

RE-VISIONING AYI KWEI ARMAH'S *FRAGMENTS*: A CORPUS STYLISTIC ANALYSIS USING WMATRIX

UN REPLANTEAMIENTO DE *FRAGMENTS*, DE AYI KWEI ARMAH: ANÁLISIS ESTILÍSTICO DE CORPUS CON WMATRIX

REPENSER LES *FRAGMENTS* D'AYI KWEI ARMAH : ANALYSE STYLISTIQUE DU CORPUS AVEC WMATRIX

REPENSANDO OS *FRAGMENTS* DE AYI KWEI ARMAH: ANÁLISE ESTILÍSTICA DE CORPUS COM WMATRIX

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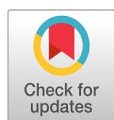
ABSTRACT

The numerous literary explorations of Ayi Kwei Armah's novels reveal his aesthetic creativity and relevance in addressing African and diasporic issues that have contemporary relevance. Guided by two objectives, this corpus study set out to analyse the narration and thematisation of Armah's *Fragments* (1970) through part-of-speech and semantic domain tags using Wmatrix. We compared *Fragments* as a target corpus with two other novels by Armah. Results of the analysis suggest that Armah alternates between homodiegetic narrative in character dialogues and monologues, which dominate the main heterodiegetic discourse narration. He also provides a critical perspective on the immediacy of a historic and instantaneous present by giving a specific past account that projects a possible continuity of events in Ghana and Africa. Additionally, Armah discusses the geographic mobility of characters as a metaphor for a quest for a place of being and identity. These findings illustrate the value of applying computational tools like Wmatrix to examine African literary texts and provide a base for further studies.

Keywords: Ayi Kwei Armah, *Fragments*, narration, thematisation, Wmatrix

RESUMEN

Las numerosas exploraciones literarias de las novelas de Ayi Kwei Armah revelan su creatividad estética y su pertinencia en el tratamiento de cuestiones africanas y diaspóricas de relevancia actualmente. Con dos objetivos trazados, este estudio de corpus se propuso analizar la narración y la tematización de *Fragments* (1970) de Armah mediante etiquetas de campo semántico y parte del discurso utilizando Wmatrix. Comparamos *Fragments* como corpus objetivo con otras dos novelas de Armah. Los resultados del análisis indican que Armah alterna entre la narrativa homodiegética en los diálogos y los monólogos de los personajes, los cuales dominan la narración principal del discurso heterodiegético. El autor también aporta una perspectiva crítica sobre la inmediatez de un presente histórico e instantáneo



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al ofrecer un relato específico del pasado que proyecta una posible continuidad de los acontecimientos en Ghana y África. Además, Armah analiza la movilidad geográfica de los personajes como metáfora de la búsqueda de un lugar del ser y de la identidad. Estas conclusiones ilustran el valor de aplicar herramientas informáticas como Wmatrix para examinar textos literarios africanos y proporcionan una base para futuros estudios.

Palabras clave: Ayi Kwei Armah, *Fragments*, narración, tematización, Wmatrix

RÉSUMÉ

Les nombreuses explorations littéraires des romans d'Ayi Kwei Armah révèlent sa créativité esthétique et sa pertinence dans le traitement des questions africaines et diasporiques d'actualité aujourd'hui. Guidée par deux objectifs, cette étude de corpus a pour but d'analyser la narration et la thématisation du roman *Fragments* (1970) d'Armah à l'aide d'étiquettes de parties de discours et de domaines sémantiques en utilisant Wmatrix. Nous avons comparé *Fragments* comme le corpus cible avec deux autres romans d'Armah. Les résultats de l'analyse suggèrent qu'Armah alterne entre une narration homodiegétique dans les dialogues des personnages et les monologues, qui dominent la narration discursive hétérodiégétique principale. Il offre également une perspective critique sur l'immédiateté d'un présent historique et instantané en donnant un récit passé spécifique qui projette une continuité possible des événements au Ghana et en Afrique. En outre, Armah aborde la mobilité géographique des personnages comme une métaphore de la quête d'un lieu d'existence et d'une identité. Ces résultats illustrent la valeur de l'application d'outils informatiques tels que Wmatrix pour examiner les textes littéraires africains et fournissent une base pour des études plus approfondies.

Mots clef : Ayi Kwei Armah, *Fragments*, narration, thématisation, Wmatrix

RESUMO

As inúmeras explorações literárias dos romances de Ayi Kwei Armah revelam sua criatividade estética e sua relevância na abordagem de questões africanas e diaspóricas que têm relevância hoje. Orientado por dois objetivos, este estudo de corpus se propôs a analisar a narração e a tematização de *Fragments* (1970) de Armah por meio de etiquetas de parte do discurso e de domínio semântico usando o Wmatrix. Temos comparado *Fragments* como corpus alvo com dois outros romances de Armah. Os resultados da análise sugerem que Armah alterna entre a narrativa homodiegética nos diálogos e monólogos de personagens, que dominam a narração do discurso heterodiegético principal. Ele também oferece uma perspectiva crítica sobre o imediatismo de um presente histórico e instantâneo, apresentando um relato específico do passado que projeta uma possível continuidade de eventos em Gana e na África. Além disso, Armah discute a mobilidade geográfica dos personagens como uma metáfora para a busca de um lugar de existência e identidade. Essas descobertas ilustram o valor da aplicação de ferramentas computacionais como a Wmatrix para examinar textos literários africanos e fornecem uma base para estudos futuros.

Palavras chave: Ayi Kwei Armah, *Fragments*, narração, tematização, Wmatrix

Introduction

The creative works of Ayi Kwei Armah address critical issues in Ghana and Africa. His novels are best known for their vivid language that informs pan-Africanism as a metaphor through visionary symbolism. His novels are *The Beautiful Ones Are Not Yet Born* (1968), *Fragments* (1970), *Why Are We So Blest?* (1972), *Two Thousand Seasons* (1973), *The Healers* (1978), *Osiris Rising* (1995), *KMT: The House of Life* (2002), and *The Revolutionaries* (2013). The themes in the novels transcend the spatio-cultural and epistemic limitations associated with colonialism, as most African novels feature. Armah's novels break the tradition of writing to recount periods in African history. This earns his novels critical attention from literary critics and researchers.

