguistic features of Airspeak. Since this focus entails discourse analysis, this chapter will begin with a definition of discourse analysis and the historical background of discourse analysis. The Birmingham model of discourse analysis will be explained in the third part, and the fourth part will be an overview of conversational analysis. In the fifth part, Airspeak will be considered as a genre study. The last section will discuss the use of English in the aviation world.

Discourse Analysis

Discourse analysis is the study of language in use for social action (Mc Carthy, 1991). Stubbs (1983, p. 1) also indicates that “discourse analysis is . . . concerned with language in use in social context, and in particular interaction or dialogue between speakers.” This interaction is studied by researchers in many fields including sociolinguists who “are interested in explaining why we speak differently in different social contexts, and they are concerned with identifying the social functions of language and the ways it is used to convey social meaning” (Holmes, 1994, p. 1).

Gee (1990, p. 95) explains social function in the following way: “When I utter words in conversation, I do more than talk, I also act. By uttering words, I can accomplish various action such as asserting, promising, apologizing, inviting, forgiving, offering, agreeing, rejecting, or denying, and many others. All of these, and many more, are called ‘speech acts’, actions performed by uttering words.” Gee (1990) also believes that “Discourses (Discourse with capital D) involve much more than language”(p. xv). These speech acts have an important role in functional use of language. “The analysis of the functions of language can be referred to as discourse
analysis to capture the notion that is more than a sentence-level phenomenon” (Brown, 1994, p. 235). Though discourse is language viewed at a level greater than sentence; it is made up smaller units. “Linguistic knowledge accounts for speaker’s ability to combine phonemes into morphemes, morphemes into words, and words into sentences. Knowing a language also permits combining sentences together to express complex thoughts and ideas. This linguistic ability makes language an excellent medium for communication. These larger linguistic units are called discourse” (Fromkin and Rodman, 1993, p. 154). Brown and Yule (1983, p. 1) offer one more definition. “The analysis of discourse, is necessarily, the analysis of language in use. As such, it cannot be restricted to the description of linguistic forms independent of the purposes of functions which those forms are designed to serve in human affairs.” All of these definitions indicate that discourse analysis is the study of the language used for a social action in communication.

Historical Background of Discourse Analysis

Discourse analysis “grew out of work in different disciplines in 1960s and early 1970s, including linguistics, semiotics, psychology, anthropology and sociology” (Mc Carthy, 1991, p. 5). However, Renkema (1993) states that the earliest study in this field was done by the Greek philosopher Plato. Plato’s Cratylus is a dialog which describes speech as a form of action and words as instruments with actions. Danish linguistic philosopher Otto Jespersen was also precursor to a discourse approach. He wrote in the introduction of his book ‘Philosophy of Grammar’ in 1924, “The essence of language is human activity on the part of one individual to make himself understood by another, and activity on the part of that other to understand what was in the mind of the first” (quoted from Renkema, 1993, p. 8).
Renkema (1993) presents the Organon Model as one of the earliest works in understanding the characteristic features of the language. The German philosopher and psychologist Karl Buhler (1934) described language as a ‘tool’ for people to communicate with each other. “Buhler’s Organon Model (1934) has had a major impact on the way language is dealt with in discourse studies” (cited in Renkema, 1993, p. 7). Renkema (1993, p. 49) points out that Buhler’s (1934) Organon Model has three main objectives: symbol reflects information meaning informative discourse, symptom relates to expression meaning narrative discourse and signal refers to persuasion meaning argumentative discourse. British J. R. Firth (1935) pointed out that the importance of studying conversation is that it describes the language itself. He says that “We shall find the key to a better understanding of what language is and how it works” (cited in Coulthard, 1988, p. 1).

Schiffrin (1992, p. 33) points out that Harris (1951) was one of the earliest to propose discourse as a unit of speech. McCarthy (1991) states that Zelling Harris published a paper which was called “Discourse Analysis” in 1952. McCarthy (1991, p. 5) indicates that “Harris was interested in the distribution of linguistic elements in extended texts, and the links between the text and its social situation, though this paper is a far cry from discourse analysis we are used to today.”

In spite of the above early research on the social functions of language, it was not until the 1960s that discourse was viewed as an academic field. Both Schiffrin (1994) and Stubbs (1983) point out the two philosophers, John Austin (1962) and John Searle (1969), as early proponents of discourse in their discussion of speech act theory; that is, that language is used to perform actions. Austin gave a series of lectures (1955) and gathered his lectures in a book called “How to Do Things with
Words” in 1962. He believed that communication is nothing without shared knowledge and assumptions between speakers and hearers (Schiffrin, 1994). Schiffrin points out that Searle’s (1969) speech acts based on Austin’s work makes the point that the speech act is the basic unit of communication. Stubbs (1983, p. 149) points out that “… language serves different functions, but such discussions differ greatly in the level of abstraction which they propose.”

Halliday in 1973 stated that there were seven functional categories of language: instrumental is the “I want” function of language, regulatory is the “do as I tell you”, representational is to “represent reality”, interactional is the “me and you” function, personal is “expression of personal feelings”, heuristic is the “tell me why” and imaginative is to “create imaginary system” (Brown, 1993, pp. 232-233 and Coulthard, 1977, pp. 164-165). However Jacobson (1960) presented six language functions. He explained that a phatic function opens contact, an emotive function conveys a need of the addressee, a conative function asks something of the addressee, and referential function makes reference to the world outside the language (Schiffrin, 1994, p. 33). On the other hand “Austin (1962) postulates hundreds or thousands of speech acts, which Searle (1976) then regroups into half a dozen basic categories” (cited in Stubb, 1983, p. 149). It is significant that speech acts and language functions are the main source of the language. Stubb states that “… discourse analysis appears to have to do with discourse acts, which are defined entirely according to their internal function within the discourse itself 1983, p. 149). Stubb (1983, p. 149) defines functions as the expression of psychological states such as thanking, apologizing, and social acts to influence other people’s behavior such as warning, ordering and making contracts such as promising and naming (Stubb, 1983).
Consequently, it is clear that speech acts provide social acts or roles in terms of communication while forming utterances and building social network.

Hymes’s (1972) SPEAKING acronym, described later in this chapter, is a “kind of ethnographer check-list as they observe the ways in which speakers make sense of what counts as a communicative event” (Van Dijk, 1997, p. 239). Hymes’ study is the corner stone of the new attempts in communicative event and their analysis.

While American discourse analysis has been dominated with the work of Hymes (1972), British discourse analysis was developed with the creation of the “Birmingham Model” (1975).

The Birmingham Model of Discourse Analysis

Sinclair and Coulthard (1975) created a model to analyze teacher-student talk. It is known as the Birmingham Model of Discourse Analysis. McCarthy (1991, p. 19) indicates that “the classroom was a convenient place to start, as Sinclair and Coulthard discovered. It is a peculiar place, a place where teacher asks questions to which they already know the answers, where pupils have limited rights as speakers, and where evaluation by the teacher of what the pupil say is a vital mechanism in discourse structure.” On the other hand, McCarthy adds that analysis of classroom talk helps teachers to evaluate themselves.

Willis (1992, p.112) indicates that “The original Sinclair-Coulthard system of analysis is based on Halliday’s (1961) rank scale description of grammar”. Sinclair and Coulthard (1992) point out that in discourse the unit is the lowest rank and has no structure as a morpheme does in grammar. It is the smallest unit which cannot be divided into smaller grammatical units “however, if one moves from the level of
grammar to the level of phonology, morphemes can be shown to be composed of a series of phonemes” (p. 2). Sinclair and Coulthard also agree that “... the smallest unit at the level of discourse will have no structure, although it is composed of words, groups or clauses at the level of grammar” (1992, p. 2).

Sinclair and Coulthard (1975) recorded British primary school lessons. They organized their data ranking as 'Lesson', 'Transaction', 'Exchange', 'Move' and 'Act'. They determined (1992, p.3) that “a typical exchange in the classroom consists of initiation by the teacher, followed by a response from the pupil and followed by feedback, to pupil’s response from the teacher”.

Sinclair and Coulthard (1992, p.8) describe the difference between grammar and discourse: “grammar is concerned with the formal properties of an item, discourse with the functional properties, with what the speaker is using the item for”. According to Sinclair and Coulthard (1992, p.9) there are three overarching acts: elicitation, directive and informative. Elicitation is an act to request linguistic response, a directive is an act to request non-linguistic response and an informative is an act to pass on ideas, facts, opinions, information.

Since the 1970s many different studies have been done based on the Birmingham Model demonstrating how the system can apply to other discourse situations. Francis and Hunston (1987) claim that original Sinclair and Coulthard model (1975) can be adaptable for different discourse works. The aim of their study is to show discourse varieties in “casual conversation between friends and family members, child-adult talk, commercial transactions, professional interviews, radio phone-ins, and even air traffic controllers’ talk” (Francis and Hunston, 1992, p. 123).
The study of Francis and Hunston (1987) is a newly organized form of the Birmingham Model represented through a telephone conversation between two native speakers of English. This type of discourse was chosen for two reasons: first because of the lack of paralinguistic features and secondly it was easy to find a short interaction of some functions as greeting and leave-taking.

It is hard to adapt the Birmingham model of discourse analysis into natural multiparticipant conversation because of its structure. The structure of the model is organized according to exchanges of initiation, response and feedback. This structure changes because conversations are unstructured and free outside the classroom (Mc Carthy, 1991, p. 19).

Conversational Analysis

Mc Carthy (1991, p.6) states that “American discourse analysis has been dominated by work within the ethnomethodological tradition, which emphasizes the research method of close observation of groups of people communicating in natural setting”. Mc Carthy (1991) draws attention to the works of Goffman (1976), and Sacks, Schegloff and Jefferson (1974) as important as the work created by Sinclair and Coulthard (1975). According to Mc Carthy (1991), American scholars called the work ‘conversational analysis’ but it may be considered under the general heading of discourse analysis. Cook (1989, p. 52) states that US scholars are also known as ethnomethodologists “because they (-ists) set out the discover what methods (-methodolog-) people (ethno-) use to participate in and make sense of interaction.”

Conversational analysts try to describe the ways of conversations. Their main question is “How is it that conversational participants are able to produce intelligible utterances and how are they able to interpret the utterances of other?” (Nunan, 1993,
Nunan cited from Levinson (1983) “... conversation is clearly the prototypical kind of language use, the form in which we are all first exposed to language matrix for language acquisition” (Nunan, 1993, p.85). Another claim made by Schiffrin (1994, p. 232) is that “Conversational analysis offers an approach to discourse that has been extensively articulated by sociologists, beginning with Garfinkel who developed the approach known as ethnomethodology, and then applied specifically to conversation, most notably by Sacks, Scheglof and Jefferson.” According to Schiffrin (1994) “Conversational analysis is like interactional sociolinguistics in its concern with the problem of social order, and how language both creates and is created by social context” (p. 232).

Coulthard (1988) states that there are some universal features which all conversations share. The quotation below presents the universal approach to discourse analysis.

Human beings spend a large part of their lives engaging in conversation and for most of them conversation is among their most significant and engrossing activities. ... our understanding of how people conduct conversations by observations has been enriched by observations by psychologists and linguists (generally working under the banner of ‘discourse analysis’) among others.

(Richards and Schmidt, 1983, p.117)

Brown and Yule (1983) explain the distinction between a transactional view and interactional view of conversations. According to the transactional view, language may be used to perform many communicative functions; it is message-oriented language. In the interactional view, language is used “to negotiate role-relationships, peer-solidarity, the exchange of turns in a conversation, the saving of face of both

Hymes (1972) defines a speech community as “shared rules of speaking and interpretation of speech performance” (cited in Saville-Troike, 1980, p. 16). Saville-Troike (1989) states that “in order to describe and analyze communication it is necessary to deal with discrete units of some kind, with communicative activities that have recognizable boundaries. The three units suggested by Hymes (1972) are “situation, event and act” (p.26). In this thesis, I draw on Hymes (1972) in describing discrete units of analysis. The communicative situation is the context within which the communication occurs. In these data it is the airspace around Atatürk International Airport. The communication events is the single event I am focusing on; that is, talk between pilots and air traffic controllers. The communicative act is the interactional functions of speech. In this case it is requests, command, summons and so on.

Renkema (1993) presents Hymes’ (1972) work on speech events which is the basis of ethnographic research. One of his interesting works was to use word SPEAKING as an acronym to create a model.

Hymes’s ‘SPEAKING’ grid for the analysis of the components of communicative events as follows:

- **S  Setting**  Physical circumstances
- **S Scene**  Subjective definition of an occasion
- **P  Participants**  Speaker/sender/addressor
  Bearer/receiver/audience/addressee
- **E  Ends**  Purposes and goals
Outcomes

A  Act Sequences  Message form and content
K  Key  Tone, manner
I  Instrumentalities  Channel (verbal, non-verbal, physical)
                      Forms of speech drawn from community repertoire
N  Norms of interaction and interpretation  Specific properties attached to speaking
                      Interpretation of norms within cultural belief system
G  Genre  Textual categories

(quoted from Van Dijk, 1997, p.240)

Hymes’s SPEAKING acronym is adaptable today in the context of Airspeak. For instance, “Setting” and “Scene” are clear in that the controller is in the tower and the pilot is in the cockpit. “Participants” includes both pilots and air traffic controllers since they share the roles of speaker or hearer. “Ends” relates to giving instruction for controllers and obeying the instruction for pilots or asking for directives and giving directives. “Act” sequences take place in airspeak as a social action in the sky. Pilots and controllers are in society surrounded by social rules used for speech acts. “Keys” refers to the tone and manner. People in this work while guiding a plane and flying are under risk, so their manner of speech is crucial. They have both serious and helpful encounters in the conversation. “Instrumentalities” in speech between pilots and controllers is standard technical language used via radio transmissions. “Norms” the conversation between pilots and controllers does not carry face to face conversational specialties but both pilots and controllers have to listen each other carefully, not to be faced with a difficulty. Repetition gains importance as a check for correction and due
to breaks in transmission where interpretation may occur. "Genre," is the Airspeak of a determined professional group shared and used by pilots and air traffic controllers.

Coulthard (1988) points out that the main point of conversation is that the roles of speaker and listener change and this involves little overlapping speech and few silences. Schiffrin (1994) claims that this natural feature of speaking consists of turn-takings, as described by Sacks, et al. (1974). Renkema further explains turn-taking. "Verbal interaction is realized by turn-taking. This turn-taking can be quite varied. In conversations, there is no limit to the length of a turn. A turn can vary in length from a single word to a complete story" (1993, p. 109). Cook (1989, p. 52) states that "conversational analysis tries to describe how people take turns, and under what circumstances they overlap turns or pause between them". During conversation, turn-taking occurs naturally speakers usually are not aware of transition among speakers. The speaker selects next or next one self-selects. Cook mentions that "efficient turn-taking also involves factors which are not linguistic such as eye contact, body position, movement, intonation and volume, and cultural factors are also effective choosing the way of turn-taking (Cook, 1983, p. 53).

**Adjacency Pairs**

Coulthard (1977, p. 69) states that "Sacks observes that a conversation is a string of at least two turns. Some turns are more closely related than others and he isolates a class of sequences of turns called "adjacency pairs". These adjacency pairs are underlining rules that guide smooth conversations. Richards and Schmidt (1983, p. 128) mention the conversation rules and application of utterances as interactional acts. "One way in which meanings are communicated and interpreted in conversation is through the use of what has been called adjacency pairs. Adjacency pairs are
utterances produced by two successive speakers such that the second utterance is identified as related to the first as an expected follow-up.”

Examples of adjacency pairs in English shown below:

Greeting-Greeting  A: Hello
B: Hi

Summons- Answer A: Jimmy!
B: Coming mother

Question-Answer A: Is that what you mean?
B: Yes

Farewell-Farewell A: OK, see ya
B: So long


The Cooperative Principle

As for conversation, Schiffrin (1994, p.90) mentions, “language can be used for speech acts because people share rules that create the acts”. This is symptomatic of the fact that conversation incorporates both linguistic knowledge and real life knowledge.

In conversation a speaker’s words convey more than linguistic meanings. Logician and philosopher Herbert Grice formulated the use of language in terms of “the cooperative principle”: “make your conversational contribution such as is required, at the stage which it occurs, by the accepted purpose or direction of the speech exchange in which you are engaged” (cited in Renkema, 1993, p.10). Grice’s maxims are represented in Airspeak: two professional groups should be informative as required (Maxim of Quantity); contribution should be true (Maxim of Quality);
information should be relevant (Maxim of Relevance); and people should avoid obscurity of expression, for example, ambiguity, they should be brief and orderly (Maxim of Manner).

