Identifying idiolect in (forensic) authorship attribution: an n-gram textbite approach

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Sociolinguistic theory has long held the notion that language varies according to user and use and that individual variation can be accounted for by a theory of idiolect. Coupland’s (2007) work on style and styling notes that the notion of idiolect is thrown into confusion by the idea that speakers draw on repertoires and that there are no ‘single-style speakers’ (Labov 1972: 208). In a forensic context, forensic sociolinguists are interested in identifying individuals on the basis of stylistically consistent features of author style. Authorship attribution aims to identify authors of disputed or anonymous documents in criminal cases or other investigative work, such as uncovering JK Rowling writing under the name of Robert Galbraith (Sunday Times 14 July 2013). Idiolect has been at the heart of forensic authorship work (Coulthard 2004: 31). However, there is growing concern in the field that it remains too abstract or idealised to be of practical use to the forensic linguist (Kredens 2002; Grant 2010; Turell 2010: 217).

Drawing on a corpus of 60,000 emails and 2.5 million words written by 175 employees of the former American energy corporation Enron, this paper argues that when analysing substantial bodies of emails by any author, it is possible to identify ‘n-gram text bites’, small portions of text two to six words in length that characterise an author’s writing. Word n-grams are reproduced to such an extent that they may be considered habitual, unique, and attributable to individual authors, with different employees producing different word n-grams within the same communicative contexts, such as making requests. Results of statistical experiments find that word n-grams can assign anonymised email samples to their correct authors in the Enron dataset with success rates as high as 95%.

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