Could you identify a criminal by their voice? It's far harder than it sounds

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Credit: AI-generated image (disclaimer)

Over five years in the late 1970s, the Yorkshire Ripper was murdering women and the hunt for one of the UK's worst serial killers was on. During this time, the police were sent three letters and an audio communication, purportedly from the killer – clues that led the investigation to be moved from West Yorkshire, where the Ripper (later

to be named as Peter Sutcliffe) was indeed operating, to the north-east of England.

The man behind these infamous hoaxes, dubbed "Wearside Jack", was later found to be John Samuel Humble – and it was his north-east accent which temporarily directed the police to the wrong part of England.

The police had decided that the recording of "Jack's" voice could help to lead them to the killer. Stanley Ellis, a linguist who worked on the Survey of English Dialects at the University of Leeds, was asked to listen to the voice and decide where the speaker was from. He used particular distinctive features to determine that the accent was from the Sunderland area and also spent much time in the area recording local speakers and asking them to listen to the voice on the tape to decide which village it might come from.

As later became clear when Humble the hoaxer was finally caught, Ellis had correctly identified the location of the man on the tape. Unfortunately, however, the man on the tape wasn't the real killer. But while this false lead encouraged the police to pursue a red herring – allowing Sutcliffe to avoid detection until he had killed another three women – it did show how many clues can lurk in any of our voices.

Spoken evidence

Everybody has an accent and we know that speakers are judged in society by the way they speak. But it is also the case that accents can be used by the police and courts as evidence.

The victim of a crime might not always get a clear view of the perpetrator. In cases such as telephone fraud, blackmail or a masked attack, the sound of a perpetrator's voice might provide one of the only clues to their identity. In situations like this, the police have to rely on

earwitness, rather than eyewitness, evidence.

The earwitness might be required to provide a description of what the voice sounded like, and to say where they think the person was from. But unlike Ellis, witnesses are likely to be "lay listeners"; they will not have expert knowledge of linguistics and may well make mistakes. Consequently, our research is designed to examine how successful people are at accurately recognising accents, and to fill a gap in the literature.

We still know relatively little about the conditions that might affect the accuracy and reliability of voice identification evidence. Over the past century, a large body of research has focused on the accuracy of eyewitness testimony. The outcome of this research has filtered into the legal process, resulting in the Turnbull guidelines, and influencing codes of practice. In comparison, earwitness testimony has been largely neglected, and there remain many gaps in our knowledge.

One thing we do know is that memory for voices is error prone. Research has consistently shown that people tend to remember faces much better than they remember voices. This might be because we pay more attention to what is being said, rather than the sound of someone's voice, and the fact we are used to being able to rely on someone's face for information about his or her identity.

We also know that finding words to accurately describe voices is difficult for lay listeners. The descriptions they produce have a tendency to be inaccurate, vague and subjective. This is problematic because the description provided by an earwitness can provide crucial evidence.

What did it sound like?

Accent is a salient voice feature and is likely to be mentioned by

witnesses. However, the extent to which accents tend to be accurately described by lay listeners is not without disagreement and research suggests speakers find it difficult to recognise even culturally noticeable or common accents.

Our experiments so far have involved people listening to different native English speakers – some with strong regional accents (Experiment 1) and some with less strong accents (Experiment 2). Some of our initial findings showed that being a native speaker makes people more accurate, as does the number of locations they have lived (with living in more locations making them better judges), but this was not consistent across both experiments.

We may have expected regions lived in to also have an effect, but this was not the case for all participants – some people who have lived in many parts of the UK were still poor at identifying accents, while others who have only stayed in one location were good at it.

We also asked participants to score how confident they felt about their accuracy. Our results showed that their confidence bore no relation to accuracy. This means that people who think they are accurate are not more likely to actually be so.

We may have also expected age to have an effect (having lived longer and been more likely to have come into contact with more accents) but it doesn't. So we can hypothesise that some people, even when they have heard an accent before many times, still can't identify it.

Our research will help answer the question of the accuracy of such judgements and assess whether any support can be put in place to help make such judgements, thereby reducing the risk of miscarriages of justice. Accents can provide vital clues, but they can also lead us in the wrong direction altogether.

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