In sum, conversational analysis as one aspect of discourse analysis, has enabled researcher to understand language more broadly. Birmingham Model provides another way to look at discourse. As Cook implied (1989, p.58) "The Birmingham School has dealt with formal discourse and with language structures which become evident after the event; the ethnomethodologists have eschewed these large structures and concerned themselves with local transition and only with casual conversation." British work seems to be confusing and structural with strict borders. However, conversational analysts created wide and free borders to relate to natural ways of conversation.

Airspeak as a Genre

From a discourse perspective the word ‘genre’ is used to refer to a category of discourse that may have variation of styles. Bhatia (1997, p.181) maintains that "genres are essentially defined in terms the use of language in conventionalized communicative settings. They are meant to serve the goals of specific discourse communities". Considered in this light, "radio-telephonic air control meets the criteria for genre status" (Swales, 1996, p.60). Swales clarifies the definition of genre in terms of communicative events and communicative purposes:

A genre comprises a class of communicative events the members of which share a set of communicative purposes. These purposes are recognized by the expert members of the parent discourse rationale for the genre" (1990,p.58).
Airspeak incorporates a genre with distinguishing features from standard English. Johnson (1988) explains that "... characterised by such things as ellipsis (missed out words); the inclusion of catch phrases and well meant additions and the creation of jargon, all of which often result in speech which is incomprehensible or too fast for reliable interpretation, or both" (cited in Robertson, 1988, p. ix). As a genre, Airspeak is speech in a specific discourse community in a particular setting.

**Restricted Register**

Brown (1994, p.239) states that "related to stylistic variation is another factor called register. Registers are commonly identified by certain phonological variants, vocabulary, idioms and other expressions that are associated with different occupational or socioeconomic groups." He mentions that professional groups have their particular jargons to interact with each other. In addition, Ragan (1997) explains aviation English as pilots sitting in a cockpit speaking with air traffic controllers to communicate in the sky. He is concerned with the register and restricted register of the language used by the pilots and the controllers. Holmes (1992), describes register as an occupational style of language, for example, a language used by a related group in a related setting. Ragan (1997, p.27) defines restricted register "as a specialized variety of idiosyncratic language use offering a narrow range of options to the user and showing a high degree of predictability in use".

The language used between pilots and air traffic controllers presents limited vocabulary, limited phrases and certain sentences which provide smooth communication. These words, phrases and sentences are English but they exhibit differences from standard language in order to be understood by people from all over the world in the global sky. In the air, pilots and air traffic controllers do not have
much time to speak, so communication is limited to crucial information. Everything should be brief and clear with short sentences.

Specific Vocabulary

Some vocabulary words in Airspeak, are used to shorten speech, such as ‘roger’ and ‘wilco’ which are not the words used in standard English. ‘Roger’ is the most frequently used word, as indicated in the Airman’s Information Manual. This word means “I have received all of your last transmission” (Stewart, 1989, p. 20-21). Another term is ‘Wilco’, which means “I have received your message, understand it and will comply.” This phrase is not used as commonly as “roger.”

In airspeak “the word ‘affirmative’ means the same as ‘yes’ but is more understandable when spoken over the radio” and the word ‘negative means ‘no’ (Nolan, 1990, p.214).

The term ‘radar contact’, consists of only two words but if it is stated in standard English, we need more than two words to describe it. This phrase “informs the controller that the aircraft is identified and approval is granted for the aircraft to enter receiving controller’s airspace” (Stewart, 1989, p. 44).

The word “mayday,” is used in emergency cases. “Mayday” comes from the French M’aidez, pronounced “mayday,” meaning “Help me” (Illman, 1987, p. 95).

Airspeak also has some words or phrases such as ‘go ahead’ which we use in standard English frequently and are understandable by English-speaking people.

There are other standard words and phrases used frequently in airspeak. The following list is taken from ICAO Manuel of Telephony and cited in Robertson (1988, p. xix).
According to Ragan (1997), the reason for the characteristic restricted use of language, such as shortened words and phrases, is that it is predictable. This is crucial for pilots and air traffic controllers since they always speak English to direct, inform, question and answer each other during take off, flight, landing and approach procedures. Ragan (1997, p.28) cited in Halliday (1994) "we can practically view language use as being made up of three areas of meaning: content, exchange, and organization". Ragan (1990) explains that the content of the restricted register of tower communications refers to the referential language of air traffic control phraseology in use between pilots and air traffic controllers. There is also exchange,
meaning in the particular situations of language use. This refers to how meaning is exchanged with regard to information. The language user also needs control over the organization of the wording, to be able to combine wording into logically, meaningful, and connected pieces of language use.

In summary, Airspeak is a conventionalized genre with special words and phrases and linguistic features. It is a particular register used in an occupational setting. It is used widely by people from all over the world to make connections among countries and people.

Use of English in Aviation World

An excerpt from ICOA’s brochure Facts About ICOA, November 1987, says:

In an afternoon’s flight, an airliner can cross the territories of several nations, nations in which different languages are spoken, in which different legal codes are used. In all of these operations, safety must be paramount, there must be no unfamiliarity or misunderstanding. In other words, there must be international standardization, agreement between nations in all technical and economic and legal fields so that the air can be the high road to carry man and his goods anywhere and everywhere fetter and without halt.

(Illman, 1989, pp. 23-24)

According to the above excerpt, standardization of language is crucial. In the field of aviation, safety comes first and to have safe conditions, one must know the correct use of occupational English, because of the risk of language-based incidents and accidents.
Use of Standard English

Regarding Airspeak, Ragan (1994) claims that standard English is as important as aviation English. Pilots and air traffic controllers need a knowledge of standard English. The following story illustrates this:

A group of Russian aviation officials visiting our university told us of the need for their air traffic control personnel to receive English language training. They spoke of a controller at an air field in Russia who was trying to give an English-speaking pilot clearance to take off. However, there was a dog on the runway, and although the controller had been trained in the English of air traffic control, he was unable to communicate to the pilot what the problem was. It seems that the phrase “dog on the runway” had not been part of his training, as it is not found in official International Civil Aviation Organization description of air traffic control phraseology. The Russian officials emphasized the need for general English for their Controllers.

(Ragan, 1994, TESOL Matters, 4, 7.)

Communication in Airspeak requires a wide range of language usage and proficiency. As the above example demonstrates, even the word “dog”, an easy word learned in the beginning level of language study, can be significant that if a pilot or an air traffic controller only studies proper phrases and sentences; therefore, the significance of general knowledge of English cannot be ignored. Ragan (1994) states that students who study ESP need a foundation in standard English. Although the importance of standard English cannot be ignored, sometimes the use of standard English causes mis communications.
Use of Standard English and Miscommunication Problems

Cushing (1994, p. 94) explains “the five components of language understanding.” According to him, these are: vocabulary, grammar, meaning, context and general knowledge. General knowledge is related to real-life knowledge. Although pilots and air traffic controllers have to use standard terminology, they should possess the knowledge of real-life expressions of the language.

Cushing (1994) gives the transcribed data of an aircraft accident in which Spanish pilots insisted on speaking standard, “everyday” English instead of using Airspeak. The pilot did not use proper terms and said “running out of petrol” (lines 2, 5, and 12) which the air traffic controller did not understand and as a result, responded “Is that fine with you and your fuel” in line 13. In this incident, the pilot and copilot spoke in their native language, Spanish, and the controller insisted on using a vernacular form of English. The copilot could not choose the proper term ‘emergency’ and the ensuing exchange between the pilot and the controller resulted in language-based miscommunication and a terrible crash. The following recording was cited in Cushing (1994, pp. 44-45).

1 Pilot to copilot (in Spanish): Tell them we are in an emergency.
2 Copilot to controller (in English): We’re running out of fuel.
3 Pilot to copilot: digale que estamos en emergencia
4 Copilot to pilot: Si, senor, ya le dije.
5 Copilot to controller (in English): We’ll try once again. We’re running out of fuel
6 Pilot to copilot (in Spanish): I don’t know what happened with the runway. I
didn’t see it

Copilot to pilot (in Spanish): I didn’t see it.

Pilot to copilot (in Spanish): [Advise the controller that] we don’t have fuel.

Copilot to controller (in English): Climb and maintain 3,000 and, ah, we’re running out of fuel, sir.

Controller to copilot (in English) Is that fine with you and your fuel?

Copilot to controller (in English) I guess so. Thank you very much.

The pilots should have used “minimum fuel” or emergency fuel” or “in an emergency.” After crash, the national Transportation Safety Board and Federal Aviation Safety reviewed the poor use of correct terms (USA Today, Feb. 22, 1990). Cushing (1994) includes this incident in a broader study of linguistic and cognitive factors in aviation safety involving analysis of air-ground standard language as defined in related books.

Ambiguity in Airspeak

Some phrases used by pilots and air traffic controllers have ambiguous meanings that can cause misunderstanding and miscommunication. For example in the KLM crash described in Chapter 1: the pilot using the phrase ‘at take off’ meant in the process of taking off, whereas controller thought the aircraft was at the take off point. Another accident took place at John Wayne Orange County Airport, Santa Ana, California due to misunderstanding of the word ‘hold’. Cushing (1994, p.11) explains the use of “hold” in aviation phraseology and standard English “‘Hold’ always means to stop what you are now doing and thus to go around in a landing situation; but in everyday English it can also mean to continue what you are now doing and thus to land in such a situation.”
Another miscommunication problem occurred from using ‘things’ by the controller. Because “things” as a word is ambiguous in everyday English when it is used in airspeak it creates even more ambiguity and misunderstanding. It is difficult to know or guess what ‘things’ refers to, as in the accident at Miami International Airport, Miami, Florida (Cushing, 1994, p. 19).

Some near-misses occur as a result of mixing words “flight level” and “heading”; even though these two words do not have ambiguity or homophony. Cushing (1994, p.14) gives the example of homophony while probing the scope of misunderstanding. A controller gives a clearance as ‘two four zero zero’, but the pilot hears it as “to four zero zero and reads back as ‘OK. Four zero zero’. As a result the “aircrafts descends to 400 feet rather than the appropriate altitude of 2.400 feet”.

Nolan (1990, p.14) asserts the same problem “the safe operation of the nation’s air traffic control system ultimately depends on reliable and accurate communication between pilots and air traffic controllers.” Any miscommunication between pilots and air traffic controllers in the air traffic control system may be a direct cause of an aircraft accidents. Cushing (1994) indicates that many of the accidents and incidents occurred because of the misunderstanding and improper use of language. Thus, it is essential that pilots and air traffic controllers have a proper understanding of communication language both in terms of technical use and general knowledge of standard English. Robertson (1988) claims that candidates of pilots and air traffic controllers who start studying Airspeak should have at least ‘low-intermediate’ level of English with the knowledge of the basic tense structures, how to make questions and to understand dialogues.
The studies discussed in this literature review focused on discourse analysis in order to provide a framework for an in-depth analysis of Airspeak. In the next chapter I will explain how I conducted my study.
CHAPTER 3: METHODOLOGY

As mentioned previous chapters, the purpose of this study is to investigate the ‘Airspeak’ between pilots and air traffic controllers; that is, the language used by pilots and air traffic controllers that is particular to them and indicate these differences resulted in misunderstanding. A third purpose is to apply the findings to the classroom setting.

This study was conducted at Atatürk International Airport in İstanbul using Turkish Airlines pilots and air traffic controllers at the İstanbul Air Traffic Center as its subjects. I chose İstanbul Atatürk International Airport because it is the biggest and the busiest International Airport in Turkey and I would get an international exposure to Airspeak. My primary data were recordings (See Appendix A) from Atatürk International Airport, Air Traffic Center; this recorded data were then transcribed and analyzed using discourse analysis methodology after which I triangulated my data through questionnaires and interviews with both pilots and air traffic controllers.

This chapter contains four sections: information on the informants used in the study; instruments that were used in the study, namely recordings of data; questionnaires and interviews; information on how the study was conducted; and articulation of specific steps for data collection. The data analysis section describes how the data were arranged and analyzed in this study.

Informants

The participants who completed questionnaires for this study were twenty-five pilots and twenty-five air traffic controllers. The pilots were chosen randomly by the Turkish Airlines Educational Department Directors from a pool of pilots with at least
five years of experience. The pilots who completed the questionnaire had an average age span of between forty-one and above fifty-one, and between twenty-one and twenty-six years of experience as professional pilots. Twenty-five experienced air traffic controllers were also chosen randomly from those working at Istanbul Air Traffic Control Center. The age and experience of the air traffic controllers was much less uniform, for their age ranged from twenty-five to fifty; and their experience ranged from five to twenty-five years.

After reviewing the questionnaires, I selected ten pilots from among the informants on the basis of both their willingness to relate their experiences and their indications of a special interest in English. I followed the same procedures for choosing interviewees from the pool of air traffic controllers.

Interview questions for both pilots and air traffic controllers (See Appendix D) were divided into three main topics: personal information, their use of English in Airspeak, and explanations of real life situations.

Materials

Questionnaires were administrated to pilots and air traffic controllers in order to obtain their views on using English as ‘Airspeak’. The aim of the questionnaires was to give the researcher an overall idea of both the problems pilots and air traffic controllers had concerning the use of English and their comprehension of Airspeak used in the air and in the tower. Personal information section of the questionnaire (See Appendices B and C) contained four multiple-choice questions to solicit personal data from respondents. In an attempt to get information about the use of standard English and the use of Airspeak I asked thirteen rating-scale questions of air traffic controllers and fourteen rating-scale questions of pilots. Finally, I asked five open-
ended questions of air traffic controllers and four questions of pilots which questions were designed to make respondents recall language related problems they had experienced in their professional lives.

As for the interviews, I asked questions of pilots focused on the use of English during their flights abroad. For air traffic controllers, I asked questions which focused on the language-based events experienced during guiding planes. In addition, some phrases from the recordings I had made were discussed in terms of whether they were correct and created ambiguity.

The primary data for the study were recordings obtained from İstanbul Air Traffic Center on January 6, 1988 and January 7, 1998. I examined three hours of takeoff and landing (GND and TWR) recordings, three hours of approach control (APP) recordings and three hours of area control (ACC) recordings.

Procedures

Getting permission to do this study was a complex and time consuming matter. First I had to get permission from the Turkish State Airport Authority in Ankara in order to make recordings of airspeak. Upon arrival at Atatürk International Airport, I found that I also needed to get permission from the Civil Defense Department as well as security clearance from the Airport Police Station and the Deputy Governor of İstanbul Atatürk International Airport. Since the Air Traffic Control Center of the airport was located on the apron which planes are turned round, loaded, unloaded, I had to get security clearance before entering the apron.

To conduct interviews and to distribute my questionnaires I visited the air traffic controllers and pilots between March 9-15, 1998. Choosing a suitable interview time for pilots and air traffic controllers was difficult as all the pilots and air traffic
controllers maintain an intense work schedule. For example, pilots were coming to the Flight Center for their periodic training and at the same time following their scheduled flight programs. Sometimes I even had to schedule appointments with pilots in the Pilot Room at the airport, which is where pilots go before their flights to brief the crew. As for the air traffic controllers, they work in shifts and during rush hours, they were very busy. In addition to interview time, I spent as much time as possible with both pilots and air traffic controllers in order to get a better sense of their demands of their professional lives.

From March 9-11, 1998, I went to the Flight Center at 9:00 a.m. in the morning following the schedule of the institution’s staff members while there, I made arrangements for my appointments, frequently spending the entire in the Flight Center. On the third day, I went to the Air Traffic Center where I spent my time in the tower with the controllers. Whenever I could find the time after conducting my interviews, I watched the air traffic controllers while they guided air traffic. To my surprise, most of the air traffic controllers had graduated from a Department of English Language Teaching, but they preferred working as air traffic controllers rather than teachers, because they felt that guiding air traffic was more exciting.

I also had help with the organization my schedule both from the Directors of Turkish Airlines and the director of the Air Traffic Control Center. During my interviews, both pilots and air traffic controllers seemed to enjoy answering my questions. The atmosphere was informal, and the interviews lasted about 25-40 minutes. I both recorded and took notes during interviews. The interviews were held in Turkish but questionnaires were given in English.
Data Analysis

Recorded Data

I collected three kinds of data. The first kind was recordings. Schiffrin (1994) claims that tape-recording data is the one way of collecting data so that it can be used in different analyses. In Sack's words "I could get my hands on it and I could study it again and again . . . others look at what I studied" (cited in Schiffrin, 1994, p.235). I made nine hours of recordings and transcription. While listening to those recordings I felt as if I were flying over the countries mentioned in recordings; sometimes I wondered about the aircraft- did it land safely? Other times I put myself in the passengers' places and I felt I was in the plane at take off. I was even excited when airport was busy and the aircraft assumed a holding pattern as it waited to land.