Concerning previous studies on Armah's works, Wright (1990) reviewed almost all the novels of Armah and accounted for the thematic and characterisation issues inherent in the novels. He traced lineages between the novels through themes. Conversely, Lindfors (1996) analysed Armah's *Osiris Rising* as a literary genre that documents Africa's past, present, and future. Quite related to the present study, Berry and Kumar (2021) explored *Fragments* to reveal how returnees from abroad face injustices that generally corrupt the motto of Ghana. Also, Rao (1993) commented that Ghanaian society and Africa at large are fragmented in the absence of social justice and credible ideology.

Other scholars have argued that the consumerism and materialism in *Fragments* are effects of the trans-Atlantic slave trade (Murphy, 2008). Several studies have literarily examined Armah's narrative technique (Lazarus, 1982; Lorentzon, 1998), materialism (Ayuk, 1984), nationalist ideologies (Adeoti, 2005; Macheka, 2014; O'Connell, 2012; Retief, 2009), and metaphor of worlds (Asaah & Zou, 2022; Nama, 1988; Wright, 1985). Quite recently, Mangwanda's (2019) literary analysis compared Armah's *Fragments* and *Two Thousand*

Seasons to examine how the lexical items in the novels mediate ideologies. He observed contradictory and complementary ideologies in the novels based on their lexical choices. The numerous literary explorations of Ayi Kwei Armah's novels demonstrate his aesthetic creativity and relevance in addressing African and diasporic issues that have contemporary relevance. In this work, we focus on Armah because, as a renowned African novelist, he addresses the myriad identities and predicaments of Africa, particularly Ghana. He aims to create an agency of pan-Africanism that embraces several cultures and languages in Africa.

This article aims to examine the novel possibilities of corpus stylistics in analysing African literature, mainly prose fiction. This study is guided by two main objectives: (a) to investigate the narration through parts-of-speech (POS) in *Fragments* by Ayi Kwei Armah; (b) to explore the dominant semantic fields and themes in *Fragments* by Ayi Kwei Armah.

The importance of the study lies on two main aspects. First, this study makes a novel contribution by applying corpus stylistics techniques to examine African fiction, an underexplored area in computational literary analysis. This provides a counternarrative to Western-dominated texts in computational literary analysis (Mahlberg & McIntyre, 2011; McIntyre & Archer, 2010). A comprehensive search of the literature reveals Moustafa (2022), Nkansah (2021), and Nkansah and Bonsu (2022) as the only studies that adopted corpus approaches to analyse African fiction. While we acknowledge these studies, they analysed only one novel without a comparative focus, except for Moustafa (2022), who compared two novels.

In addition, the study adopts a novel corpus stylistic approach using Wmatrix to analyse a post-colonial African literary text. This addresses the lack of computational analysis of African prose fiction. The findings from this study can complement existing qualitative scholarship on Armah's literary texts (such as Adjei, 2019; Fenderson, 2008;

Iboroma, 2017; Kakraba, 2011; Wilson-Tagoe, 1999). That is, we demonstrate the value of using computational tools like Wmatrix (Rayson, 2003, 2008) to gain new perspectives on analysing literary texts such as *Fragments*, paving the way for future applications in this under-researched area (Fialho & Zyngier, 2014; Mahlberg & McIntyre, 2011).

The following paragraphs provide a plot summary of the text in focus, the theoretical framework, the methodological procedures adopted in the study, the analysis, and a discussion and conclusion. Finally, they present the study's limitations, implications for methodological practice, and further research.

Plot Summary of the Target Text

Fragments is the second novel by Ayi Kwei Armah. In *Fragments*, readers get to know the story of Onipa Baako, the protagonist, who is a 'been-to', a person who has been abroad for education. On his return to Ghana, he becomes superstitiously connected to the western lifestyle. There is a reproduction of modern cargo mentality through the complexities of colonial dependencies. The novel's triple narrative structure generally depicts the personal experiences of Baako upon his return from America as a learned scholar. The unfulfilled expectations of not bringing home material possessions, which his family expects from him, break him. Baako's refusal to accept the identity thrust upon him by his family makes him a stranger among his family, but his mother was looking at him as if what she was staring at was something behind him.

The novel's contemporary significance mirrors an urbanised Africa craving materialism, commodities, status, lofty sinecures, and Western technologies. Baako bears witness to the eventualities around him as a sign of the corrupt Ghanaian society. He is hounded into madness by his inability to effect change and live up to expectations. In his trials, Baako relies on Juana, a Puerto Rican psychiatrist, for both spiritual and sexual companionship. Throughout the narrative, Baako is helped by Naana's

ancient wisdom, which depicts the timeless frame of historical fragmentation that informs all of Baako's endeavours. All aspects of the novel highlight a near-complete destruction of whatever fails to provide instant gratification or fulfilment to characters (including Baako). Through *Fragments*, Armah contrasts materialistic and idealistic moral values, dreams and corruption, and a world of integrity and social pressure.

Theoretical Framework

In this study, we synergise post-colonial and migration theories and use corpus stylistics to explore the socio-cultural, economic, and psychological impacts of migration and colonialism based on linguistic patterns and lexical choices. Specifically, we use the concepts of part of speech and semantic field to provide complementary stylistic interpretations.

Post-Colonial and Migration Theories

Together, these theories are broad and complex frameworks that encompass a wide range of literary works that explore the experiences of individuals in the face of colonial legacies that shape contemporary socio-cultural realities through migratory discourses (Lazarus, 2011; Mensah & Bonsu, 2022; Moore-Gilbert, 1997). In complementarity, these theories examine the social, political, and economic factors that contribute to migration as well as the cultural, psychological, and emotional effects of migration and colonialism on individuals and communities (Grosfoguel & Cordero-Guzman, 1998; Shuval, 2000).

