"ANYTHING YOU SAY, MAY BE USED IN EVIDENCE..."

THE ROLE OF LINGUISTS IN FORENSIC INVESTIGATIONS

Dr. Gea de Jong-Lendle

Forensic phonetician

Crime scene: town in Hessen. In a busy shopping street a shooting takes place in front of a Turkish fast-food restaurant. Witnesses report a fight between different groups of customers sitting on the terrace. A person is shot. The police arrests all men involved. Two months later we receive a number of video recordings from the security camera of the restaurant – part of the conversation and the subsequent fight and shooting is heard – and mobile phone recordings from a neighbour. Request: a detailed transcription of the recordings. In addition, the police is interested in the number of different speakers. Can certain speakers be assigned to or excluded from particular utterances?

Crime scene: town in Bavaria. The Emergency Services receive a call from a young man requesting an ambulance; an elderly man is injured and needs medical attention urgently. The speaker speaks German with a foreign accent. Police arrive at the scene and find indeed an 88-year old man laying on the floor of his house, unconscious and severely injured. He dies two days later. As the investigators assume, that the man may have been the victim of a violent robbery – jewellery and other valuable items were stolen – and as the victim never regained consciousness, the police is now interested in finding the person who made the emergency call. The recording of that call together with pictures of the stolen items are made public in Aktenzeichen XY. At the same time we are contacted. The police hopes to find answers to the following questions: Where does the caller come from? Where did he learn his German and how long has he been in Germany? Age? Could his voice been disguised?

Crime scene: town in Yorkshire, UK. A 17-year old teenager is attacked in a park by a man with a baseball bat. The victim ends up in the hospital with severe injuries. When questioned by the police the boy reports that his attacker wore a halloween mask. He claims however to have recognised the voice: it is the voice of the local police officer. The investigators ask our assistance with the construction of a voice lineup. When the nine voices are played to the boy, he correctly identifies the voice of the police officer.

Accident scene: Columbia. A Boeing 757 from American-Airlines crashes against a mountain on its way from Miami to Cali 50km from the place of destination. Only 4 of the 155 passengers, and a dog, survive the crash. The black box is found and sent to linguists for analysis.

Linguistic expertise is being increasingly sought in criminal investigations or in the case of a serious accident. This talk offers an introduction to forensic phonetics, a field that is fairly young; it was only in the late 1970s in large cases like the Yorkshire Ripper case in England or the RAF-cases in Germany where linguists, phoneticians in particular, could show for the first

time how investigations could profit from their expertise. Since then the field has advanced significantly. Voice-, language- and speaking characteristics are discussed that have shown to exhibit high speaker discrimination power. Speech analysis methods are demonstrated using real case samples. Finally it is shown, how the historic dialect maps of Georg Wenker (1952-1911) stored in the archive of the Deutscher Sprachatlas here in Marburg, are still relevant for forensic investigations today.

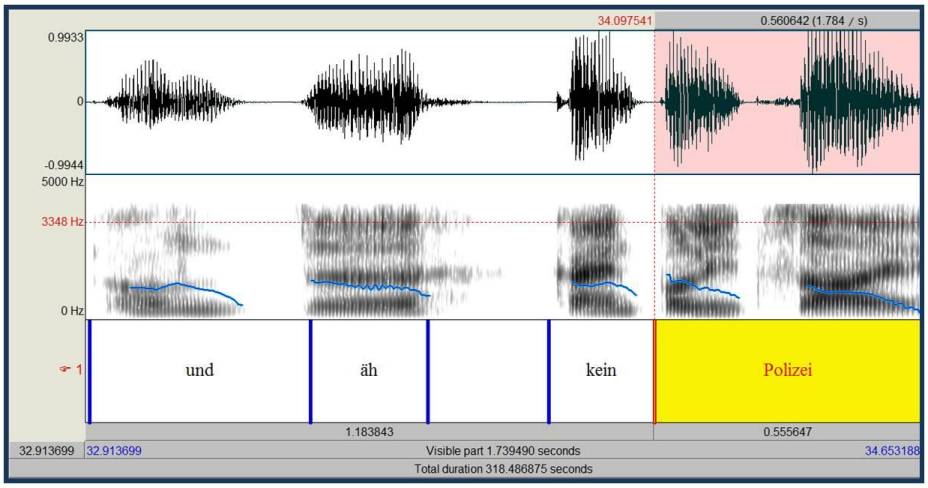

Fig. 1. This picture shows an oscillogram, a spectrogram and the orthographic transcription of a speech signal. Vowels in the spectrogram can be recognised by dark horizontal bands, also called formants. Blue lines show the fundamental frequency of the speaker, heard as pitch. Both formants and frequency are speakerspecific features and can be measured.

Gea de Jong-Lendle, Ph.D., M.Phil.

Gea de Jong-Lendle teaches phonetics and is Head of the Forensic Phonetics Unit at the University of Marburg carrying out casework and providing consultancy. Her research interests focus on the area of forensic and perceptive phonetics. She has undertaken forensic investigations since 1994 for both prosecution and defence in the US, UK, the Netherlands and Germany. She obtained her MPhil at the University of Cambridge, where she was also a senior research associate in the DyViS project. Her PhD in the USA was on earwitness characteristics and speaker identification accuracy. She is actively participating in training programs for police/justice departments and educational institutions. Since 2007, she provides consultancy for developing forensic laboratories as a forensic expert for the European Commission.