Using Sack's inspiration, I had gotten Airspeak in my hands through these nine hours of recordings. I listened to the cassettes again and again to catch every subtlety. After deciding to analyze the recordings using discourse analysis methodology, I based my analysis on the conversational perspective in order to understand the social aspects of Airspeak. After having listened to the tapes repeatedly, I was ready to begin the task of transcribing the entire total nine hours of recordings.

Transcribing required many different steps: first I numbered each line. I then determined the gender of the speakers including pilots and air traffic controllers; next, I differentiated between the pilots and air traffic controllers, and their technical use of airspdek. Finally, I looked for linguistic differences between Airspeak and standard English.
When analyzing recordings, I focused on adjacency pairs, and the use of speech functions of Airspeak. I also looked at the distinguishing features of the English used between pilots and air traffic controllers, taking excerpts which I numbered and explained from the transcribed recordings.

Airspeak does not ignore the social implications of language in different social context, for even this technical language has its social functions, through they may be different in structure. I indicated those structural variations, which though different in style and form, parallel many social usages in standard English. To demonstrate these structural differences I translated some sentences of the Airspeak into standard English.

In addition, I also focused on the vocabulary and the pitch of the sentences. I represented the phonological features of oral communication in written form using the following symbols:

- Spoken louder : Capitalized words
- Overlapping speech : [   ]
- Voice rises at the end : ?
- Voice rises in the middle : ↑
- Voice falls at the end : •
- Voice falls in the middle : ↓
- Guessed words : (high)
- Incomprehensible words : (......)
- Breathing : h
- Pauses in seconds : (0.5)
Fast speech words run together : *
Elongated words

Questionnaires

My second kind of data was questionnaires. I gave out questionnaires both to pilots and air traffic controllers. As mentioned previously, these contain three parts. In the first part of the questionnaires there were four personal questions such as age, years of experience as a pilot or an air traffic controller, years of formal English Instruction and their assessment of their own English proficiency level.

A section of major important was second part which dealt with use of English. Pilots answered 14 questions designed in 5 columns checking ‘always’, ‘often’, ‘sometimes’, ‘rarely’ and ‘never’ choices. My questions to the pilots also involve the communication of pilots with other people such as copilots, ground crew, air traffic controllers and passengers.

Air traffic controllers checked 13 questions in the part of ‘Use of English’. I categorized the questions in the ‘Use of English’ as use of standard English, use of Airspeak, ease with communication and emergency situations.

The third part of the questionnaire contains ‘explanation’ questions which are related to personal experiences, language based communication problems and more information about the questions asked in the ‘Use of English’. In this section pilots answered four open-ended questions. Air traffic controllers answered five open-ended questions. The answers were categorized to give a clear idea of the opinions of both pilots and air traffic controllers.
I evaluated the answers given to the questionnaires by finding frequencies and percentages. Then I compared the answers of the pilots and the air traffic controllers to discover any differences and tendencies.

Interviews

During the interviews, I talked to both pilots and air traffic controllers about the same topics. I start interviews with personal questions. I intended to learn their educational background in detail to have a sense how they studied English. They told me their real life stories and explained language-based problems they encountered while using English in Airspeak.

I correlated information with questions asked in questionnaire and interviews to integrate the results to the suitable places while analyzing Airspeak. I used excerpts from the transcription and added the results of questions from the questionnaire I obtained. In addition, I integrated this information with the opinions I had during interviews.

Moreover, I designated three tables for explanation part of the questionnaires to indicate clearly. The questions were about the list of the countries both pilots and air traffic controllers face the most severe communication problems and both pilots and air traffic controllers have had a ‘near misses’

Based on my analysis of data I determined the most crucial aspects of Airspeak that every air traffic controller and pilot should know. I used these to develop guidelines for classroom setting. In the next chapter, I will give a detailed account of data analysis.
CHAPTER 4: DATA ANALYSIS

Overview of the Study

The purpose of this study was to investigate "Airspeak," the particular language used by pilots and air traffic controllers. For this study, speech between pilots and air traffic controllers was recorded in Atatürk International Airport in Istanbul. These recorded data include three hours of tapes from three distinct areas: Area Control Center, Approach Control and Tower Control. The primary purpose of obtaining the data in this study was to indicate distinguishing language features of Airspeak, differences between Airspeak and standard English, and language-based problems. Another purpose of the study was to apply these findings to the classroom setting.

Questionnaires were distributed and interviews were conducted to support this study. The questionnaires were given to both pilots and air traffic controllers to ascertain their views on the subject of speaking English while flying and guiding air traffic respectively. During the interviews, subjects were encouraged to add information and share different experiences both about flying and guiding air traffic.

In this chapter, I will begin with background informations about Air Traffic Operations in order to provide a context for the complexity of language used in my data. I will then discuss distinguishing features of Airspeak, differences between Airspeak and standard English, and language-based problems, using excerpts from the recorded data.

Background Information about Air Traffic Operations

The Air Traffic Control Unit at the airport consists of three areas: Area Control, Approach Control, and Tower Control. Tower Control is divided into two
sections as Tower Control and Ground Control. All of the people in this unit are considered air traffic controllers, however they have different areas of control and responsibilities. The Area Control Center (ACC) is responsible for all flights in controlled areas. Approach Control (APP) takes charge of arriving and departing controlled flights. Tower Control (TWR) is a unit that provides air traffic service to aerodrome traffic in landing and take off procedures and guides planes visually without radar. Ground Control (GND) serves ground service for parking, starting engines of the plane and taxiing. The figure below illustrates these areas with their zone of control.

Figure 1: This figure illustrates the areas of air traffic control at Atatürk International Airport by referring the specific altitudes mentioned above.

Area Control (ACC) 17000-46000 ft

→ Approach Control (APP) 3000-17000 ft

→ Tower Control (TWR) 3000 ft to landing

Airport

→ Ground Control (GND) after touchdown

before take off &
Air Traffic Control Center

Istanbul Air Traffic Control Center is located an area near the apron. Area and Approach controllers sit in a large room, following aircraft radar displays. They are constantly busy, checking radar displays, and taking notes all the while talking to pilots. In the tower, controllers watch aircraft with binocular and make telephone calls and to keep in close communication with other sectors of the Air Traffic Controller Center. They have a nice panoramic view of Istanbul and the aircraft.

Description

In order to analyze Airspeak, I found necessary understand the operations of Air Traffic Control Center. These were made clear to me in interviews.

In the following figure, I illustrate the responsibilities of the air traffic controllers in the different sections of the Air Traffic Control Center and indicate the physical locations of the four areas of the Air Traffic Control Center.

Figure 2: The Air Traffic Center at Atatürk International Airport

<table>
<thead>
<tr>
<th>Section</th>
<th>Responsibility</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Control (ACC)</td>
<td>Provides transition from one destination airspace to the next using radar</td>
<td>Room in Air Traffic Center</td>
</tr>
<tr>
<td></td>
<td>Transfers control of descending plane to APP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accepts control from APP of climbing flights</td>
<td></td>
</tr>
</tbody>
</table>
Approach Control (APP)  Takes control from ACC for descending flights until they transfer control to the TWR Gives pilot an “approach path that aligns the plane with the runway using radar

Tower Control (TWR)  Works visually with pilot to effect a safe landing Once plane lands, contact GND and turn plane over

Ground Control (GND)  Issues taxi clearance that takes plane from departure to runway the reverse. Responsible for any vehicles that enter the airport movement area

As passengers, while we eat, drink and watch movies on the plane, we do not consider the complicated communication that transpires between air traffic controllers and the pilot. The following scenario, as described to me in interviews, illustrates this complexity.

Take-off Scenario

A flight begins the predeparture procedure when ground control gives permission to start the engine and taxi to the runway. Then authority is transferred to the tower, and the tower gives final permission to take off. The following figures demonstrates start-up permission given by Ground Control (GND). The words in
Figure below are taken directly from my recordings. (Transcript lines 2730-2738, 2750-2752, and 2780-2793)

Figure 3 below demonstrates transcription of Ground Control exchange.

Figure 3 Transcription of Ground Control exchange

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Ground Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Ground Lufthansa three four seven now clear for start up</td>
<td>2 Lufthansa three four seven ground is approved</td>
</tr>
<tr>
<td>3 Approved Lufthansa three four seven</td>
<td>4 Lufthansa three four seven please</td>
</tr>
<tr>
<td>Pilot continues 1.34 minutes later</td>
<td>(.....) approach runway three six</td>
</tr>
<tr>
<td>Lufthansa three four seven request push back</td>
<td></td>
</tr>
<tr>
<td>destination one one</td>
<td></td>
</tr>
<tr>
<td>5 Runway three six Lufthansa three four seven</td>
<td>6 Taxi to holding point runway six via way seven south</td>
</tr>
<tr>
<td>4.2 minutes later</td>
<td></td>
</tr>
<tr>
<td>Lufthansa three four seven ready for taxi</td>
<td></td>
</tr>
<tr>
<td>7 Taxi to holding point runway three six Lufthansa three four seven</td>
<td>8 Affirm via taxi way seven right turn then left</td>
</tr>
<tr>
<td>9 First right turn (.....) then left Lufthansa three four seven</td>
<td>10 Air traffic clears destination Frankfurt via Whisky</td>
</tr>
<tr>
<td>(0.24)</td>
<td>seven flight level one six zero</td>
</tr>
<tr>
<td>Ready to copy Lufthansa three four seven</td>
<td>after take off Bogaz one Echo squawk Alpha five</td>
</tr>
<tr>
<td></td>
<td>three one zero</td>
</tr>
<tr>
<td>11 Lufthansa three four seven clear to destination Frankfurt initially</td>
<td>12 Affirmative contact tower one one eight one</td>
</tr>
<tr>
<td>flight level one six zero Bogaz one Echo squawk Alpha five</td>
<td></td>
</tr>
<tr>
<td>three one zero</td>
<td></td>
</tr>
</tbody>
</table>

In the above exchange, the Ground Control approves the start up for take off in line 2 and provides transmission frequency number as “one one eight one” in line 12.
The ground controller completes his duties by giving a new frequency for the pilot to contact. This new frequency is that of Tower Control. The Tower controller works visually. When he or she sees the plane, she starts with giving directions for take off and informs the pilot about the wind position, and then gives the frequency number to contact Approach Controller. Figure 4 demonstrates transfer of the aircraft to Approach Control. (Transcription lines 2795-2798 and 2809-2814)

Figure 4 Transcription of Tower Control exchange

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Tower Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Tower control good afternoon Lufthansa three four four seven</td>
<td>14 Three four seven good afternoon continue taxi holding point runway three six</td>
</tr>
<tr>
<td>15 Continue holding point runway three six Lufthansa three four four seven response 2. 25 minutes later Tower Lufthansa three four four seven ready for departure</td>
<td>16 Three four four seven clear for take off three six two one zero four knots take off contact one two one one</td>
</tr>
<tr>
<td>17 Three four four seven clear for destination after airborne one two one one</td>
<td>18 Goodbye</td>
</tr>
</tbody>
</table>

In the exchange above, the controller gives permission to take off and be airborne in line 16. In addition the controller gives a new frequency number for the pilot to contact for the rest of the flight in line 16. After take off, the aircraft is in contact with Approach Control. Figure 5 demonstrates that controller deals with continuing the flight and guiding the aircraft to climb to sixteen feet. (Transcription lines 1800-1803)
Figure 5 Climbing operation with Approach Control.

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Approach Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 Good morning Turkish one nine zero seven just airborne runway heading</td>
<td>20 One nine zero seven good morning radar contact climb and maintain flight level one six zero maintain runway heading</td>
</tr>
<tr>
<td>21 Runway heading until one six zero nine zero seven</td>
<td></td>
</tr>
</tbody>
</table>

In the figure above, the controller directs the aircraft to climb to a proper altitude in line 20. In Figure 6 below, after the proper altitude is achieved, the controller requests the aircraft to contact Area Control in line 24. (transcription lines 1580-1583 and 1616-1618)

Figure 6 Transcription of Approach Control exchanges

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Approach Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 Turkish two six zero proceed to Bravo Zulu then Toker</td>
<td></td>
</tr>
<tr>
<td>23 Direct to Bravo Kilo Zulu then Toker Turkish two six zero</td>
<td>24 Affirm Turkish two six zero contact Istanbul one one niner decimal three</td>
</tr>
<tr>
<td>25 Niner three thank you bye</td>
<td>26 Bye bye</td>
</tr>
</tbody>
</table>

In Figure 6 above, in line 24 the controller gives the frequency number for the Area Control Center and transfers responsibility.

In Figure 7 below, the controller in the Istanbul Tower transfers the aircraft to Bulgarian FIR (line 27). (Transcription lines 1389-1391)
Figure 7 Transferring operation with Area Control.

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Area Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 Fed Ex five Zulu position over Radovets contact Sofia one two eight four</td>
<td></td>
</tr>
<tr>
<td>28 One two eight four FedEx five Zulu goodbye</td>
<td></td>
</tr>
<tr>
<td>29 Bye</td>
<td></td>
</tr>
</tbody>
</table>

Figure 7, above, demonstrates the final responsibility of the controllers. After Approach Control, Area Control guides the plane as it continues to climb and maintain altitude in the area called Flight Information Region (FIR) the territorial boundaries in the space with neighbor countries in the air. The controller makes a telephone call fifteen minutes before changing the flight region for each flight. The controller has to inform the controller in Sofia in the neighboring country. Later the aircraft is transferred another FIR to continue flying.

**Standard Terms and Phrases in Airspeak**

As can be seen above, smooth take off procedures depend on linguistic communication. The communication features of Airspeak resemble English, but have their own vocabulary and syntax. One set of vocabulary items consists of the replacement of words for letters. In Airspeak, letters are replaced with particular words to provide easy and clear speech. In the following figure reflects the words which are substituted for letters in Airspeak.
### Figure 8 Letters and Their Codewords

<table>
<thead>
<tr>
<th>Letter</th>
<th>Phrase</th>
<th>Letter</th>
<th>Phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Alpha</td>
<td>N</td>
<td>November</td>
</tr>
<tr>
<td>B</td>
<td>Bravo</td>
<td>O</td>
<td>Oscar</td>
</tr>
<tr>
<td>C</td>
<td>Charlie</td>
<td>P</td>
<td>Papa</td>
</tr>
<tr>
<td>D</td>
<td>Delta</td>
<td>Q</td>
<td>Quebec</td>
</tr>
<tr>
<td>E</td>
<td>Echo</td>
<td>R</td>
<td>Romeo</td>
</tr>
<tr>
<td>F</td>
<td>Foxtrot</td>
<td>S</td>
<td>Sierra</td>
</tr>
<tr>
<td>G</td>
<td>Golf</td>
<td>T</td>
<td>Tango</td>
</tr>
<tr>
<td>H</td>
<td>Hotel</td>
<td>U</td>
<td>Uniform</td>
</tr>
<tr>
<td>I</td>
<td>India</td>
<td>V</td>
<td>Victor</td>
</tr>
<tr>
<td>J</td>
<td>Juliett</td>
<td>W</td>
<td>Whiskey</td>
</tr>
<tr>
<td>K</td>
<td>Kilo</td>
<td>X</td>
<td>X-ray</td>
</tr>
<tr>
<td>L</td>
<td>Lima</td>
<td>Y</td>
<td>Yankee</td>
</tr>
<tr>
<td>M</td>
<td>Mike</td>
<td>Z</td>
<td>Zulu</td>
</tr>
</tbody>
</table>

In addition to code words, my transcripts mention five letter name-codes to designate particular points in the air over İstanbul. These are Adeli, Amani; Boğaz, Sadık, Deniz, Ersen, Golda, Gotan, İmren, Kargı, Liman, Makol, Mosar, Rixen, and Toker. (See Appendix E).

### Written Conventions of Speech

This study “freeze-frames” speech, converting it into a written form which represents the para-linguistic features of speech. In written form it is difficult to convey the message of the speaker and (Langford, 1994, p. 32). Therefore, in the transcription, I indicate particular phonological features of speech by using symbols shown in Chapter 3. This section illustrates two more symbols: rapid speech and loud speech.
Rapid Speech

In Expert 1 below, the pilot is from British Airways and is a native speaker of English; the controller’s first language is Turkish. Rapid speech is indicated by the symbol “*” to indicate little if any pause between the words. The letter “P” refers to pilot.