Migration is a central theme in many post-colonial literary texts. Post-colonial literature often focuses on the experiences of migrants and the ways migration disrupts and challenges power structures (Childs & Williams, 2014) while exploring the ongoing effects of colonialism on cultural identity and representation (Gandhi, 2020). Further, the concept of diaspora, common to these theories, is an important concept that

conditions a relationship between the synergised frameworks. That is, 'diaspora' characterises features such as a sense of displacement, longing, and nostalgia, as well as the ability to adapt and create new cultural forms in response to their experiences. These features are common to post-colonialism and migration. They reflect and represent a process of dislocation and adaptation, tradition and modernity, continuity, and change, as individuals and communities negotiate their relationships with their new environments while also maintaining connections to their homelands (Dagnino, 2013; Davies, 2016; Fernandez Melleda & Alonso Alonso, 2022; Jules-Rosette, 2015).

Fragments falls within this scope, where Baako tries to negotiate his identity in a materialistic Ghanaian society. Such interpretations condition the 'cargo mentality' in Ghanaian society. Conclusively, the synergy between post-colonialism and migration theories, discussed within the frame of diaspora in literary texts, provides a rich and diverse landscape for exploring the multifaceted experiences of Baako as a migrant. *Fragments* is used as a target text to offer insights into the social, cultural, and psychological effects of migration on individuals and communities and highlight the importance of understanding the complex factors that drive migration to create more inclusive and equitable societies.

Corpus Stylistics Studies

Several studies have adopted corpus approaches to explore literary texts. Such studies are stylistic and are particularly characterised as corpus stylistics. Stylistic analysis is a relatively comparative process (Leech, 2013). Corpus stylistics reveals insights into a text by focusing on linguistic patterns through identification between quantitative and qualitative analysis (Mahlberg & McIntyre, 2011). Leech and Short (1981) proposed the need for quantitative confirmation of style and other literary interpretations as concrete evidence. Corpus stylistics has the potential to unravel crucial textual features that literary critics overlook (Stubbs, 2005).

Most corpus stylistic studies have focused on a single text (Balossi, 2014, 2020; McIntyre & Archer, 2010; Stubbs, 2005). For instance, Balossi (2020) used Wmatrix to analyse key pronouns in Conrad's *The Shadow Line*. His investigation of narrative voices in the work revealed that *I*-voice is central to the text and helped to identify other foregrounded pronouns. Previously, Balossi (2014) tested the difference in characters' language use in Virginia Woolf's *The Waves* using parts of speech and semantic domains. Stubbs's (2005) analysis of lexicogrammatical patterns in Conrad's *Heart of Darkness* revealed the idiosyncratic meaning of words. McIntyre and Archer (2010) revised the traditional qualitative study of a character's mind style in novels using Wmatrix. Culpeper (2009) explored the semantic categories of keywords and parts of speech concerning characters in *Romeo and Juliet*. Mahlberg and McIntyre (2011) explored keywords and key semantic domains in Fleming's *Casino Royale* using the Wmatrix package (Rayson, 2008). They divided the generated keywords into two groups: fictional worlds and thematic concerns. These groups were further divided into two categories: text-centred and reader-centred. We draw such inspiration from their study.

These studies provide empirical bases to juxtapose the present study's findings and expand the frames of corpus stylistics. Most of these studies are intra-textual; that is, they examine variation in the style of individual authors (Hoover, 2017), while others consider the stylistic properties of literary texts in terms of educational significance (Damerau, 1975; McIntyre & Archer, 2010). These studies focused on single novels rather than a comparative perspective on two or more texts. Also, the studies rely heavily on quantitative analysis of linguistic features without supporting it with qualitative analysis to fully interpret the thematic issues in the texts. As such, in the present study, we complement the corpus approach with qualitative interpretation to reveal the nuances in the texts.

While most of the reviewed studies on corpus stylistics are outside the African context, Moustafa (2022) compared Gordimer's *My Son's Story* and Coetzee's *Disgrace* through corpus stylistics, focusing on themes and characters. He pointed out the intersectionality of race and gender in the novels. Nkansah and Bonsu (2022) examined the foregrounding of verbal processes in Adichie's *Zikora* using AntConc. They reported the deconstruction of the myriad sufferings of women and found that the foregrounded verbal processes created shared character roles and attributed actions to characters.

Previously, Nkansah's (2021) corpus analysis of Armah's *The Beautiful Ones Are Not Yet Born* revealed that the total breakdown of society through rot, decay, corruption, and bribery rests on seemingly peripheral characters. The review indicates the relevance of computer-aided approaches in the study of literature from several perspectives. While there are some contributions from South Africa and Ghana, the link between linguistic patterns and sociocultural themes needs further exploration. This implies that corpus analysis is yet to be widely adopted in African literary criticism. No known studies have used Wmatrix to analyse Ghanaian fiction. This, thus, adds to the relevance of the present study.

The Concept of Part of Speech and Semantic Field

Part of speech focuses on the categorisation of words into their lexical and grammatical units. For the lexical, we have nouns, adjectives, and lexical verbs, while the grammatical units are pronouns, conjunctions, determiners, and auxiliary verbs. In terms of classification, one could distinguish between lexical and grammatical units with the latter referring specifically to the fact that new members are not readily accepted. Through the web-based interface of Wmatrix, a part-of-speech (POS) tag or grammatical word classification is assigned to every word in running text at the first stage of annotation with about 96-97% accuracy (Leech, 2013), for example, "VVD" for past tense of lexical verbs and "VM" for modal auxiliaries.

The semantic fields in Wmatrix use semi-hierarchical structures where words or multi-word expressions are classified based on lexical fields. In the semantic process, Wmatrix assigns semantic tags to each word or cluster of words using 21 major semantic domains that expand into 232 categories (Rayson et al., 2004). Through the categorisation, we identify more or less frequent themes in comparison to a reference corpus. In this regard, it is possible to identify patterns and trends that might be difficult to spot at the word level. The individual words together form a key semantic group, which points to the discussion of themes in the corpus.

According to Archer (2007), the semantic fields are relevant for corpus stylistic studies because they reveal recurrent themes. Complementarily, the part of speech, which focuses on grammar, feeds into the semantic field, which considers the meaning of the words. As such, the part-of-speech and semantic domain analyses give rise to analytical categories for analysis.

