Capturing Poe in the Gothic Tales - Exploring Allan Poe's Stylistic Distinctiveness from a Computational Stylistic Approach[1]

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Stylistics has long been focused on the excellence of technique, with the goal of exploring the relation between language structure and its function (Leech and Short, 2007). The literary approach of stylistics explains the choice of language in terms of its artistic effects, treating stylistics as a bridge between linguistic analysis to literary criticism (Carter and Simpson, 1989). On the other hand, the fast development of natural language processing and corpus--based statistical technology has made it possible to study linguistic patterns of literary texts in large quantities. As a result, this development furthers the study of some original concerns of authorial style, such as if an author's style is as distinguishable as those critics have believed (Busse & McIntyre, 2010). Researchers have employed corpus and computational methods in the study of authorship attribution, however, most of these studies have focused on attributing unknown texts to possible candidates while rarely making attempts to identify the stylistic features contributing to the author's distinctiveness. Thus, Hugh Craig (1999) argued that authorship attribution should go hand in hand with stylistic description. Our study draws on both literary stylistic description and the techniques used in authorship attribution to explore the stylistic distinctiveness of Edgar Allan Poe to construct the stylistic profile of a gothic writer with both stylistic descriptiveness and statistical rigor.

Being a world renowned figure of the 19 century American literature, Edgar Allan Poe left the world with a large quantity of literary works including essays, short stories and literary criticism that have received constant academic interest from different fields of study. Scholars from these fields vary in their research interests in terms of both language and literature. Some studies devote to interpreting the theme of a particular writing of Poe (Gargano,1960;; Ginsberg, 1998), while some aim at elaborating Poe's literary and aesthetic theories (Polonsky, 2002;; Freeman, 2013). Studies exploring the stylistic features of Poe's writings (Carringer, 1974;; Fisher, 2002), have often focused on the gothic elements of his stories and generally are from an impressionist qualitative approach. Doubt exists pertaining to whether critics' artistic intuition can be supported by more objective evidence which remains salient in all Poe's writings rather than individual sentences, and thus, the quantitative research of Poe's writing is also needed. However, comparatively fewer studies have been carried out from this approach.

Using a computational stylistic approach via cluster analysis, our study explored the stylistic features of Poe's short stories. This computational stylistic approach evaluated distinctive feature qualities and identified specific stylistic properties that distinguished Poe's stories from other gothic writers' work. Seventeen tales from seven world--renowned gothic writers---- Ann Radcliffe, Matthew Lewis,

Charles Brockden Brown, Edgar Allan Poe, Nathaniel Hawthorne, Robert Louis Stevenson, and Bram Stoker---- were selected for automatic cluster analysis. These works represent the gothic fiction in different eras of development from 1790 to 1909, with Poe's writings positioned in the middle of the timescale. Four consecutive experiments were conducted, in which, a variety of stylistic features were chosen as criteria for cluster analysis. Based on the chosen features, Poe's writings were successfully clustered together as separate from those of the other gothic writers, suggesting that the chosen features from Poe's writings can be distinguished from the other gothic writers. Following this, further comparisons between Poe's text collection and that of other writers were carried out to further explore Poe's characteristic stylistic features.

These results show that the distinctiveness of Poe's style of writing could be captured by quantitative computational methods via cluster analysis. This distinctiveness manifested itself in a variety of stylistic features including bag of words, core lexical words, the part of speech of core lexical words, and semantic fields. To be more specific, Poe's texts revealed a strong preference towards the preposition of "upon" over "on", which contrasts sharply with the writings of the other gothic writers. In terms of the lexical words, Poe favors those denoting places and constructions, such as "wall(s)", "vault", "dungeon" and "floor", which echoes with Carringer's (1974: 508) remarks that Poe's writings "conspicuously involve severely restrictive enclosures". Moreover, the words denoting "anatomy and physiology" and "health and disease" are distinctively salient in Poe's writings. The former category involves a great variety of body parts ranging from top ('head", "face", "neck" and so on) to bottom (such as "abdomen", "foot", "heel") and from outside (such as "hair", "limbs", "wrists") to inside ("lungs", "nerves", "blood" and so on), while the latter contains both the words of physical symptoms (such as "inflamed", "pallor", "fever") and mental symptoms (such as "exhausted", "agonies", "stupor"), which help create a sense of psychological terror manifested in Poe's gothic works. In terms of the part of speech of the core lexical words, Poe's texts demonstrate a noticeable preference for general adverbs, which, with their modifying function, contribute to the expressiveness of Poe writings.

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