Excerpt 1: Rapid Speech (Transcription lines 45-50)

30  P  : Erh Spedbird six seven six flight level two five zero↓ approaching↑ Rixen
31       e and requesting ↓ further ↓ descend •
32  ACC: Roger Speedbird six seven six clear to descend ↑ one seven zero
33       and: ↑ proceed to Adeli *call *over *Adeli?
34  P  : Erh descend flight level one seven↑ zero↑ will report Adeli ↑
35  Speedbird six seven six↓ and estimating Adeli one one two six•

In the above excerpt the controller speaks very rapidly. In line 33, as can be seen from the symbol *, the controller runs the words together. In oral interaction, the speaker uses his or her pitch to clarify as well as paralanguage message but this is not shown in standard written speech. Using speech symbols helps indicate its perceptibility of transcribed speech. As mentioned in Chapter 2, requesting information and asking questions in Airspeak can be accomplished through the use of intonation, pitch, and stress. In the excerpt above, pilot’s speech has speech fillers such as ‘eee’ as shown in line 30. The pilot’s voice rises while uttering numbers in line 34. As shown in line 33 the controller indicates that the sentence is a question by rising her voice at the end of the sentence as shown in line 46. She also stretches the
word "and." At the end of her directive, she speaks very fast and runs her words together.

**Loud Speech**

In the excerpt below, capitalized letters are used to indicate loud speech. One pilot (P₂) works for Alitalia, an Italian Airline and the other pilot (P₁) works for Sabena, Belgium. The controller is Turkish and female.

Excerpt 2: Loud speech (Transcription lines 487-493)

36 ACC: Alitalia seven zero zero now proceed to (the) Deniz intersection↓
37 hold over Deniz ↓ and continue ↓ descend↑ the level↓ two↓:
38 (0.2) two three zero•
39 P₁ : (0.3) for Sabena three two one?
40 ACC: NEGATIVE I AM CALLING ALITALIA SEVEN HUNDRED?
41 P₂ : Say again?
42 ACC: ALITALIA SEVEN HUNDRED proceed to DENIZ Intersection and
43 hold over Deniz continue descend TWO THREE ZERO?

In line 39, Sabena’s pilot questions whether the controller’s directive is for him. The controller loudly responds in the negative. In line 41, then, Alitalia’s pilot asks for a repetition. Again the controller responds in a loud voice emphasizing the most important words.

**Distinguishing Features of Airspeak**

Speech acts in discourse analysis focus on the social dimensions of language. Communication between pilots and air traffic controllers contains functions of language that are technical, but also exhibits speech acts similar to standard English such as requesting, greeting, giving directions, commanding, interrupting,
apologizing, making excuses, asking for time, complaining, respecting and complimenting. All of these indicate a social life, even in the sky.

In the following section I discuss speech acts, adjacency pairs, specific terms, and the pronunciation of numbers.

**Speech Acts**

Speech acts are basic to all communicative situations, but they vary from setting to setting (Hymes, 1972). The sentences used in Airspeak have different structures than standard English. This section gives examples of speech acts: requesting, giving directions, request-denial, self correction, identifying, addressing, respecting and joking.

**Requests**

In Airspeak, pilots use the word “request” to ask for permission to descend, climb or to ask for the time of approach. In the excerpts below, there are examples of pilots’ requests. In excerpt 5, the pilots either use the phrase “would you like us” or standard English instead of using the word “request” in Airspeak.

Excerpt 3: Requesting (Transcription lines 24-25)

44 P : Constellation three one zero three requesting descent

45 ACC: Constellation three one zero three clear to descend

Excerpt 4: Requesting (Transcription lines 1210-1213)

ACC : Turkish one six seven three good afternoon climb and maintain flight level

two six zero

P : Flight level two six zero requesting three five zero

ACC: Standby
Excerpt 5: Requesting using “would you like us” (Transcription lines 1078-1081)

50 ACC: Spar one two Charlie Istanbul
51 P : Spar one five two Charlie go ahead
52 ACC: Expect level two seven zero for you due to traffic
53 P : Okay two seven zero would you like us to descend right now

Request for Time

In the excerpts below, pilots are asking the time of approach in different ways using phrases such as “looking for”, “estimating clearance”, “give me . . . time”, “need an . . . time”. In response, the air traffic controller pronounces each digit individually.

Excerpt 6: Asking for time (Transcription lines 2351-2353)

54 P : Turkish one three seven one looking for approach time please
55 APP: Turkish one three seven one expected approach time will be one zero five eight

Excerpt 7: Asking for time (Transcription lines 624-625)

57 P : Air France one five nine zero can you give me approach time also
58 ACC: Air France one five nine zero expected approach time is five five

Excerpt 8: Asking for time (Transcription lines 614-615)

59 P : İstanbul KLM one zero seven we need an estimated approach time
60 ACC: KLM one zero seven contact on two one one

Giving directions

In Airspeak, pilots ask for directions to determine their location on the ground. The controller gives direction using the words such as “left,” “right,” “south,” “north,” “via” and also they use “first,” “then” or “next” to put the instruction in an order.
Excerpt 9: Giving direction (Transcription lines 3050-3052)

P : Ground Turkish eight zero seven runway vacated

GND: Eight zero seven continue taxi right turn first next left via Tango seven gate

number is zero one

Excerpt 10: Giving direction. Example 2 (Transcription lines 3064-3066)

P : Ground good afternoon KLM one zero seven taxiing

GND: Good afternoon KLM left turn and (...) gate one one zero

P : Okay left turn and gate one one zero

Request-Denial

In the excerpts below, request and denial are illustrated. In line 69 the pilot requests to climb to level three seven zero. The controller does not accept the request (line 70) and gives an explanation of why it is impossible (line 71). In excerpt 11, the controllers begin refusals by using the word “negative” (line 74) then they explain their reasons as shown in line 75.

Excerpt 11: Request-Denial (Transcription lines 841-845)

ACC: Jordanian one six six good afternoon climb and maintain flight level two

seven zero

P : Two seven zero requesting three seven zero

ACC: Jordanian one six six expect final level at two seven zero in Istanbul FIR sir

we have the traffic

Excerpt 12: Request-Denial (Transcription lines 1261-1262)

P : Air France one five niner one may be expect flight level three five zero as

cruising level
ACC: One five nine one it is negative sir you have (the) traffic opposite target

flight level three three zero just passing Romeo Alpha Delta

Self-correction

In the excerpts below, the word “sorry” or “correction” is a marker of a mistake (lines 76, 82, 85). The speaker then makes correction. The Turkish expression in line 78 means thank you sir, thanks.

Excerpt 13: Self-correction by the controller (Transcription lines 1527-1531)

APP: Charlie November Kilo after Deniz proceed direct to Tekirdağ sorry Turkish

Charlie November Kilo after Deniz proceed direct to Çanakkale

P : After Deniz direct to Çanakale teşekkürler efendim sağolun

Excerpt 14: Self-correction by the pilot (Transcription lines 1990-1993)

APP: Onur Air one niner three two clear to descend flight level six zero confirm
descending to inbound now

P : We are just inbound to Sadık (......) five miles to Sadık and descending

five zero sorry six zero

Excerpt 15: Self-correction using the word correction (Transcription lines 256-258)

ACC: Turkish one five zero five roger climb to level two eight zero

P : Climbing two eight zero one five zero five

ACC: Turkish one five zero five correction climb to level two six zero

Identification

In airspeak, the names of the pilot and the controller do not carry importance but the controller needs to identify the aircraft and must know the ‘call sign’ of the aircraft for registration. Aircraft are identified by call signs, which are the name of the aircraft followed by the flight number. Each airline company has a three-letter
identification. For instance, Delta Airlines is DAL, British Airways is BTA. The identification procedure also involves the type of aircraft and the serial number of it. The excerpts below also illustrate the function of request.

Excerpt 16: Identification (Transcription lines 3222-3225)

TWR: Sabena three two one registration

P: Registration Oscar Oscar Sierra Delta Mike Sabena three two one

TWR: Oscar Oscar Sierra Delta Mike copied change frequency one two one eight

P: Two one eight Sabena three two one good bye

Excerpt 17: Identification (Transcription lines 3206-3210)

TWR: Seven six one registration

P: Registration is (Sierra) Echo Delta India Uniform

TWR: (Sierra) Echo Delta India Uniform type of aircraft

P: MD eight zero departed Copenhagen

TWR: Roger contact one two one eight

Addressing

In the excerpts below, both pilots and air traffic controllers are polite and formal during airspeak. They generally communicate with each other using the call sign of the aircrafts, but sometimes they use “ma’am” for women and “sir” for men.

Excerpt 18: Addressing a woman (Transcription lines 5-7)

P: One seven eight three passing Makol flight level two four zero

ACC: One seven eight three roger change Varna one three seven six five

P: Good bye ma’am
Although English is the language used in airspeak, pilots and air traffic controllers may use different languages in greetings and farewells. For example, Turkish pilots may use the language of the country whose airspace they are currently occupying and the controller might use the language of the pilot’s native country. This is called a “grace-code” (interview dated on March 11, 1998). The purpose of using a grace-code is to compliment and show respect. The words act like a “social lubricant” to provide warm, sympathetic communication between two people who do not see each other but need to communicate with each other.

Consider the following excerpt:

Excerpt 20: Turkish greeting used by Austrian pilot (Transcription lines 1068-1071)

P: Istanbul Austrian eight nine four günaydın
ACC: Günaydın Austrian eight nine four climb and maintain flight level four zero
P: Flight level two four zero Austrian

Excerpt 21: Turkish greeting and thanks used by German pilot (Transcription lines 1219-1222)

P: Istanbul iyi günler Lufthansa three four five four level two nine zero
ACC: İyi günler Lufthansa three four five four radar contact runway three six
P: Three six teşekkürler
ACC: Rica ederim
Excerpt 22: Italian leave-taking used by Turkish controller (Transcription lines 1308-1309)

ACC: Alitalia seven zero three approaching to Goldo change Athens one two
five point niner radar service terminated ciao

In excerpt 20, the Austrians pilot says ‘good morning’ in Turkish. In excerpt 21, German pilot says ‘good day’ and ‘thanks’ in Turkish. The response of air traffic controller is also in Turkish, the controller says “you are welcome”. In excerpt 22, Turkish controller says “good bye” in Italian.

In the questionnaire, pilots and air traffic controllers were asked whether they mix Turkish and English at work. Most (64%) air traffic controllers claim that they never mix Turkish words when they are speaking English while controlling air traffic. Likewise, 68% of the pilots say they never mix Turkish words when they are speaking during their flights. This finding seems to conflict with the recorded data; however, during the interviews, both pilots and air traffic controllers discussed this issue. They said that using grace-codes is an international tradition, and both groups indicated that though it is accepted behavior, that does not mean that it causes problems while guiding aircraft and flying. It is conscious speech, they claim, and therefore neither pilots nor air traffic controllers perceived it as mixing languages. A former pilot of Northwest Airlines, Gifford T. Jones (personal communication, June 23, 1998) confirms that “such a greeting is primarily reflective of a pilot’s own personality, and how congested the radio frequency is.”
Joking

Though guiding a plane through take-off and landing procedures is serious business, sometimes air traffic controllers make jokes. One of the interviews produced the following playful language.

Controller: Speedbird ......use caution there is construction work right side of the airway Vector Alpha four

Pilot : Say again

Controller: This is a New Year surprise

The pilot is surprised when he hears this statement. Of course the airway is an invisible path in the air; there is no possibility of having construction work in the airway.

Generally air traffic controllers and pilots can recognize each other’s gender from their voices, but sometimes they make mistakes. Sometimes they also make playful comments. One of the controllers is a man with high-pitched voice that sounds like that of a woman. In one of my interviews I was told that the following dialogue occurred:

Pilot : ..........ma’am

Controller: Lufthansa..............

Pilot : Go ahead

Controller: I am not a ma’am, I am he-man

It was told me by one of the interviewees that on one occasion two aircraft were at same flight level and the controller requested permission to change the flight level of the aircraft. The controller instructs:
Controller: Climb and maintain flight level three five zero

Copilot: We are able but my captain is very happy at flight level three one zero

Controller: Roger leave your captain at three one zero climb flight level three five zero

Adjacency pairs

Successful conversations after contain adjacency pairs (Richards and Schmidt, 1983, p. 128) in which the first utterance is the first pair part and the next utterance follows the first one with a related second part. The basic structure of adjacency pairs provide turn-takings. The excerpts below, illustrate openings and closings as adjacency pairs. The two groups, pilots and air traffic controllers use adjacency pairs in both formal and informal ways to convey a clear message.

Openings

A greeting utterance follows a greeting as in excerpt 23

Excerpt 23: Greeting-Greeting (Transcription lines 17-18)

P : Good afternoon Turkish one one niner zero

ACC: Good afternoon Turkish one one nine zero go ahead

Closings

Closings in airspeak are informal and friendly, similar to those used in standard English.

Excerpt 24: Closing-Closing (Transcription lines 247-248)

P : One one nice day

ACC: Bye bye
Thanking

In Excerpt 25 below, an adjacency pair exchange closes the conversation. As in standard English, “Thank you” is the first pair part of the exchange and the second pair part is “you’re welcome”. In this excerpt, two speakers completed the two parts of the adjacency pairs.

Excerpt 25: Thank you-You are welcome (Transcription lines 785-786)

113 P : Two seven zero thank you very much Turkish six nine zero
114 ACC: You’re welcome

Summons

In Excerpt 26 below, the first utterance is produced by the air traffic controller and the next utterance comes from the pilot who needs to contact the controller. In line 115, the controller is asking which pilot wants to contact the controller for new instructions.

Excerpts 26: Summons-Answer (Transcription lines 3042-3044)

115 GND: Station calling
116 P : Ground Onur Air two niner niner seven stand number one seven request
117 push back and start up

Major Differences Between Airspeak and Standard English

“We live in a word of language” (Fromkin and Rodman, 1993, p. 2). Nevertheless, language varies in different communication situations. Airspeak is distinguished from standard English. Language styles change according to setting and participants (Hymes, 1972). In a casual setting, people produce more relaxed speech and use a colloquial or vernacular style.
As seen in the previous excerpts, both pilots and air traffic controllers use technical terms more than they use standard English while working. In interviews and questionnaires, they state that their command of Airspeak is better than that of standard English. This may be because Airspeak is a technical language, which is more codified. According to the ten pilots and ten air traffic controllers I interviewed, it is easy to learn technical phrases and sentences in real life situations that occur while flying and controlling air traffic.

Airspeak was created to provide concise and precise communication (Illman, 1989). As a result, there are some differences both in the words and the structure of sentences. The following examples of airspeak and standard English illustrate some of the differences.

**Figure 9: Explanation of Airspeak in standard English**

<table>
<thead>
<tr>
<th>Airspeak</th>
<th>Standard English Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alitalia seven hundred good morning go ahead</td>
<td>Good morning Alitalia seven hundred tell me what you need.</td>
</tr>
<tr>
<td>Clear to destination Amsterdam via Whisky nine seven flight level initially one six zero after take off Bogaz one Echo departure squawk Alpha five three one six over</td>
<td>You are given permission to fly to Amsterdam through the route Whisky nine seven. When you take off stay at one six zero following the Bogaz point through one Echo squawk Alpha five three one six. This is the end of what I am saying to you.</td>
</tr>
<tr>
<td>Speedbird six seven six confirm requesting descent</td>
<td>My identification is Speedbird six seven six. I would like to go to a lower altitude. Please tell me this is possible.</td>
</tr>
<tr>
<td>Onur Air one one four you are broken say again</td>
<td>Onur Air one one four. I cannot hear you. Please repeat your message.</td>
</tr>
</tbody>
</table>

The syntax of Airspeak represents particular sentence structure and words. Fromkin and Rodman (1993, p. 73) state that "sequences of words that conform to the rules syntax are said to be well formed or grammatical and those which violate the syntactic rules are therefore ill formed and ungrammatical." Airspeak has distinctive grammatical rules. Both pilots and air traffic controllers do not make use of personal
pronouns such as I, you, he. Auxiliary verbs are omitted, but this omission does not cause miscommunication. In the excerpt below, omission of “be” is seen but additions at the end of the verb tenses indicate the tense of the sentences properly.

Excerpt 27: Sentences of Airspeak in Present Continuous Tense (Transcription lines 1556-1561)

P : Approach Delta seven two leaving flight level two on zero for one seven zero

APP: Delta seven two proceed Charlie Echo Kilo descend to flight level one two zero good morning

P : Descending to flight level one two zero proceeding direct Charlie Echo Kilo good morning

In the excerpt above, the pilot indicates his present position in line 93 without using “am,” “is,” “are.” The omission of auxiliary verbs does not affect the communication, the -ing form of the sentence indicates what the pilot doing at that moment. The pilot indicates he is carrying out the instruction in line 118.