Method

For this research, we compared the target text, *Fragments* (FS), to a reference corpus (i.e., *The Beautiful Ones Are Not Yet Born* (1968) [TBOANYB] and *Two Thousand Seasons* (1973) [TTS]). We chose these two texts as the reference corpus based on availability (Balossi, 2020; Leech, 2013; Mahlberg, 2007). More importantly, the chosen texts share key similarities in terms of genre, cultural or geographical setting, and thematic preoccupations with the target novel, making them appropriate reference samples despite the convenience-based selection. Additionally, the three novels belong to his "novels of formation" as a single genre. Also, we chose *Fragments* as the target corpus because it mediates between TBOANYB and TTS. That is, while TBOANYB was written before *Fragments*, TTS was written after it. Socio-culturally, Armah is an outstanding Ghanaian novelist who has produced phenomenal works addressed to socio-political and historical milieus in Ghana (TBOANYB and FS) and Africa (TTS) generally.

We used Wmatrix, a computer-mediated approach for comparing bodies of texts, to characterise the differences between the two corpora. Wmatrix (https://ucrel-wmatrix5.lancaster.ac.uk/cgi-bin/wmatrix5/show_dir.pl) is a web-based software programme that automatically tags texts and presents the distribution of such texts and their semantic fields (related meanings). We uploaded the corpora to Wmatrix and used the tag wizard, which automatically annotated the corpora grammatically (POS) using Constituent Likelihood Automatic Word-tagging System (CLAWS) and semantically (semantic tags, SEMTAG) using UCREL Semantic Analysis System (USAS) annotation tools. First, each POS tag was assigned to lexemes or multi-word phrases (MWE) using a probabilistic Markov model of the more likely POS sequence. This stage achieves 97% accuracy.

Once completed, the output was fed into SEMTAG, which assigned tags based on pattern matches between the text and computer dictionaries developed for use in the programme. This stage achieved 92% accuracy, which required some manual reviews and revisions after an initial scan of the results. Although we adopted these two procedures, the semantic domains were crucial for the present study given their potential for recurrent literary thematisation (Archer, 2007).

After downloading the digital forms (.pdf) of the texts, we converted the file to word document format (.doc) for revision. We deleted the title pages and forewords in the texts. We inserted ankle brackets around the page numbers of the texts and chapter numbers so that the program would ignore those parts. After this, we converted the texts to plain text formats (.TXT), which are machine-readable by Wmatrix. Although there were some inconsistencies (such as wrong codes for some words and the presence of numbers) in processing the texts, they did not affect the analysis of the data or its interpretation. Tables 1 and 2 present the word types and tokens of the selected novels for the study.

Table 1 Word Type and Token of Target Novel

Target Novel	Word Types	Tokens
<i>Fragments</i>	8430	80423

Table 2 Word Type and Token of Reference Novels

Reference Novels	Word Types	Tokens
<i>The Beautiful Ones Are Not Yet Born</i>	5710	70411
<i>Two Thousand Seasons</i>	7310	90420
Total		160831

The reference corpus had to be larger than the target text to facilitate the key semantic and POS analyses. We acknowledge that, while larger reference corpora are ideal, small specialised corpora are still useful for focused literary analysis, which could still reveal insights even if the corpora are not enormous (Leech, 2013). Also, while the small corpus allows for a specific and detailed analysis, the computational methods support our interpretation of the text. We determined the keyness between the two corpora using statistical comparisons (Baker, 2014). Mahlberg and McIntyre (2011) described the foregrounding effects by comparing quantitative results with a reference corpus. Two word-frequency lists, one from the target corpus and one from the reference corpus, were compared for a keyness analysis. We measured keyness using loglikelihood (LL) rather than relative frequency alone. By comparing the two corpora, this statistical test establishes whether the relative frequencies are significant.

We chose the key POS and semantic domains over other approaches such as keyword analysis because keyword analysis delivered more results than the researchers could analyse (Berber, 1999). This raises concerns about what is “key” among other words. Also, while most low-frequency words that may be significant may not be identified as key, keywords only focus on lexical differences rather than semantic and grammatical differences (Baker, 2004). Finally, while there are several contentions about the context of keyness in data, we agree with Scott

(2010) that the context of a keyword is a matter of choice. To address these issues, we conducted key POS and semantic analyses, resulting in the following categories: (1) fewer keywords, thereby reducing the number of categories a researcher has to consider; and (2) grouping low-frequency words into groups where possible, which does not appear by itself as a keyword and thus may be ignored (Rayson, 2008). Hu (2015) adopted similar procedures.

Analysis

We sorted the data with POS and USAS tags. We considered fifteen (15) POS tags and Semtags with loglikelihood significance. Each of the semantic fields had a loglikelihood statistical test (LL) of $+7$ ($LL \geq +7$), which meant that the tags were statistically significant for the analysis. We used loglikelihood, which is preferred to chi-square in Wmatrix. This is because loglikelihood can indicate which corpus is overusing a feature, while chi-square just identifies a difference. Also, the loglikelihood compares the observed and expected frequencies, taking sample size into account. The normal level for statistical significance is a 95% confidence level ($p < 0.05$) chi-square value, which equates to an LL value of 3.8 or above. The recommended LL value for a word or tag to be statistically significant is above 6.63, as this is the cut-off point representing 99% confidence in its significance. We determined these following Rayson's (2003) cut-off value for a 99% confidence level. Tables 3 and 4 show the summary of the keyness of POS tags and Semtags with their observed frequencies in the target text and reference corpus (01 and 02, respectively), overuse and underuse (%1 and %2) relative to 01 and 02, respectively, sorted on LL. Underuse refers to the use of a word or phrase that occurs less frequently in the target than in the comparison corpus, while overuse refers to the use of words or phrases that occur more frequently in the target than in the comparison corpus.

Results

In this section, we present the results of the analysis of the text. First, we present the results for the key

parts-of-speech tags in Armah's *Fragments*. The second part focuses on the results for the dominant key semantic domains in Armah's *Fragments*.

Key Parts-of-Speech Tags in Armah's *Fragments*

To achieve the first research objective, we analysed the key POS tags, which reflect the various grammatical choices and expressions used in *Fragments* as compared to TBOANYB and TTS. The tags are arranged based on loglikelihood (LL) in descending order. The higher the LL value, the more significant the difference between the target and reference corpus. This is presented in Table 3.