Excerpt 28: Sentences of Airspeak in past tense (Transcription lines 2518-2522)

APP: Aeroflot five zero three Charlie confirm turning inbound to Sadik

P : Roger turning right inbound to Sadik

APP: Aeroflot five zero three Charlie copied cleared for ILS approach runway three six from Sadik intersection leave Sadik flight level five zero or above report establishing localizer.

In the excerpt above, (line 126) the controller uses the past tense “copied” and “cleared” to indicate the event in the instruction has finished.
Excerpt 29: Emphasized sentence in Airspeak (Transcription lines 3854-3857)

129 GND: Lufthansa three five three four five four turn left first to right then hold position before entering information level

130

131 P : Lufthansa three four five confirm first to right and then hold position

132 Ground be confirm first right now and holding position then (after)

In line 129 above, the controller confused the call sign numbers of the aircraft. The pilot might have thought he missed some details so he repeated the command. In line 132 he repeated the information to emphasize it using the verb “be.”

Excerpt 30: Sentences of Airspeak in question form (Transcription lines 552-553)

133 ACC: Sabena three two one ee affirm proceed to Deniz hold over Deniz

134 P : Reducing the speed now how long delay for the holding?

In excerpt above, the sentence seems ill formed but in Airspeak, it does not cause a problem or miscommunication. In my transcription, the controller did not answer this question.

Specific Terms

Airspeak has many specific terms identified with it, but I will discuss only three of them: “roger,” “break,” “affirm.”

Break

In excerpt 31 below, the word “break” is used in standard Airspeak as a discourse marker to indicate the end of the speech. The controller is in contact with a Pakistani pilot and the pilot of Istanbul Airlines interferes the speech. The controller used “break” to indicate the end of the answer for the pilot of Istanbul Airlines in line 137, and continues to speak with Pakistan Airlines.
Excerpt 31: Break (Transcription lines 99-103)

ACC: Pakistan seven five one continue descent to level two eight zero

P₁: Istanbul one three two (did) you call me

ACC: Roger sir copied and break Pakistan seven five one continue descent to level two eight zero

P₂: Two eight zero Pakistan seven five one thank you

Roger

In excerpt 32 below, the most commonly known word in Airspeak exchanges, “roger” is used. It is a short word, easy to understand. Its simplified meaning is “I have received all of your last transmission” (Robertson, 1988, p.xx). It is similar to ‘okay’ or ‘I got it’ in standard English.

Excerpt 32: Roger (Transcription lines 287-288)

ACC: Istanbul one three two request out of level

P: Crossing two hundred Aeroflot five zero three

ACC: Roger

Robertson (1988, p.xx) points out that one should “never use ‘roger’ in reply to a question which needs read-back, or an answer ‘affirm’ or ‘negative’. In the example below, however the controller uses the word “roger”. After that the controller concludes the connection with Sun-Express and indicates by saying “break” that the message is for Onur Air in line 118.

Excerpt 33: Use of the term Roger (Transcription lines 217-221)

P: Istanbul Onur Air one one four request (……)

ACC: Onur Air standby
ACC: Sun-Express three six one request out of level

P : Two three zero descending one seven zero

ACC: Roger break Onur Air one one four clear to descend level two four

zero

Affirm

In interviews, three out of ten air traffic controllers state that the end sounds of words cannot be distinguished clearly and this has caused some near-misses. One of the informants related a misunderstanding she had in the utterance of “affirmative” and “negative.” For this reason controllers are taught to use the word “affirm” instead of using “affirmative” so as not to cause misunderstanding. Although these two words have opposite meanings their similar ending creates confusion. Today both “affirm” and “affirmative” are used in airspeak. In excerpt below, the controller used “affirmative” once and used “affirm” twice in immediate response.

Excerpt 34: Affirm-Affirmative (Transcription lines 1589-1596)

APP: Delta seven two descend to flight level six zero

P : Is that six zero for Delta seven two

APP: Affirmative

P : Delta seven two descending flight level six zero

APP: Affirm

P : Delta seven two keep speed up

APP: Affirm

P : Seven two
In Airspeak, the rule is that numbers are read separately, for example the frequency 132.25 is read as “one three two point two five,” but one of the interviewees told me that in the United States read it as “one thirty two and a quarter” (interview dated on March 12, 1998) 

In the transcriptions of recordings, I observed different readings of numbers. Excerpts 36 and 37 below show numbers pronounced in different ways.

Excerpt 36: Using integrated numbers (Transcription lines 885-887)

P : Air Alpha triple six requesting descent further please
ACC: Air Alpha triple six clear to descend flight level one seven zero
P : One seven zero triple six

Excerpt 37: Using integrated numbers (Transcription lines 1759-1761)

APP. Istanbul double two double one contact one one niner decimal three
P : Three Istanbul two two one one

Excerpt 38: Pronouncing nine as “niner” (Transcription lines 2986-2988)

P : Ground Turkish one niner niner one ready for taxi
GND: Taxi to holding point three six straight ahead
P : Straight ahead three six one niner niner one
Language-Based Problems

Communication has been an issue of importance when the languages are different. Some aircraft disasters have occurred because of language-based miscommunication in the world. The use of standard English and vernacular terms has caused air crashes discussed in Chapter I (Cushing, 1994). Both pilots and air traffic controllers agree that using technical language prevents language-based misunderstandings in spite of the fact that inference of native language affects pronunciation. If the controller or the pilot has a strong accent, it creates communication problems (personal communication, March 10-12, 1998).

Countries Where Communication Difficulties are Faced

Although in the questionnaires, both pilot and air traffic controllers indicate that they do not have language-based miscommunication problems, they state that they experienced the most severe communication problems with Russia and Commonwealth Independent States. After the break up of the Soviet Union, Turkish Airlines had more flights to the new Commonwealth Independent States and Russia. Because of the additional flights problems increased. In fact that during flights with VIP passengers, pilots took a guide who knew Russian (interviews dated on March 10, 1998).

The following figure displays the number of the countries determined by Turkish pilots in which comprehension was difficult.

Figure 10: Countries where pilots faced communication problems (n-25)

<table>
<thead>
<tr>
<th>Countries *</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>11</td>
</tr>
<tr>
<td>Turkic States</td>
<td>9</td>
</tr>
</tbody>
</table>
According to their responses on the questionnaire air traffic controllers seem not to have problems. In response to the question "do the pilots seem to understand you easily?" air traffic controllers said that pilots "always" (56%) or "often" (44%) understood them. Regarding ease with language, 88% of air traffic controllers feel comfortable speaking to pilots. Moreover, the same results were reflected in pilot responses: 88% of pilots think that air traffic controllers seem to understand them easily. This reinforces the notion that language-based miscommunication is the exception, not the norm. Language-based problems, though exceptional, do exist.
however. Though Airspeak is a universal language, it is not always clear, for the accents of pilots can affect its comprehension by air traffic controllers, and the reverse.

The following figure displays the countries determined by air traffic controllers as those in which they face the most communication problems while guiding air traffic.

Figure 11: Countries where air traffic controllers faced communication problems (n-25)

<table>
<thead>
<tr>
<th>Countries *</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>13</td>
</tr>
<tr>
<td>Old Russian Countries</td>
<td>5</td>
</tr>
<tr>
<td>Commonwealth Independent States</td>
<td>5</td>
</tr>
<tr>
<td>France</td>
<td>3</td>
</tr>
<tr>
<td>Turkey</td>
<td>2</td>
</tr>
<tr>
<td>Arabic Countries</td>
<td>2</td>
</tr>
<tr>
<td>Far East Countries</td>
<td>2</td>
</tr>
<tr>
<td>USA</td>
<td>1</td>
</tr>
<tr>
<td>Cuba</td>
<td>1</td>
</tr>
<tr>
<td>Yemen</td>
<td>1</td>
</tr>
<tr>
<td>Italy</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: *The name of the countries and geographic areas are listed as given though they sometimes overlap.

In both figure 10 and 11, the name of the countries are the same as the ones indicated in the questionnaires by respondents. It is interesting to note that in Figure 10, pilots and in Figure 11, air traffic controllers, list the same countries as ones in which they experience communication difficulties.
Regarding the general question of whether or not the pilots and air traffic controllers have ever had “near misses” due to a lack of language-based communication, the responses of the two groups of professionals were distributed as follows:

Figure 12: “Near miss” experienced by pilots and air traffic controllers

Responses to “near miss” experienced by pilots and air traffic controllers

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Once</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilots</td>
<td>6</td>
<td>13</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Air Traffic Controllers</td>
<td>12</td>
<td>7</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

As shown about in Figure 12, many air traffic controllers have “near misses” while guiding air traffic. They explain the reasons either as language-based miscommunication or technical-based near misses. On the other hand, about half (52%) of pilots claimed that they have never had “near miss.” They say that if there is a language problem they read-back (repeat) the instructions (interview dated on March 11, 1998)

Problems with Numbers

A major problematic issue for air traffic controllers is numbers. The problem of the homophonic words between ‘to’ and ‘two’ was solved by never using the preposition ‘to’ while giving numbers for flight levels. Although “two” might seem the most problematic number, there are also frequent miscommunications and misunderstanding of four and five, two and three, three and six. The pronunciation of ‘zero’ and ‘o’ has resulted in near-misses such as when ‘four o seven’ has been understood four seven by the listener. The controller was mixed up and accepted four seven as another flight number.
In the interviews, one air traffic controller (interviews dated on March 12, 1998) said that once where she said ‘two four zero to Rixen’, the pilot with whom she was speaking understood it as ‘two five zero.’ This confusion caused a near miss because there was another aircraft at the same altitude. After the event, she checked the recordings and listened to herself. After listening, she decided that it was her pronunciation which caused the misunderstanding. Other factors at work in number confusion in addition to pronunciation, may be problems with equipment or the pilot may expect to hear ‘five’ instead of ‘four’. Two out of ten interviewees think that ‘two’ and ‘three’ are problematic numbers to understand. Another interviewee claims that numbers ‘three’ and ‘six’ sound similar (interview dated on March 13, 1998).

Specific Terms

Pilots are flying abroad, and as a result, they have chances to communicate with the air traffic controllers from all over the world. According to their responses on questionnaire, question on their understanding of English, some (36%) of the pilots said they have no problems understanding English, and majority (80%) of them said they almost always feel comfortable speaking English to air traffic controllers. During the interviews (March 9-11, 1998) they mentioned specific terms used by American air traffic controllers which initially confused them. I will discuss three terms: “chop,” “with you,” “in hold position.”

Chop

The word “chop” is used by the controllers in the United States (interview notes). A former pilot of Northwest Airlines, Gifford T. Jones (personal communication, April 12, 1998) confirms that “chop” refers to turbulence. The word has come into widespread usage, but is still unofficial . . . beginning as American
vernacular, and means only a very light turbulence; a flight condition that is little more than a nuisance”

**With You**

Another example is again from the United States (interview notes); while an aircraft is changing Flight Information Region (FIR), air traffic controller gives the name of new FIR and says: . . . contact one three five point zero. The pilot says: It’s Turkish one four eight good afternoon. American pilots in this case say: “Montreo this is American two eight five with you.” Instead of “on your frequency” as is appropriate according to ICAO’s standard terminology.

Though this is a deviation from the standard, in the excerpt below, the pilot does not indicate that the air traffic controller had any difficulty in understanding the pilot.

Excerpt 39: With You (Transcription lines 278-280)

167 P : Ohm FedEx five Zulu with you flight level three one zero

168 ACC: FedEx five Zulu roger maintain three one zero proceed to Yalova

**In Hold Position**

The phrase “line up and wait” in ICAO’s terminology, but it is used as “taxi into position and hold.” It means the aircraft should enter the runway and wait there (interview notes on March 10, 1998). In the excerpt below, the phrase used as line up and wait.

Excerpt 40: Line Up and Wait (Transcription lines 3594-3595)

169 TWR: Turkish one three zero line up and wait runway three six

170 P : Line up and wait Turkish one three zero
In the questionnaire in response to questions on using standard English, pilots indicated that they are in communication with different professional groups such as ground crews, copilots, air traffic controllers and passengers during their flights. Air traffic controllers on the other hand, are only in communication with pilots. Most of these air traffic controllers (72%) said that they only communicate in Airspeak and they (36%) spoke some standard English. However, air traffic controllers may be asked strange questions by the pilots of different countries, such as asking the score of a football match or the time when the fast is broken during Ramadan.

Both pilots and air traffic controllers use technical terms more than they use standard English while working. Both groups believe that they do not have any difficulties in using and understanding technical English. They think that they are much better in speaking aviation English than standard English because they experience this technical codified language on a daily basis. According to them, it is easy to learn technical phrases and sentences while in a real life situation.

The pilots imply that when they first hear a non-technical word, it is hard to understand. On the other hand, if they hear the same word several times, they learn the meaning. In Airspeak, if a pilot does not understand any phrase, s/he requires repetition. Read-back is very important in Airspeak in order to prevent miscommunication.

This chapter gave an analysis of Airspeak. The results show that Airspeak has many distinguishing features from everyday English. Both pilots and air traffic controllers use specific terminology and phrases in different structures in air communication. In the next chapter, I will discuss the findings and draw conclusions.
CHAPTER 5: CONCLUSION

Summary of the Study

The purpose of this study was to investigate “Airspeak” by examining the distinguishing features of language used by pilots and air traffic controllers and to locate language-based problems which cause miscommunication. I also aimed at determining what aspects of Airspeak should be considered when developing guidelines for English language courses for air traffic controllers and pilots. This discourse analysis study was conducted through recordings, questionnaires and interviews. My primary data were recordings of Airspeak and to support those recordings, I gave out questionnaires and conducted interviews.

In order to investigate Airspeak, I got permission to record Airspeak at Atatürk International Airport. I obtained nine hours of air traffic talk. I transcribed the recordings and analyzed data using discourse methodology. In discussing my data I included excerpts from the transcripts to give examples of particular linguistic features.

Based on the tapes, interviews and questionnaire results I described features of Airspeak and discussed language-based problems related to Airspeak. My purpose was to apply my findings to the classroom setting by providing guidelines for teachers of English in air traffic and pilot training schools. The findings of this research will contribute to the English language education of air traffic personnel by assisting English teachers in designing their programs.
Discussion of Findings

In my study, I analyzed the communication events (Hymes, 1972) between pilots and air traffic controllers in the sky over Istanbul. I looked at speech functions, adjacency pairs, specific terms, and register which identify Airspeak as a genre (Bhatia, 1997). I used these as a basis for beginning my study; then I classified what I found according to my research questions. The findings of my study are set out in the sub-headings below.

Features Which Distinguish Airspeak from Standard English

There are two major differences between Airspeak and standard English: the vocabulary and the syntax.

Airspeak, which is marked by short phrases to provide for concise communication, has a limited vocabulary. Airspeak also contains specific terms which are not used in standard English such as “roger.” These are identified by ICOA (See p. 21). An important finding was that even though the ICAO set clear guidelines for Airspeak, there is some variation with it. Some standard English finds its way into Airspeak, not only “everyday English” such as “nice day” and “happy landing” but also words like “chop” relating to “turbulance” which are eventually incorporated into Airspeak, sometimes on a national basis, sometimes on an international one.

Another area is the structural features of Airspeak. The most striking feature of Airspeak is the omission of verb “to be.” Sentences are formed in present continuous without “am,” “is,” or “are.” The morpheme “-ing” however is included in the verb phrases to emphasize time. To indicate the past tense, the morpheme “-ed” is added to the verb phrase. Since standard English syntactical forms are often reduced,
intonation becomes an important marker of discourse in Airspeak (See Chapter 2, p. 20).

**How These Differences Might Result in Miscommunication**

This study also described language-based problems which occur in the use of Airspeak and standard English.

A major finding is that pilots and air traffic controllers need both Airspeak and standard English. Studies by Cushing (1994) have documented cases in which the use of language not included in formal Airspeak has caused air disasters. One example described in Chapter Two was the New York disaster in which the use of the “running out of fuel” instead of the proper phrase “emergency fuel” caused a misunderstanding and led to a crash killing 583 people.

Airspeak has limited standard phrases which can be misunderstood. Phrases and their different meanings may cause miscommunication such as in the use of “take off” mentioned in Chapter One, in the context of the Tenerife, Canary Island air disaster. The phrase “take off” was given different interpretations by the controller and the pilot, a confusion which resulted in deaths of 73 of the 159 people aboard.

**Recommended Guidelines for English Language Courses**

This study can be used as a basis for designing guidelines for language courses for pilots and air traffic controllers.

A major finding expressed in the interviews was that the most severe problem related to heavy accents of pilots and air traffic controllers of different nationalities. In my recordings, I listened to approximately thirty-four speakers of different nationalities. Their first language interference is obvious. Though it is impossible for all pilots to speak English-based Airspeak like native speakers of English, a classroom
focus on minimizing accent differences will provide better communication and reduce misunderstandings.

This study suggests the importance of improving listening comprehension. Whether guiding air traffic or flying, understanding and being able to respond in a comprehensible manner are important. By providing actual recordings in language courses, air traffic controllers and pilots can be made aware of different accents and speaking styles from different countries. The real-life use of Airspeak should be taught; students might learn terms used by native speakers of English that are not included ICAO's formal Airspeak. If students have an opportunity to study real-life recordings, they will be informed about what real-life air traffic talk consists of. This is a crucial addition to classroom teaching.

Another important point is that students who are going to study Airspeak, should have at least an intermediate level of general English, as Ragan (1994) and Robertson (1988) suggest. By the time they reach this level, students should already have studied vocabulary, grammar, and speech acts of standard English. They would be able to extend their knowledge by learning the structure of speech acts in Airspeak, which differ from the speech functions and vocabulary used in standard English.

The difference in speech acts between Airspeak and standard English cannot be ignored. Communicative acts of Airspeak entail crucial information: requesting to climb or descend, requesting the time, request-denial, giving direction, self-correction, identification, addressing, respecting, joking and the adjacency pairs. All these are the basis for successful communication. In classrooms, students might compare the structure of standard English with Airspeak. If the students understand the functions
from a communicative perspective, they will be aware of what they are learning and how to use Airspeak in its setting.

Limitations of the Study

When I began this study, I had no background knowledge of Airspeak. It would have been beneficial to spend more time in a workplace with pilots and air traffic controllers. I could have experienced the events and observed both groups while using Airspeak.

Also, the results of the study might have been different if I had recordings of more than nine hours at different times of the day. Time constraints prevented my gathering more data.

Further Research

Since there has not been much research on Airspeak, this study aimed at describing features of Airspeak. Though Airspeak is a very limited language, there are some phrases and terms that air traffic controllers and pilots use very often. The frequencies of these specific phrases and words may be computed to indicate how often these are used and to determine the most common phrases used in Airspeak.

Another study might be done using recordings from the cockpit. The researcher will then be able to listen to different frequencies and obtain data from different speeches while flying in the cockpit. The linguistic aspects of Airspeak could then be analyzed.

Educational Implications

English for occupational purposes (EOP) has an important place in the field of English language teaching. Today in Turkey, English language learning is crucial for future careers of the students, especially students who are studying aviation. Pilots
and air traffic controllers have the responsibility for the safety of millions, so their language proficiency is a vital issue. Further research such as above will contribute to English language teachers' knowledge of linguistic differences between Airspeak and standard English. This is crucial for pilots and air traffic controllers, and leads directly to safety in the sky.
REFERENCES


Sharn, L. (1990, February 22). Pilots urged to use proper terms. *USA TODAY*, p. 3A


Appendix A

AIRSPEAK

Area Control  Istanbul  98.01.07  13.06:15  Side A

1   ACC: Austrian eight niner three call over Echo Kilo India

2   P1  : Austrian eight nine three we are passing now Echo Kilo India

3   ACC: Roger sir change approach on one two one decimal one

4   P1  : One one goodbye

5   P2  : One seven eight three passing Makol flight level two four zero

6   ACC: One seven eight three roger change Varna one three seven six five

7   P2  : Goodbye ma’am.

8   P3  : (4. 10) Ooh Constellation three one zero three level two nine zero cleared to

   Romeo Alpha Delta

9   ACC: Charlie India November ee three one zero three calling confirm?

10  P3  : Charlie India November three one zero three

11  ACC: Roger confirm position Radevets

12  P3  : Three one zero three

13  ACC: Three one zero three roger maintain two nine zero proceed Echo Kilo India

   call over Echo Kilo India

14  P3  : Two nine zero call over at Echo Kilo India (. . .) three one zero three

15  P4  : (1.40) Good afternoon Turkish one one niner zero

16  ACC: Good afternoon Turkish one one niner zero go ahead

17  P4  : (. . .) Yalova one six zero maintaining e one zero miles to Yalova

18  ACC: Turkish one one niner zero roger climb to level two five zero
P₄: Two five zero one one niner zero

ACC: (2.04) Turkish one one nine zero continue climb to level two seven zero

P₄: Two seven zero one one niner zero

P₄: (0.35) Constellation three one zero three requesting descent

ACC: Constellation three one zero three clear to descent one seven zero

P₃: One zero Constellation three one zero three (0.28)

P₅: Istanbul hello Speedbird six seven six descending flight level two five zero

ACC: Speedbird six seven six ee say again position

P₅: Erh we are about ee twenty mile north of Rixen

ACC: Roger Speedbird six seven six maintain two five zero call over Rixen

P₁: (0.4) Austrian eight nine seven request descent

ACC: (0.5) Speedbird six seven six confirm requesting descent

P₅: Ee negative about north of thirty miles of Rixen

ACC: Roger

P₁: Austrian eight niner seven is ready for descent

ACC: Austrian eight niner seven confirm (...) your position now

P₁: Eight nine seven we have three zero miles inbound Bravo Echo Yankee

ACC: Roger sir change Ankara on one two eight decimal eight

P₁: Decimal eight bye bye Austrian eight niner seven

ACC: Bye- bye

ACC: Turkish one one niner zero call over Kargı intersection

P₄: (...) maintaining two seven zero now

ACC: Roger sir continue climb to level two niner zero
44  $P_4$: Climbing two niner zero Turkish one one niner zero (0.21)

45  $P_5$: Erh Speedbird six seven six flight level two five zero approaching Rixen and requesting further descent

46  ACC: Roger Speedbird six seven six clear to descent one seven zero and proceed to Adeli call over Adeli

47  $P_5$: Erh descend flight level one seven zero will report Adeli Speedbird six seven six and estimating Adeli one one two six

48  $P_6$: (0.37) Turkish four six two good afternoon crossing one four five climbing one six zero

49  AAC: Turkish four six two ee good afternoon climb to level two five zero

50  $P_6$: Climb two five zero Turkish four six two

51  ACC: (0.36) Turkish four six two call over Ersen

52  ACC: Turkish four six two call over Ersen point

53  $P_6$: Four six two we report Ersen point

54  $P_3$: (0.37) Constellation three one zero three passing Echo Kilo India

55  ACC: Three one zero three roger change approach on one two one decimal one

56  $P_3$: One two one decimal one Constellation three one zero three bye-bye

57  ACC: Bye-bye

58  $P_3$: (1.35) Six seven six maintaining one seven zero

59  ACC: Speedbird six seven six roger confirm position now

60  $P_3$: (Miles) north of Adeli

61  ACC: Roger change approach on one two one decimal one

62  $P_3$: Two one bye (0.8)
Pe : Turkish four six two maintaining two five zero Ersen at two eight will report
[approaching Radovets]
ACC: Turkish four six two continue climb to level two niner zero
P₆ : Four six two leaving two five zero descending p climbing two nine zero
ACC: (0.4) Station calling
P₇ : Swissair three two four calling you level two nine zero overhead Radovets
ACC: Swissair three two four roger maintain two nine zero proceed to Echo
Kilo India call over Echo Kilo India
P₇ : Echo Kilo India maintain level two nine zero Swissair three two four
P₄ : Turkish one one niner zero over Kargı two niner zero
ACC: Turkish one one niner zero roger change Ankara on one three one zero five
P₄ : One zero five bye-bye
ACC: Bye-bye
P₆ : (1.37) Four six two maintaining two nine zero will report Ersen
ACC: Roger (0.13)
P₈ : Hayırlı günler iyi çalışmalar İstanbul one three two maintaining three one zero
approching Toker
ACC: İstanbul one three two roger maintain three one zero proceed to Yalova
call over Yalova
P₈ : Call over Yalova İstanbul one three two thank you
P₆ : (1.10) Turkish four six two approaching Ersen two niner zero
ACC: Roger sir change Ankara one two eight decimal eight
P₆ : Decimal eight good afternoon
PS : (0.29) Istanbul Istanbul one three two request descent

ACC: Istanbul one three two clear to descend level one seven zero

PS : Descend one seven zero Istanbul thank you

PS : (1.22) Control good morning Pakistan seven five one (out of) three one zero

ACC: Pakistan seven five one roger maintain three one zero stand by for further

PS : Three one zero standing by further Pakistan seven five one

ACC: Istanbul one three two request out of level

PS : Erh crossing two eight zero now

ACC: Roger

ACC: Pakistan seven five one continue descent to level two eight zero

PS : Istanbul one three two (did) you call me

ACC: Roger sir copied and break Pakistan seven five one continue descend to level two eight zero

PS : Two eight zero Pakistan seven five one thank you

PS : Turkish one four three five good afternoon maintain one six zero on course Boğaz

ACC: Turkish one four three five good afternoon climb to level two four zero

PS : Two four zero one four three five

PS : Three two (seven) standing by for descent

ACC: Swissair three two four clear to descend level one seven zero

PS : Level one seven zero Swissair three two four

PS : Istanbul good afternoon CSA four three two flight level two seven zero descend two two five zero shortly a Rixen
ACC: (0.33) CSA four three two roger maintain two five zero call over Rixen

P_{11} : Call over Rixen (........)

P_{11} : CSA four three two Rixen flight level two five zero

ACC: Roger proceed (to) Adeli call over Adeli and clear to descend one seven zero

P_{11} : Adeli descent one seven zero CSA four three two

ACC: (0.11) İstanbul one three two request out of level

P_{11} : Two three zero now

ACC: Roger

ACC: Pakistan seven five one continue descent level two four zero

P_{9} : Two four zero seven five one (0.10)

P_{12} : Good afternoon Aeroflot two nine six flight level two nine zero short before Amani

ACC: Aeroflot two niner zero roger maintain two niner zero proceed to Biga call over Biga

P_{12} : Maintaining flight level two nine zero say again (........)

ACC: Affirm and call over the Bravo India Golf

P_{12} : Will report Bravo India Golf Aeroflot two nine six

P_{10} : One four three five approaching two four zero

ACC: Station calling

P_{10} : One four three five approaching two four zero

ACC: Roger maintain two four zero call over Ri Makol

P_{10} : Makol one four three five

ACC: İstanbul one three two request out of level
P₈ : Two niner zero approaching Radovets

ACC: İstanbul one three two request out of level

P₈ : One niner (…….)

ACC: Pakistan seven five one continue descend to level two zero zero

P₉ : Two zero zero Pakistan seven five one

P₁₃ : İstanbul good afternoon Onur one one four maintaining two niner zero approaching Radovets

ACC: İstanbul good afternoon Onur one one four maintain two niner zero proceed to Echo Kilo India

P₁₃ : Echo Kilo India Onur one one four

ACC: Swissair three two four confirm position Echo Kilo India now

P₇ : Affirm Echo Kilo India Swissair three two four

ACC: Swissair three two four roger change approach on one two one decimal one

P₇ : One one bye-bye Swissair three two four

ACC: (0.12) İstanbul one three two request out of level

P₈ : Seven three

ACC: Confirm one seven three

P₈ : Confirm

ACC: Roger

ACC: (0.7) İstanbul one three two call over Yalova

P₈ : Maintaining one seven zero I call you over I call you Yalova

P₁₄ : İstanbul iyi günler Sun-Express three six one flight level three zero zero

request descent please
ACC: Sun-Express three six one roger stand by for descent request DME to Echo Kilo India

P14: Forty-five nautical miles to Echo Kilo India Sun-Express three six one

ACC: Roger break Onur Air one one four request DME to Echo Kilo India

P13: (......)

ACC: Say again

P13: (......)

ACC: Confirm four five

P13: (...five)

ACC: Onur Air one one four you are broken say again

P13: (......)

P13: Efendim 65-65

ACC: Altı beş mutabıkmyız altmışbeş

P13: Mutabıkız şimdi altmış mil oldu

ACC: Anlaşılıdı efendim

ACC: Sun-Express three six one clear to descend level one seven zero

P14: Flight level three three zero descending flight level one seven zero

Sun-Express three six one

ACC: İstanbul one three two confirm maintaining one seven zero

P8: Confirm maintaining one seven zero proceeding Yalova

ACC: Roger request DME to Yalova

P8: Two two DME

ACC: Roger
P15: Control Turkish one four four good afternoon level two five zero five miles to Rixen

ACC: Turkish one four double four good afternoon and and confirm position over Rixen

P15: Affirm

ACC: Roger maintain two five zero proceed to Adeli standby for descent

P15: Two five zero to Adeli standingby

ACC: Four three two request out of level

P11: (........)

ACC: Say again

P16: Control good afternoon Tango Uniform Alpha four zero six climbing one six zero

ACC: Tango Uniform Alpha four zero six roger climb to level two five zero

P16: Two five zero Kyrgyzstan four zero six

ACC: CSA four three two request out of level

P11: Descending one seven zero (after you)

ACC: Roger CSA four three two confirm position over Adeli

P11: Over Adeli one minute ago

ACC: Roger change approach on one two one decimal one

P11: One one good day

ACC: Turkish ee one four double four clear to descent level one eight zero

P15: Clear descent one eight zero one four double four

ACC: Pakistan seven five one continue descent level one eight zero
P9: Pakistan seven five one

ACC: Pakistan seven five one also call over Yankee Alpha Alpha

P9: Call over Yankee Alpha Alpha Pakistan seven five one

ACC: (0.37) İstanbul one three two maintain one seven zero change approach on one two one decimal one

P8: One seven zero one two one decimal one iyi günler efendim

ACC: İyi günler

ACC: (0.3) Pakistan seven five one maintain one eight zero change approach on one two one decimal one

P9: Change approach one two one decimal one good day Pakistan seven five one

ACC: Good day

P13: İstanbul Onur Air one one four request

ACC: Onur Air one one four standby

ACC: Sun-Express three six one request out of level

P14: Two three zero descending one seven zero

ACC: Roger break Onur Air one one four clear to descend level two four zero

P13: Two four zero one one four

P10: (0.6) Turkish one four three five over Makol

ACC: Roger sir change on one o one two seven six five

P10: Six five bye-bye

ACC: Bye-bye

ACC: (0.36) Sun-Express three six one confirm position Echo Kilo India
P₁₄ : We just passed

ACC: Sun-Express three six one roger change approach on one two one decimal one

P₁₄ : One iyi günler

ACC: İyi günler

ACC: Onur Air one one four continue descent level two one zero

P₁₃ : Two one zero one one four

ACC: (0.40) Aeroflot two nine six request registration

P₁₂ : Registration Romeo Alpha eight five six two six Romeo Alpha eight five six two six and appreciate flight level three three zero

ACC: Aeroflot two nine six three zero opposite level sir and climb to level three one zero

P₁₂ : Clear to climb three one zero now leaving two nine zero Aeroflot two nine six

P₁₂ : (.....) four zero six maintaining two five zero request high level

ACC: (0.5) Tango Uniform Alpha four zero six maintain two five zero request further climb after Ersen by Ankara Control call over Ersen sir

P₁₆ : Maintaining two five zero Kyrgyzstan four zero six (0.5)

ACC: Turkish one four double four confirm out of level and confirm position Adeli

P₁₅ : Affirm level one eight zero

ACC: Roger sir change approach on one two one decimal one

P₁₅ : One one nice day

ACC: Bye-bye

P₁₇ : Aeroflot five zero three over Rixen for level two five zero

ACC: Aeroflot five zero three roger confirm position now Rixen
P₁₇ : Yes, ma'am

ACC: Roger Aeroflot five zero three proceed to Adeli clear to descend level
one niner zero I call you over Adeli

P₁₇ : (.....) Adeli descend one niner zero I call over Adeli five zero three

P₁₈ : Turkish one five zero five good afternoon one six zero check Gotan

ACC: Turkish one five zero five roger climb to level two eight zero

P₁₈ : Climbing two eight zero one five zero five

ACC: Turkish one five zero five correction climb to level two six zero

P₁₈ : Climbing two six zero Turkish one five zero five

ACC: Affirm break Onur Air one one four continue descend level one eight
zero and correction one niner zero continue descend one niner zero
confirm position Echo Kilo India

P₁₃ : Affirm Echo Kilo India descending one niner zero

ACC: Onur Air one one four change approach on one two one decimal one

P₁₃ : One iyi çalışmalar efendim

ACC: (.........)