The POS in the data indicates the different linguistic levels operating in the text. The POS analysis shows the overuse of specific patterns. We find that

Table 3 Top Fifteen POS Keyness Analysis

Item	01	%1	02	%2	LL
VV0	1385	2.27	1522	1.09 +	379.07
PPIS1	647	1.06	548	0.39 +	290.20
PPHS1	1516	2.49	2090	1.50 +	218.84
NP1	1136	1.86	1468	1.05 +	202.64
PPY	635	1.04	653	0.47 +	200.76
PPHO1	600	0.98	712	0.51 +	136.13
PPIO1	217	0.36	176	0.13 +	104.03
VVD	3121	5.12	5928	4.24 +	70.70
AT1	1639	2.69	2913	2.09 +	66.09
CC	1880	3.09	3427	2.45 +	62.15
VVG	1479	2.43	2690	1.93 +	49.80
RP	335	0.55	479	0.34 +	42.33
NN1	9105	14.94	19860	14.22 +	15.22
NNB	17	0.03	10	0.01 +	12.16
CCB	432	0.71	848	0.61 +	6.75

POS keys: VV0 (base form of lexical verb), PPIS1 (1st person sing. subjective personal pronoun), PPHS1 (3rd person sing. subjective personal pronoun), NP1 (singular proper noun), PPY (2nd person personal pronoun), PPHO1 (3rd person sing. objective personal pronoun), PPIO1 (1st person sing. objective personal pronoun), VVD (past tense of lexical verb), AT1 (singular article), VVG (-ing participle of lexical verb), RP (prepositional adverb, particle), NN1 (singular common noun), NNB (preceding noun of title), and CCB (adversative coordinating conjunction).

the base form of lexical verbs has a higher LL score of 379.07. This result reveals the observed features of literary analysis, which contributed to foregrounding this pattern even more. To deepen the essence of verbs in the target text, past tense and -ing participle forms of lexical verbs were also identified with loglikelihoods of 70.70 and 49.80, respectively. What appears to be central in Armah's *Fragments* is his use of lexical verbs and their meaning. The quantitative analysis shows the pervasiveness of lexical verbs and their forms in the novel. Figure 1 provides a concordance instance of vv0.

When compared to the reference corpus, the lexical verbs (vv0, vvd, and vvg) in the target text take up more space than they do in the reference corpus. This is because Armah captures the immediacy of a historic and instantaneous present (vv0) by giving a specific account of the past (vvd) to project a possible continuity of events (vvg) in Africa. Leech (2013) reported similar findings where the s-form of lexical verbs vvz, as well as vv0 and "is" (vbz), was key. In this regard, we anticipate a possible semantic domain in the second portion of the analysis.

Another striking feature is the dominant use of pronouns such as ppis1 (1st person sing. subjective personal pronoun) with a LL of 290.20, pphs1 (3rd person sing. subjective personal pronoun) with a LL of 218.84, ppy (2nd person personal

pronoun) with a LL of 200.76, and ppho1 (3rd person sing. objective personal pronoun) with a LL of 136.13 (see Figure 2). This highlights the psychological processes that followed Baako's experiences and near-madness upon his return.

We find it essential to distinguish between I-pronouns referring to the protagonist and those referring to other characters speaking directly. We have provided instances in Extracts 1 and 2.

(1) But *I* remembered how perfect the words had been for his departure and his protection, and *I* was happy inside myself that *I* had taken the drink from Foli and given the ancestors their need. (16)

(2) *I* don't see what else *I* could have done. *I* have my certificates, and if they want to test me... (68)

Extract (1) presents a first-person reference from Naana, Baako's grandmother, whose narration begins the novel. Extract (2) is another from Baako. We distinguish between the first-person pronouns of Naana and Baako based on the use of historic past tense forms in Naana's narration as opposed to the base and present tense forms in Baako's narration. This reiterates the occurrence of vv0 and vvd in the corpus analysis. On this note, the novel focuses on the central character, Baako. A brief etymology of the name "Baako" means "one" which is evidenced in the "I" (oneness) of the narration through the base form of lexical verbs. Although this provides an

Figure 1 KIIC Context of the Base Form of Lexical Verbs

1385 occurrences.			Extend context	
That is how all hving things	come back	after long absences , and in	1 More	Full
years I have watched the sun	go down	times unending toward the nig	2 More	Full
e heat from the cold , and I	know	it is I who have changed , no	3 More	Full
ing by the stairs where they	begin	I had spent forgetful time 2	4 More	Full
at I had surely felt the sun	touch	my sldn and leave its warmth	5 More	Full
lt the sun touch my sldn and	leave	its warmth on it , but then I	6 More	Full

Figure 2 KIIC Context of 1st Person Singular Subjective Personal Pronoun

647 occurrences.			Extend context	
eturns . He will return . How can I		not know it when all my years I ha	1 More	Full
n I not know it when all my years I		have watched the sun go down times	2 More	Full
o true , it is so long since last I		saw the sun , going or coming . Bu	3 More	Full
tell the heat from the cold , and I		know it is I who have changed , no	4 More	Full
le weeks that have passed me by ? I		had moved myself into the middle o	5 More	Full
ng by the stairs where they begin I		had spent forgetful time 2 / Fragn	6 More	Full

authority of experience in *Fragments*, it raises critical concerns about who owns the narrative. The quantitative analysis provides a stronger validation of the 1st-person singular subjective personal pronoun. This contrasts with the first-person plural, “we” narrative style used in TTS. In TTS, the first chapter opens with a bold statement from a plural perspective: “We are not a people of yesterday” (1). In TTS, the narrator establishes the authority to speak on behalf of this collective, and there is also a “they” who does not understand the “we”. This is opposed to the homodiegetic experiences of individual characters in *Fragments*, which signifies the alienation of an individual from society (Ampofo et al, 2020).

Also, the frequency of occurrence of PPIO1 (1st person sing. objective personal pronoun [me]) supports the results. This shows one aspect of the triad narrative form of the novel, where Baako becomes the first-person experiencer, as opposed to Naana, the third-person narrator. A concordance search of PPHS1 confirms the third-person (see Figure 3). We argue that the third-person narration is dominant in TBOANYB. However, the context of the I-pronoun indicates its stylistic implications. The overrepresented narrative of the I-pattern is strengthened through the keyness analysis between *Fragments* and the reference corpus. Observing the

POS tags, we find that PPHO1 has a lower frequency compared to the other forms.

From Figure 3, the mention of Baako in Line 19 of the concordance reflects that the higher frequency of “he” compared to “she” and “it” in the text relates mostly to Onipa Baako. Given that the novel revolves around Baako, the higher frequency of “he” is appreciable and expected. This hints at a narrative centred around an internal self-referential I-voice (PPIS1) with a strong focus on the external referential “he”, mostly used by Naana, which reflects Baako. From the concordances provided, the he-pronoun that is used by other narrators, such as Naana, usually refers to the I-protagonist, Baako. There is a notable underuse of plural pronouns in the text. This marked underuse is a stylistically salient pattern.

Another POS tag that requires attention is PPY (2nd person personal pronoun). In its stylistic use within the context of *Fragments*, it addresses and positions the reader as the writer, with a clear implication that functions identically. Some examples include *Where you are going, go softly* (5), *How did you forget, then?* (12), and *You can wait here for me* (52). The frequency of PPYs in the novel constitutes deliberate stylistic mannerisms that carry critical intent, as explained. Additionally, the frequent use of “I”

Figure 3 KIIC Context of ‘He’ in 3rd Person Sing. Subjective Personal Pronoun

k to begin pouring out the sclinapps	he	had been holding in those hands of hi	10	More		Full
te so much to let hot drink escape .	He	had kept the spirits waiting hke begg	11	More		Full
hbaton and , thirsty drunkard that	he	has always been , even when at last h	12	More		Full
has always been , even when at last	he	began to pour it out he only let go o	13	More		Full
when at last he began to pour it out	he	only let go of htltle miserly drops ,	14	More		Full
their upper hds . Slyly hke a thief	he	was measuring the bottle in his soul	15	More		Full
ng the bottle in his soul . The less	he	poured out to end the thirst of the g	16	More		Full
him and let him prosper there whcrc	he	is going . And whcn he returns let hi	17	More		Full
r there whcrc he is going . And whcn	he	returns let his return , hke rain , b	18	More		Full
perfect words . I looked at Baako .	He	had the smile of the young on his fac	19	More		Full
s something from another place , and	he	was impatient hke a child to see it e	20	More		Full
mpatient hke a child to see it end .	He	would spend the night hanging in the	21	More		Full
spend the night hanging in the sky ,	he	had told me that before , and already	22	More		Full
in spite of the beauty of the words	he	had spoken , remained inside his soul	23	More		Full
rink had remained unpoured , and nOw	he	went and took from among his many shi	24	More		Full
or Baako . It was a very small glass	he	took , the shriveled soul , the bette	25	More		Full
unsatisGed tongues of the ancestors	he	had already cheated . His filthy ears	26	More		Full
ving men. tioned his drunken gluttony	he	sought to give saving reasons for him	27	More		Full
ing , " We must not make him drunk .	He	is young , and he will be traveling i	28	More		Full

and “you” is an attempt to avoid self-reference and excessive egotism in the text. An attempt to embed PPIS1 and PPY would generalise the narrative situation and constitute a maxim of behaviour guiding the reader to prepare for such events. This is viable given the contemporaneity of “been to” and “cargo mentality” among Ghanaians. The effect of unmet expectations makes such experiences disheartening. The next portion of the analysis focuses on the semantic domains in the target text.

Dominant Key Semantic Domains in Armah's *Fragments*

The key semantic domains show the “aboutness” of the text rather than conventional stylistic characteristics. The semantic domains are categorised and interpreted to unravel thematic issues in *Fragments*. The key semantic domains in *Fragments* are sorted based on LL (see Table 4).

Table 4 Top Fifteen USAS Keyness Analysis

Item	01	%1	02	%2	LL
M3	446	0.73	595	0.43 +	71.94
B3	101	0.17	71	0.05 +	58.91
Z2	152	0.25	145	0.10 +	55.65
E4.1+	301	0.49	403	0.29 +	47.99
Z3	137	0.22	136	0.10 +	46.50
Q1.2	136	0.22	143	0.10 +	41.04
M5	64	0.11	49	0.04 +	33.34
H3	40	0.07	23	0.02 +	29.28
B5	218	0.36	313	0.22 +	27.11
M1	1451	2.38	2871	2.06 +	20.48
Q2.1	701	1.15	1326	0.95 +	16.55
Y2	14	0.02	6	0.00 +	13.27
Q4.3	24	0.04	21	0.02 +	10.22
Z8	7709	12.65	16933	12.12 +	9.53
A5.1-	57	0.09	78	0.06 +	8.44

USAS tag keys: M3 (Vehicles and transport on land), B3 (Medicines and medical treatment), Z2 (Geographical names), E4.1+ (Happy), Z3 (Other proper names), Q1.2 (Paper documents and writing), M5 (Flying and aircraft), H3 (Areas around or near houses), B5 (Clothes and personal belongings), M1 (Moving coming and going), Q2.1 (Speech: Communicative), Y2 (Information technology and computing), Q4.3 (The Media: TV, Radio and Cinema), Z8 (Pronouns), and A5.1- (Evaluation: Bad).

Readers of Armah's novels would understand and agree that features such as M3, Z2, M5, H3, and M1 have a “key” role in Armah's novels. He typifies the significance of geography and movement (migration) generally for metaphorical implications. Comparing the target text with the reference corpus, some semantic tag areas show strikingly high loglikelihoods. For instance, “vehicles and transport on land” (such as *cars, lorry, road, vehicles, and drivers*), “geographical names” (such as *Accra, Jamestown, America, Paris, Britain, Africa, and Ghana*), “flying and aircraft” (such as *airplane, airliner, airfield, plane, and flying*), “areas around or near houses” (such as *side-street, alley, and yard*), and “moving coming and going” (such as *moving, journeys, gone, left, return, travelling, and departure*) are categorised from a spatio-temporal perspective, which relates to the theme of migration in the target text. The geographical names (Z2) reflect the various settings of the narrative. For instance, geographies such as *Accra, Jamestown, Africa, and Ghana* interact with Western and European geographies such as *America, Paris, and Britain*. Figure 4 illustrates the concordance for M3, which is the most over-used semantic domain in the text.