P₁₂ : Aeroflot two nine six position Bravo India Golf level three one zero

ACC: Aeroflot two niner six roger proceed to Bravo Kilo Zulu then Makol

P₁₂ : Kilo Zulu then Makol Aeroflot two nine six

P₁₆ : (.....) four zero six approaching (Ersen)

ACC: (0.4) Tango Uniform Alpha four zero six change Ankara on one two eight
decimal eight

P₁₆ : Eight decimal eight good day
ACC: Good day

P₁₉: (0.49) İstanbul control FedEx five Zulu

P₁₉: İstanbul control FedEx five Zulu

ACC: Station calling

P₁₉: FedEx five Zulu with you flight level three one zero

ACC: Foxtrot Delta X-ray five Zulu roger maintain three one zero proceed to Yalova

P₁₉: We are going on right now Yalova and confirm radar contact

ACC: Negative sir, radar is out of service

P₁₉: Thank you

ACC: (0.8) Aeroflot five zero three confirm out of level

P₁₇: (Five zero three) passing two hundred descending one nine zero

ACC: Request out of level now

P₁₇: Crossing two hundred Aeroflot five zero three

ACC: Roger

P₂₀: (0.4) İstanbul good afternoon Turkish eight zero seven flight level three one zero and ready for descent

ACC: Turkish eight zero seven confirm position over Toker

P₂₀: Affirm

ACC: Roger Turkish eight zero seven proceed to Yankee Alpha Alpha and clear to descent level two six zero

P₂₀: Two six zero and proceed Yankee Alpha Alpha Turkish eight zero seven

P₂₀: (0.10) Five zero three we (........) level one niner zero
ACC: Roger ee maintain one niner zero

P20: One niner zero five zero three

P17: (..........) confirm Adeli one Charlie

P17: (0.26) Aeroflot five zero three how (....) make holding pattern over Adeli

ACC: Aeroflot five zero three roger change approach on one two one decimal one

P17: One two one decimal one Aeroflot five zero three good bye

ACC: Good bye

P21: İstanbul control Tango Charlie Alpha November Tango good afternoon

ACC: Tango Charlie Alpha November Tango good afternoon maintain
two four zero confirm position over Toker

P21: Approaching Toker

ACC: Roger proceed to Yankee Alpha Alpha

P21: Proceeding Yankee Alpha Alpha Alpha November Tango

P22: (2.08) Good morning KLM one zero seven level two niner zero

ACC: Good morning KLM confirm position over Radovets

P22: Roger approaching Radovets KLM one zero seven

ACC: Roger KLM one zero seven maintaining two niner zero proceed to

Echo Kilo India call over Echo Kilo India

P22: Roger maintaining two nine zero direct Echo Kilo India call you

Echo Kilo India KLM one zero seven

P23: (0.17) Doğan seven three good afternoon

ACC: Doğan seven three good afternoon climb to level one niner zero

P23: Climb level one nine zero request one seven zero ma’am
ACC: Roger climb to level one seven zero

P22 : One seven zero proceed if possible request direct to Bravo Echo Yankee

ACC: Doğan seven three roger proceed to Bravo Echo Yankee

P19 : İstanbul FedEx five Zulu requesting a descent

P24 : Good afternoon Turkish triple three flight level two six zero

ACC: Good afternoon Turkish triple three two six zero call over Biga

ACC: FDX five Zulu clear to descend level two eight zero

P19 : Descending flight level two eight zero FedEx five Zulu

P25 : (0.22) (……) approach two six zero request further descent

ACC: Roger eight zero seven request DME to Yalova

P25 : (……) DME

ACC: say again

P : (………)

ACC: Eight zero seven confirm four zero DME

P25 : Four zero DME

ACC: Roger break Tango Charlie Alpha November Tango request DME to Yalova

P21 : Four (niner) DME to Yalova Alpha November Tango

ACC: Roger sir

P21 : (……) control Tango Charlie Alpha November Tango request descent

ACC: Tango Charlie Alpha November Tango clear to descend level
ACC: (0.22) Turkish eight zero seven cleared to descend two four zero

ACC: Turkish eight zero seven cleared to descend two four zero

$P_{20}$: Two four zero Turkish eight zero seven

ACC: (0.14) Turkish one five zero five confirm maintaining two six zero

$P_{18}$: Charlie Charlie maintain two six zero

ACC: Roger maintain

$P_{19}$: (0.15) Oh FedEx five Zulu (…….) flight level ten [Alo alo]

ACC: Ee Foxtrot Delta X-ray five Zulu continue descend two six zero

$P_{19}$: Two six zero now FedEx five Zulu (and)

ACC: Turkish eight zero seven request out of level

$P_{20}$: Seven three seven

ACC: (0.10) Turkish eight zero seven continue descend to level two two zero

$P_{20}$: Descending two two zero eight zero seven

ACC: Tango Charlie Alpha November Tango request out of level

$P_{21}$: Two one zero crossing two one zero Alpha November Tango

ACC: Alpha November Tango roger continue to descend one eight zero

$P_{21}$: One eight zero Alpha November Tango

$P_{20}$: Turkish eight zero seven erh descending two two zero or two zero zero

ACC: Two two zero sir

$P_{26}$: Istanbul (Rich) Alpha Hotel Tango one passing one twelve correction

twelve point nine for one six zero

ACC: (Rich) Alpha Hotel Tango one roger climb to level one five zero
Demanding altitude now one five zero (......) Rich Alpha Hotel Tango one

Turkish eight zero seven further descend

Istanbul radar Turkish eight zero seven

ACC: Turkish eight zero seven go ahead

(Thank you)

ACC: Turkish eight zero seven descend to level two zero zero hold over

Yankee Alpha Alpha

Yankee Alpha Alpha two zero zero thank you

ACC: Tango Charlie Alpha November Tango maintain one eight zero

hold over Yankee Alpha Alpha

(......) one eight zero Yankee Alpha Alpha Tango

ACC: FDX five Zulu continue to descend two four zero hold over

Yankee Alpha Alpha

two four zero hold over Yankee Alpha Alpha FedEx five Zulu

ACC: (Rich) Tango one proceed direct to Toker

Alitalia seven hundred good morning

ACC: Alitalia seven hundred good morning go ahead

Estimating (EKI) one two zero six (......) two niner zero

ACC: Seven hundred roger maintain two niner zero proceed to Echo

Kilo India

Proceed EKI seven hundred

ACC: (Rich) Tango one Istanbul (Rich) Tango one Istanbul proceed
to Toker intersection request confirm requesting higher level
P₂₆ : (........) Tango one is requesting direct Toker requesting one niner zero
ACC: Roger sir and standby further climb stand by proceed to Toker intersection
P₂₆ : Proceeding to Toker now (Rich) Tango one
P₂₄ : Turkish triple three check Biga five seven request descend
ACC: Turkish triple three roger radar identified now clear to descend level
ACC: One niner zero proceed to Deniz intersection hold over Deniz
P₂₄ : Descending one nine zero holding Deniz Turkish eeee triple three
P₂₂ : KLM one zero seven is approaching Echo Kilo India and standing descend
ACC: EKI one zero seven clear to descend level two six zero radar identified
P₂₂ : Descending level two six zero and the left turn to KLM one zero seven
ACC: (Rich) Tango one climb to level one niner zero
P₂₆ : One nine zero now (Rich) Tango one
ACC: FDX five Zulu radar identified continue the descend level two two zero
ACC: Foxtrot Delta X-ray five Zulu descend the level two two zero
ACC: hold over Yankee Alpha Alpha
ACC: Foxtrot Delta X-ray five Zulu descend the level two two zero
ACC: hold over Yankee Alpha Alpha
P₂₈ : Erh good afternoon Turkish three five six two
ACC: Turkish three five six two roger eee maintain two seven zero proceed
to Echo Kilo India
P₂₈ : Two seven zero
P₂₉ : İstanbul Air France one five niner zero passing Radovets flight level
two seven zero
ACC: Air France one five niner zero radar identified proceed to Echo Kilo India
P29 : (EKI) Air France one five niner zero

ACC: KLM 107 proceed to Deniz hold over Deniz

P22 : Proceed Deniz hold over there we are approaching level two six zero

KLM one zero seven

ACC: Roger KLM one zero seven continue descend level two five zero

P22 : Flight level two five zero KLM one zero seven

P30 : Turkish Charlie Uniform iyi günler

ACC: Station calling?

P18 : One five zero five maintain two six zero approaching Radovets

ACC: Turkish one five zero five change Sofya on one two eight four

P18 : Bye-bye

P20 : Turkish eight zero seven hold over Yankee Alpha Alpha flight level two zero zero

ACC: Roger sir

P26 : (.....) (Rich) Alpha Hotel Tango one request

ACC: Go ahead

P26 : Roger Tango one roger request final altitude two three zero

ACC: Roger sir stand by for further climb stand by

P19 : Oh FedEx five Zulu establishing holding at flight level two four zero and (do you) have a expected further clearance time for us

ACC: Roger same answer and the descend the level two two zero

I said before descend the level two two zero

P19 : Flight level two two zero for FedEx five Zulu
P_{22}: KLM one zero seven is maintaining level two five zero and reducing (to) two two zero knots

P_{31}: Turkish three two eight maintain one six zero

ACC: Station calling say again

P_{31}: Two eight maintain one six zero

ACC: Turkish three two eight roger climb to level two zero zero and fly heading two seven zero

P_{31}: Two zero zero fly heading two seven zero

ACC: KLM one zero seven continue descend level two two zero

P_{22}: Leaving two five zero flight level two zero zero speed is now two two zero knots KLM one zero seven

ACC: Roger

P_{27}: Aliatalia seven zero zero descend

ACC: Alitalia seven zero zero roger now fly heading one zero zero radar identified also and stand by for descend

P_{27}: Right heading one zero zero standing for descent Alitalia seven hundred

P_{20}: Turkish eight zero seven estimating approach time please

ACC: Roger stand by

P_{20}: Standing by

P_{22}: KLM one zero seven still at the hold over Deniz descending level two two zero do you have a further clearance time for us (.....)

ACC: Roger standby

P_{21}: (Yol) Control Tango Charlie Alpha November Tango holding over
Yalova one eight zero

ACC: Tango Charlie Alpha November Tango descend and maintain one seven zero

P21 : One seven zero Alpha November Tango

ACC: (0.8) Alitalia seven hundred cleared to descend level two three zero

P27 : (Descend level) two three zero seven hundred

P32 : (Istanbul) good afternoon Sabena three two one flight level two eight five descending two five zero

ACC: Sabena three two one Istanbul roger ee radar identified now maintain two five after Rixen proceed to Deniz intersection

P29 : (0.5) One five nine zero request descents

ACC: Air France one five nine zero descend to level two five zero

P29 : Descend to flight level two five zero can you confirm runway three six in use in Istanbul and QNH one zero two one

ACC: Roger sir, qnh is one zero two three and runway (in) use three six ILS

P29 : Two three Air France one five nine zero

ACC: Turkish eight zero seven descend to level one eight zero

P20 : Seven three climbing over one six zero Mozart one Echo

ACC: Lufthansa three four four seven roger climb to level one niner zero proceed to Radovets

P33 : Three four four seven climbing level one niner zero and (.....) Radovets

P32 : Sabena three two one can you confirm routing after Rixen
ACC: Proceed to Deniz intersection

Intersection Sabena three two one

ACC: Turkish eight zero seven descend and maintain level one eight zero

One eight zero

ACC: Air France one five niner zero confirm left two seven zero

Air France one five nine zero

ACC: KLM one zero seven descend and maintain two zero zero

Two two zero for level two zero zero KLM one zero seven

Turkish three five six two request descend please

ACC: Turkish three five six two standby for descend

ACC: Alitalia seven zero zero now proceed to (the) Deniz intersection hold over Deniz and continue descend the level two two three zero

Alitalia seven hundred now proceed to (the) Deniz intersection and hold over Deniz continue descend two three zero

Direct to Deniz hold over Deniz (......) two three zero Italia seven hundred expected approach time

Roger stand by break Tango Charlie Alpha November Tango change

approach on one two one decimal one

One two one decimal one (......)

ACC: Alitalia seven hundred continue to descend level two two zero
ACC: Alitalia seven zero zero continue to descend level two two zero

P27: Alitalia seven zero zero descending level two two zero

ACC: Air France one five niner zero descend to level two three zero

P29: Two three zero one five nine zero

ACC: Foxtrot Delta X-ray five Zulu descend the level one niner zero

ACC: (0.5) Foxtrot Delta X-ray five Zulu descend the level one niner zero

P19: (.........) position flight level three one zero

ACC: Aeroflot two niner six change Varna on one two seven six five

P12: (.........)

ACC: Foxtrot Delta X-ray five Zulu Istanbul

P19: Two zero zero heading two seven zero

ACC: (Rich) Tango one climb to level two three zero

P26: Over Toker changing one ninety-one

ACC: Doğan seven three change Esenboğa approach on

one one niner decimal one

P23: (.........)

ACC: (Rich) Tango one climb to level two three zero

P26: Two three zero (Rich) Tango one thank you

ACC: Alitalia seven zero zero descend to level two one zero

P27: Seven zero zero two one zero

ACC: Turkish three five six two descend to level two four zero

P28: Two four zero three five six two

P31: Turkish three two eight maintain two zero zero heading two seven zero
may be proceed to Biga

ACC: Negative sir I am calling to turning to Biga I will call you

P31: Standby

P19: Istanbul FedEx five Zulu we can only hold about 10 or more minutes before we have to proceed one alternate

ACC: Roger sir descend to level one niner zero stand by descend to level one niner zero

P19: Descending out two two zero for level one niner zero FedEx five Zulu

P22: KLM one zero seven maintaining level two hundred do you have an estimated approach time for us

P24: Turkish triple (three) over Deniz one zero estimate(ing) approach time please

ACC: Turkish eight zero seven change approach on one two one decimal one

P20: One decimal one thank you

P24: Turkish triple three over Deniz holding flight level one niner zero can you say the approach time

ACC: Turkish triple three roger change approach on one two one decimal one

P24: Goodbye

ACC: Good bye

P32: Sabena three two one do you have expect holding as well

ACC: Turkish three two eight climb to level two three zero on this heading

P31: (.....) on this heading Turkish three two eight

P: (.....)
ACC: Foxtrot Delta X-ray five Zulu change approach one two one decimal one

ACC: Foxtrot Al Delta X-ray five Zulu İstanbul

P19: Go ahead FedEx five Zulu

ACC: Change approach on one two one decimal one

P19: One decimal one FedEx five Zulu so long

P32: Sabena three two one do you have to expect holding over Deniz

ACC: Sabena three two one erh affirm proceed to Deniz hold over Deniz

P32: Reducing the speed now how long delay for the holding

P37: (0.3) Three four four seven reaching level one niner zero

ACC: Lufthansa three four four seven continue to climb level two eight zero

P33: Three four four seven we will continue climb flight level two eight zero

P26: Ohm (Rich) Tango one

ACC: Go ahead

P26: Ma’am, what is (………) clearance behind Toker

P27: Alitalia seven hundred Deniz holding pattern

P29: One five nine zero approaching Deniz flight level two three zero for descent

ACC: Roger sir standby please

P29: Roger holding Deniz one five nine zero

P26: Say correct maintain two three zero heading two seven zero

ACC: (Rich) Tango one say again please

P26: Two three zero

ACC: (Rich) Tango one roger change Ankara on one two eight decimal eight

P26: (……) eight good day
ACC: Good day

P31 : (........) two three zero

ACC: Turkish three two eight roger now fly heading one eight zero

P31 : One eight zero two three eight

P32 : Expected approach time Sabena three two one please

ACC: Sabena three two one say again please

P32 : Expected approach time for us

ACC: Roger sir stand by please stand by break KLM one zero seven descend to level one eight zero

P22 : Two zero zero for level one eight zero KLM one zero seven and do you have an expected approach time

ACC: (0.2) Roger sir erh stand by I will call you eee. I will check from my approach

P29 : Istanbul Air France one five nine zero we are in a hold Deniz in a hold

ACC: Affirm sir maintain

P29 : Two three five six two

ACC: Three five six two maintain two four zero hold over Deniz

ACC: KLM one zero seven confirm left two zero zero

P22 : KLM one zero seven is in the right turn heading two eight two 282 outbound in the holding KLM one zero seven passing flight level one niner five now