The semantic domains (M3, M5, H3, and M1) reflect movement, implying migration. For instance, M3 and H3 signify intra-migration, while M5 and M1 reflect inter-migration. We find an association between migration, “been to”, and “cargo mentality”. The theme of migration has been explored minimally in Armah's novels, such as *TTS* (Dieng, 2018; Guendouzi, 2017) and *Osiris Rising* (Ozoh, 2018), and only once in *Fragments* (Opoku-Agyemang, 2013) in a meeting paper. This elusive theme revealed through the analysis requires critical attention.

Although more abstract semantic domains such as B3 (examples are *clinic, hospital, nurses, and healer*) are challenging to interpret, they arguably mirror Armah's exploration of practical reality and provide remedies for purification and healing from corruption, familial antagonism, materialism, and psychological traumas. That aside, “speech:

Figure 4 KIIC Context of M3

bles that flew apart with the	car	's advance , and even this was	103	More	Full
still visible marks of heavy	trucks	and caterpillars . After a sha	104	More	Full
a sharp chmb she stopped the	car	in a small clearing . The road	105	More	Full
car in a small clearing . The	road	seemed to have stopped nowhere	106	More	Full
yam plant . She moved along a	path	crossing the groundnuts . When	107	More	Full
ands till she came to another	path	leading down from the hill . I	108	More	Full
their earth . Juana lost the	path	, found it several times again	109	More	Full
ening up , saw just along the	path	a single flower on a stalk tha	110	More	Full
, getting to the side of the	road	, there was nothing but sandy	111	More	Full
waiting for a long gap in the	traffic	. After the vehicles bad passe	112	More	Full
ap in the traffic . After the	vehicles	bad passed , while she was cro	113	More	Full
, while she was crossing the	road	, she looked down and saw trac	114	More	Full
she kept looking back at the	road	even when she had crossed it a	115	More	Full
fell again farther along the	road	, bouncing and then coming to	116	More	Full
ns parted from other sand . A	truck	passed on its way to Terna , a	117	More	Full
pressed those directly in its	path	into the tar . The coconut lea	118	More	Full
ed up the sand to wait by the	roadside	to get on small buses returnin	119	More	Full
the roadside to get on small	buses	returning from Terna to Accra	120	More	Full
na to Accra . After the third	bus	the prophet said farewell to t	121	More	Full

Figure 5 KIIC Context of Pronouns

o more of the spirit in it for him	to drink . I looked from the yo	353	More	Full
pirit in it for him to drink . I	looked from the young man to :	354	More	Full
looked from the young man to : his	uncle , and then my blood was p	355	More	Full
man to : his uncle , and then my	blood was poisoned with the fea	356	More	Full
was poisoned with the fear of what	would happen if Folts greed for	357	More	Full
y of the hbaton . And . Foh , he	had hlrrned his back with the ro	358	More	Full
on . And . Foh , he had hlrrned his	back with the rolls of skin on	359	More	Full
back with the rolls of skin on it	, and he was preparing to take	360	More	Full
the rolls of skin on it , and he	was preparing to take himself a	361	More	Full
, and he was preparing to take himself	a glass with no false cheating	362	More	Full
se cheating bottom and to pour his	blind soul a full drink of the	363	More	Full
. There was nothing other for me	to do . I waited till he had dr	364	More	Full
s nothing other for me to do . I	waited till he had drawn the gl	365	More	Full
r for me to do . I waited till he	had drawn the glass . It was a	366	More	Full
till he had drawn the glass . It	was a big one . Then I said , '	367	More	Full
drawn the glass . It was a big one	. Then I said , ''It is your mi	368	More	Full
lass . It was a big one . Then I	said , ''It is your mind to pou	369	More	Full
ig one . Then I said , ''It is your	mind to pour me out a drink in	370	More	Full
id , ''It is your mind to pour me	out a drink in that , Foh . " O	371	More	Full
h . " Over bis face there came that	anger which shame so swiftly ch	372	More	Full

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communicative" (Q2.1), "the media: TV, radio and cinema" (Q4.3), and "paper documents and writing" (Q1.21) mark a critical perspective associated with communication and verbal processes. Some instances from Q2.1 are *said*, *told*, *voice*, *spoke*, and *chatting*. These construct a dialogic exchange between characters in the novel (Nkansah & Bonsu, 2022). The domain of Y2 is incidental to the text. This is because, in a contextual review of the concordance, words such as *screen*, *web*, *ping*, and *lan* (local area network) had no significance.

The relevance of Z8 (pronouns) (such as *he*, *I*, *my*, *everything*, *myself*, *that*, *you*, and *her*) is identified in the novel as well. Pronouns play stylistically relevant roles in several interrelated literary features and their associated meanings. Perhaps the pronouns are

a fundamental part of the construction and manipulation of narrative or poetic voice. Figure 5 illustrates some concordance of pronouns in *Fragments*.

A large proportion of pronouns expresses both objectivity and signification, acting in sentences as subject and object on the one hand and definition on the other (Dilfuza, 2022). This property of pronouns fundamentally sets them apart from nouns and adjectives. In all literary text types, pronouns are key elements in generating rhetorical structures of orientation, interaction, and addressing at and beyond the narrative level.

The theme of materialism through a "cargo mentality" in Ghanaian society is portrayed through B5 (clothes and personal belongings; *caps*, *t-shirts*,

pockets, luggage, sandals, clothes, jumpers, jewellery, and suits) with an LL of 27.11 and heavily supported by Z3 (other proper names) with an LL of 46.50. Examples from Z3 concordances are *Mercedes*, *REGAL*, *Peugeot*, *martinis*, and *Avenida Hotel*. These instances are symbols of affluence demonstrated on the altar of materialism, instant gratification, and aggrandisement. Such events are depicted in urbanised Accra, Ghana, which correlates with the geographic name domain (Z2).