ACC: Roger sir

ACC: KLM one zero seven continue descend the level one seven zero

P22 : Cleared level one seven zero KLM one zero seven
ACC: Alitalia seven zero zero descend level two zero zero

P₂₇ : Alitalia seven zero zero descend level two hundred maintain holding pattern Deniz

ACC: Affirm

P₃₄ : (0.24) Aeroflot five zero four Charlie good afternoon crossing one three zero climbing one six zero

ACC: (0.6) Aeroflot five zero four climb to level two four zero

P₃₄ : (0.2) Flight level two four zero (.....) five zero four

P₃₂ : (0.4) Sabena three two one expected approach time now

ACC: (0.11) Alitalia seven hundred continue to descend level one nine zero

P₂₇ : One nine zero Alitalia seven hundred

ACC: (0.6) Air France one five e niner zero continue to descend level two one zero

P₂₉ : Two one zero one five nine zero

P₃₂ : (0.6) Istanbul Sabena three two one

ACC: Sabena three two one go ahead

P₃₂ : Expected approach time for us

ACC: Standby

ACC: (0.20) Turkish three five six two continue to descend level two three zero

P₂₈ : Approach time for us

ACC: Turkish three five six two descend the level two three zero

ACC: Turkish three five six two descend the level two three zero

P₂₈ : Two three zero three five six two

P₂₂ : (0.5) Istanbul KLM one zero seven we need an estimated approach time
ACC: KLM one zero seven contact one two one one (male)
P_35 : Istanbul Crossair nine eight zero seven good afternoon
ACC: Crossair nine eight zero seven radar contact (0.6)
ACC: Air France one five niner zero continue to descent flight level two zero zero
P_29 : Two hundred one five nine zero
ACC: Alitalia seven hundred expected approach time is one two four five
P_27 : One two four five expected approach time Alitalia seven hundred
ACC: Turkish three two eight proceed Biga
P_31 : Three two eight
P_29 : Air France one five niner zero can you give me approach time also
ACC: Air France one five niner zero expected approach time is five zero
P_29 : Zero
ACC: Turkish three five six two expected approach time is five five
P_28 : Five thank you
ACC: Sabena three two one expected approach time one three zero zero (0.13)
ACC: Alitalia seven zero zero descend and maintain flight level one seven zero
P_27 : Descend level one seven zero Alitalia seven zero zero
ACC: Turkish three five six two descend and maintain flight level two one zero
P_28 : Two one zero three five six two
P_33 : Lufthansa three four four seven reaching level two eight zero
ACC: Three four four seven maintain level two eight zero
P_33 : Seven maintaining level two eight zero
ACC: (0.8) Air France one five niner zero continue the descent flight level
one niner zero

P29 : One niner zero one five nine zero

ACC: Alitalia seven zero zero contact one two one one

P27 : One two one one Alitalia seven zero zero

ACC: Sabena three two one descend and maintain flight level two three zero

P32 : On level two three zero Sabena three two one and then

turning Deniz holding

ACC: Roger

ACC: Turkish three five six two descend and maintain level two zero zero

P28 : Two zero zero three five six two

P36 : (0.19) Istanbul CedarJet two six six eee good afternoon

ACC: Cedar Jet two six six good afternoon initially climb and maintain

flight level two seven zero

P36 : Climb and maintain flight level two seven zero Cedar Jet two six six

P34 : Aeroflot five zero four maintain two seven zero

ACC: Aeroflot five zero four contact Varna one two seven six five

P34 : (.........) five zero four

ACC: Air France one five niner zero continue descend flight level one seven zero

P29 : Seven zero one five nine zero

ACC: Sabena three two one flight level two one zero

P32 : Two one zero Sabena three two one

P31 : Turkish three two eight checking Biga two three zero

ACC: Three two eight roger
ACC: (0.5) Lufthansa three four four seven Sofia one two eight four

P₃₃: Lufthansa three four four seven one two eight four good bye

ACC: Good bye

ACC: (0.14) Turkish three five six two descend and maintain level one niner zero

P₂₃: One niner zero three five six two

P₃₇: (0.35) Good afternoon Turkish one niner niner one one six zero climbing

and Mosar one Echo

ACC: Turkish one niner niner one good afternoon climb and maintain level

flight level initially two eight zero

P₃₇: Proceed Turkish one niner niner one

ACC: Air France one five niner zero contact one two one one

P₂₉: One five nine zero

P₃₈: (0.3) İstanbul good afternoon Scandinavian seven six one flight level

two five zero shortly coming over Rixen

ACC: Good afternoon Scandinavian seven six one radar contact to proceed
direct to Deniz intersection expect landing runway three six

P₃₈: (0.5) Descend and maintain (....... again

ACC: Direct to Deniz Delta Echo November India Zulu

P₃₈: (0.7) Roger Deniz intersection Scandinavian seven six one

ACC: (0.38) Turkish three two eight İzmir one three two nine

P₃₁: One three two nine goodbye

ACC: Bye bye

ACC: (0.17) Cedar Jet two six six continue climb flight level two niner zero
P36: Continue climb flight level two niner zero CedarJet two six six

ACC: (0.6) Sabena three two one descend and maintain flight level two zero zero

P32: Flight level two hundred Sabena three two one (0.54)

ACC: Turkish three five six two descend and maintain flight level one seven zero

P28: One seven zero three five six two

P32: (0.25) Three two one maintaining level two hundred

ACC: Sabena three two one descend and maintain flight level one niner zero

P32: One nine zero Sabena three two one

ACC: Turkish three five six two contact one two one one

P28: One two one one bye bye (0.13)

ACC: Scandinavian seven six one descend and maintain flight level two one zero

P38: Flight level two one zero Scandinavian seven six one (0.17)

P39: Good afternoon Turkish four two two maintain flight level one six zero

so over Bravo Kilo Zulu

ACC: Turkish four two two good afternoon climb and maintain flight level

two seven zero

P39: Seven zero Turkish four two two

ACC: Sabena three two one continue descend flight level one eight zero

P32: Down level one eight zero Sabena three two one

ACC: Crossair nine eight zero seven direct to Romeo Alpha Delta

P35: Direct to Radovets Crossair nine eight zero seven

ACC: Scandinavian seven six one continue descend flight level one niner zero

P38: One nine zero Scandinavian seven six one
P₄₀ : (0.26) İstanbul good afternoon Lufthansa three four five two maintaining
two niner zero over Radovets

ACC: Lufthansa three four five two good afternoon radar contact runway three six

P₄₀ : Three six Lufthansa three four five two

ACC: (0.9) Sabena three two one change approach one two one one

ACC: Sabena three two one contact approach one two one one

P₃₂ : One two one one bye

ACC: Bye bye

ACC: Turkish one niner niner one continue climb flight level three one zero

P₃₇ : Climb three one zero Turkish one niner niner one

P₃₆ : (0.9) Cedar Jet two six six we are requesting flight level three three zero

ACC: Cedar Jet two six six in İstanbul you have to maintain level two niner zero

ACC: sir request from Ankara

P₃₆ : Roger

P₄₁ : İstanbul good afternoon Turkish one two six climbing one six zero
direct to Yalova one Echo

ACC: Good afternoon Turkishone two six direct to Toker level two three zero

P₄₁ : Toker two three zero Turkish one two six

ACC: Scandinavian seven six one continue descend flight level one eight zero

P₃₈ : One eight zero Scandinavian seven six one

P₃₈ : (1.34) Scandinavian seven six one flight level one eight zero

ACC: Seven six one copied

ACC: (0.3) Cedar Jet two six six change Ankara one three one zero five bye
P_{36}: One decimal zero five Cedar Jet two six six good day

ACC: (0.15) Scandinavian seven six one change approach one two one one

P_{38}: One one Scandinavian seven six one

ACC: Roger

P_{40}: (1.05) Istanbul Lufthansa aaa three four five two requesting descend

ACC: Lufthansa three four five two clear to descend flight level one seven zero

P_{40}: Lufthansa three four five two maintaining oov I am sorry we are leaving two nine zero descending one seven zero

ACC: Roger

P_{42}: (1.28) İyi günler Turkish one four two seven approaching one six zero heading Radovets

ACC: İyi günler Turkish one four two seven climb and maintain flight level two four zero

P_{42}: Two four zero one four two seven

P_{43}: (0.14) Good afternoon Kuwait one zero (........)level three one zero

ACC: Kuwait one zero three Istanbul good afternoon radar identified report Makol

P_{43}: (........) one zero three

ACC: (0.5) Lufthansa three four five two change approach one two one one

P_{40}: One one Lufthansa three four five two goodbye

ACC: (Roger)

ACC: (2.17) Turkish one niner niner one Sofia one two eight four

P_{37}: Turkish one niner niner one good day

ACC: Good day
ACC: (0.9) Turkish one two six change Esenboğa radar one one nine one

P₄₁ : Two six one (........)

P₄₄ : (........) six niner zero executing Yalova Echo

ACC: Turkish six nine zero iyi günler climb and maintain flight level two five zero

P₄₄ : Maintain two five zero may be proceed Toker

ACC: Approved cleared direct Toker

P₄₄ : Turkish six nine zero approach Toker

ACC: (0.44) Turkish four two two change Ankara one three one zero five

P₃₉ : Zero five bye bye Turkish four two two

ACC: Bye bye

ACC: Hava yolları yüzkırıkiki deyiz efendim istenilen seviye nedir
QUESTIONNAIRE

Dear Pilots,

I am an MA TEFL graduate student at Bilkent University. I am doing a research project on the discourse analysis of airspeak language between pilots and air traffic controllers. I am interested in your opinions about English in this field. Your responses will help me a great deal with research for my thesis; they will be kept confidential. You do not have to give your name, but even if you do, no one will know your specific answers to these questions. I would be very grateful if you would take a few moments to complete the questionnaire below.

Thank you

Ayşen Handan Girginer
PERSONAL DATA

Name: ____________________________________________

Direction: Please check every response for each item below.

1. Your age: 25 - 30 ______  
   31 - 35 ______  
   36 - 40 ______  
   41 - 45 ______  
   46 - 50 ______  
   51 - ______

2. Your years of experience as a pilot.
   1 - 5 ______  
   6 - 10 ______  
   11 - 15 ______  
   16 - 20 ______  
   21 - 25 ______  
   26 - ______

3. Your years of formal English instruction.
   Less than one year ______  
   one year ______  
   two years ______  
   three years ______  
   four years ______  
   other, please specify ______

4. Your assessment of English proficiency in terms of class level.
   Elementary ______  
   Lower Intermediate ______  
   Intermediate ______  
   Upper Intermediate ______  
   Advanced ______
## Use of English

Direction: Please check the appropriate column for each item below.

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How frequently do you use technical terms that are specific</td>
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<tr>
<td>to air pilots as compared to everyday English while you are</td>
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<td>flying?</td>
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<tr>
<td>2. How frequently do you use everyday English when you are</td>
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<td>at work?</td>
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<td>3. How often do you need to speak everyday English during a</td>
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<td>flight?</td>
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<td>4. How often is everyday English spoken to you during your</td>
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<tr>
<td>flight by co-pilots?</td>
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<td>by ground crew?</td>
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<td>by air traffic controllers?</td>
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<td>by passengers?</td>
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<td>5. Do you feel comfortable in speaking English to co-pilots?</td>
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<tr>
<td>by air traffic controllers?</td>
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<td>by passengers?</td>
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<tr>
<td>6. During air emergencies or stressful situations do you have</td>
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<td>difficulties communicating your exact meaning?</td>
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<td>7. During emergencies do you need everyday English?</td>
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<tr>
<td>8. Do the aviation technical terms taught you in flight school</td>
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<tr>
<td>meet your needs during emergencies?</td>
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</tr>
</tbody>
</table>
9. At which of the following times do you face the most language problems
   - during take off?
   - during landing?
   - during approaching?
   - during area control?
   - during emergency sit?

10. Do you have problems of understanding English when you fly abroad?
    (if you never fly abroad, skip this question)

11. Do you have language based communication problems?

12. Do the air traffic controllers seem to understand you easily?

13. Do you use slang and non-technical terms during your flight?

14. Do you mix Turkish words and English words when you are speaking English during your flights?
EXPLANATION

Direction: Please answer the questions below.

1. In which countries do you face the most severe communication problems while flying?

2. While flying have you ever had a 'near miss' due to a lack of language based communication?
3. If you check ‘sometimes’, ‘often’ or ‘always’ for question number 8, please explain more.

Use back if necessary.

4. If you check ‘sometimes’, ‘often’ or ‘always’ for question number 11, please explain more.

Use back if necessary.
QUESTIONNAIRE

Dear Air Traffic Controllers,

I am an MA TEFL graduate student at Bilkent University. I am doing a research project on the discourse analysis of airspeak language between pilots and air traffic controllers. I am interested in your opinions about English in this field. Your responses will help me a great deal with research for my thesis; they will be kept confidential. You do not have to give your name, but even if you do, no one will know your specific answers to these questions. I would be very grateful if you would take a few moments to complete the questionnaire below.

Thank you

Ayşen Handan Gürün
PERSONAL DATA

Name (optional):__________________________________________________

Direction: Please check every response for each item below.

1. Your age: 25 - 30 ______
   31 - 35 ______
   36 - 40 ______
   41 - 45 ______
   46 - 50 ______
   51 - ______

2. Your years of experience as an air traffic controller
   1 - 5 ______
   6 - 10 ______
   11 - 15 ______
   16 - 20 ______
   21 - 25 ______
   26 - ______

3. Your years of formal English instruction.
   Less than one year ______
   one year ______
   two years ______
   three years ______
   four years ______
   other, please specify ______

4. Your assessment of your English proficiency in terms of class level.
   Elementary ______
   Lower Intermediate ______
   Intermediate ______
   Upper Intermediate ______
   Advanced ______
## USE OF ENGLISH

Direction: Please check the appropriate column for each item below.

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How frequently do you use technical terms that are specific to air traffic controllers as compared to everyday English while you are at work?</td>
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<tr>
<td>2. How often do you use everyday English while you are at work?</td>
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<tr>
<td>3. How often do you need to speak everyday English while working?</td>
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<tr>
<td>4. How often is everyday English spoken to you by pilots while you are at work?</td>
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<tr>
<td>5. Do you feel comfortable speaking to pilots?</td>
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<tr>
<td>6. During air emergencies or stressful situations do you have difficulties communicating your exact meaning?</td>
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<tr>
<td>7. During emergencies do you need everyday English?</td>
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<tr>
<td>8. Do the aviation technical terms taught to you in your formal education meet your needs during emergencies?</td>
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<tr>
<td>9. Do you have difficulty in understanding some words while you are at work?</td>
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<tr>
<td>10. Do you have language based miscommunication problems?</td>
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<tr>
<td>11. Do the pilots seem to understand you easily?</td>
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<tr>
<td>12. Do you use slang and non-technical terms during controlling air traffic?</td>
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<tr>
<td>13. Do you mix Turkish words and English words when you are speaking English during controlling air traffic?</td>
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</tbody>
</table>
EXPLANATION

Direction: Please answer the questions below.

1. With which countries’ pilots do you face the most severe communication problems while controlling air traffic?

2. Have you ever had a ‘near misses’ while you were in charge of guiding a plane?
3. If you check 'sometimes', 'often' or 'always' for question number 8, please explain more.
   Use back if necessary.

4. If you check 'sometimes', 'often' or 'always' for question number 9, please explain more.
   Use back if necessary.

5. If you check 'sometimes', 'often' or 'always' for question number 10, please explain more.
   Use back if necessary.
Appendix D

Interview Questions

INTERVIEW QUESTIONS FOR PILOTS

1. What is your name?
2. How old are you?
3. What English training did you get?
   a. how many years?
   b. when?
   c. where?
4. How often do you use English when you are flying?
5. Do you generally find it easy or hard to speak?
6. Do you face any problems in speaking English as a professional pilot?
7. Have you ever had any problem that was caused by miscommunication when you are flying?
   a. Where did the event take place? In Turkey or abroad? Can you describe it?
   b. How did you manage it?

INTERVIEW QUESTIONS FOR AIR TRAFFIC CONTROLLERS

1. What is your name?
2. How old are you?
3. What English training did you get?
   a. how many years?
   b. when?
   c. where?
4. How often do you use English when you are controlling air traffic?
5. Do you generally find it easy or hard to speak English?
6. Do you face any problems in speaking English as an air traffic controller?
7. Have you ever had any problem that was caused by miscommunication when you are controlling air traffic?
   a. Where did the event take place? With Turkish or foreign pilot?
   b. How did you manage it?
Appendix E

The Map of Air Navigation over Istanbul