The frequency of the occurrence of "Happy" (E4.1+) in *Fragments* proves contradictory yet insightful. Wright (1990) asserts that Armah's vision in *Fragments* is darkened because, unlike in *TBOANYB*, where the man metaphorically serves as a vehicle for purification, in *Fragments*, Baako acts as a victim of expected materialism. This interpretation contradicts the "Happy" semantic tag of the novel. We provide concordance for this field in Figure 6.

From the concordance of the text in Figure 6, past tense forms concerning E4.1+ are dominant. This places E4.1+ in the past rather than the present. The nominal use of "smile" ironically deviates from the base form, which does not signify an action. The occurrence of *smile* cannot be associated with positive emotions because smiles

are conceptualised as frequent facial expressions that may not bear any significance (Ruch, 1990). *Suppressed titters* in Line 64 of the concordance support this interpretation. This means that the happiness in the novel is a forced emotion given the ruinous and tragic events surrounding the main character, Baako.

Discussion and Conclusion

In this study, we analysed Armah's *Fragments* through parts-of-speech and semantic domain tags compared to his two other novels. Through the analyses, we identified the distinctiveness of *Fragments* as contrasted with the reference corpus. We found that Armah crafted first-person pronouns around the main third-person narration, providing authorial credibility and emotional involvement in the novel. Given that the I-narrator is the sole occupant of the narrative, the concordances contained more I-pronouns, as this narrative focused exclusively on the protagonist's inner self. Although *Fragments* was written in a third-person mode of narration, the corpus indicated the dominance of first-person singular pronouns. This contradicts the findings of other scholars (Lorentzon, 1997), who characterised Armah's writing from a plural perspective. We argue that the first-person

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Figure 6 KIIC Context of 'Happy'

e has promised you ? " The woman	smiled	, very coyly. nPerhaps you know ,	44	More	Full
ople come to the prophet . " The	smile	was.even coyer now . ''But I am n	45	More	Full
ng he was totally lost . " Juana	smiled	and said , " A mother 's fears-''	46	More	Full
er tears stayed unshed , and she	smiled	. c'Be cause of him I have come t	47	More	Full
iful , " t'he woman said . Juana	smiled	. " You arc a doctor ? " " A psyc	48	More	Full
n , " Juana said . Her companion	smiled	and thanked her . ul left my car	49	More	Full
ee chmbt Juana said . The woman	laughed	. " I should be saying tlint to y	50	More	Full
a did not know what to say . She	smiled	self-con sciously and said again	51	More	Full
Ifs just my job . " The woman 's	smile	turned into open laughter , and s	52	More	Full
woman 's smile turned into open	laughter	, and she waved to Juana all the	53	More	Full
? " The girl shook her head and	smiled	. " It will be safe . '' " O.K. "	54	More	Full
at the pointer . ''Perfectt she	smiled	. Baako smiled back , thanked her	55	More	Full
. ''Perfectt she smiled . Baako	smiled	back , thanked her , and pushed t	56	More	Full
a photo artist 's sl-y . A httle	smile	relaxed his hps below the still a	57	More	Full
got through the gate , waved and	smiled	a very happy shille . Baako turne	58	More	Full
e gate , waved and smiled a very	happy	shille . Baako turned his head ,	59	More	Full
g behind him to see for Yhom the	smile	could have been meant ; but all h	60	More	Full
to have noticed the black man 's	smile	out front . He turned and saw tJl	61	More	Full
ncing stewardess . With a steady	smile	the stewardless stopped and leane	62	More	Full
e saw her shake her head , still	smiling	while her hps moved making inaudi	63	More	Full
en the plane takes off . " Still	smiling	, she wnked swiftly by , makjng	64	More	Full
voice , and then the suppressed	titters	of the other stewardesses before	65	More	Full
ough the plane 's interior . its	smile	a verv audible part of it . ''f .	66	More	Full

pronouns provide a critical reflection on the psychological and emotional experiences of Baako. We find little effect of Armah's communal narrative voices (Wright, 1990) in *Fragments*.

The first-person pronoun "I" forces readers to envision the individuals in the text rather than a collective society and their roles (Mahlberg, 2007). This explains why the novel features singular characters as opposed to TTS. The emotional involvement of Armah is characteristic of the dominant first-person markers such as "I". Although the narration is from a third-person perspective, the corpus procedures reveal a dominant use of first-person pronouns. That is, while the story is told from a third-person perspective, the analysis reveals a dominant use of "I" from the main character and other characters. The instances of "I-narrative" language extracted by the computational process are sourced predominantly from character dialogue and monologue rather than the main narrative discourse itself.

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This finding highlights the subtle intricacies of voice, perspective, and identification with characters that go beyond just the grammatical narrative person. The patterns reflect the first-person thoughts, emotions, and perspectives of specific characters permeating the main heterodiegetic narrative. The first-person markers in the text provide an experiential environment within which the Baako functions. This is because there is a statistical difference between the PPIS1 and the other forms of pronouns in the target text compared to the reference text. This suggests that Armah's *Fragments* relied on a dyadic I-he type of narration, which is used in the subject position and tends to exclude I-they, I-we, I-she, and I-it, as was found by Balossi (2020).

Critically, the I-he narration informed a conflict between Baako and Brempong based on the concept of cargo mentality. That is, while "I" reflects Baako, who gives personal accounts of not meeting expectations of cargo mentality, he is associated with Brempong from society's perspective because Brempong brings cargo on his return. Finally, the

dominance of the base forms of the lexical forms deviates from the past narrative conventions of most fictional writers (Leech, 2013). The past tense forms of the lexical verbs provide a definite time reference that is separate from the present, rarely using definite time adjuncts. Contextual examples from Wmatrix reveal that most of these lexical verbs relate to movement. Similarly, Mangwanda (2019) identifies a high density of "motion verbs" (p. 73), which evidence mobility. Although Mangwanda interprets this in relation to life and death, the findings from this study align with migration.

Concerning the semantic domains, the near absence of plural pronouns suggests an underlying individualistic perspective permeating the novel's stylistic and thematic orientation. Given the post-colonial Ghanaian context, such linguistic individualism highlights the fragmentation and isolation of the broader culture. Following Emmott's (1997) work on the role of pronouns in narrative comprehension, Stockwell (2000, 2002) addresses the demonstrative function of pronouns in literature. In this regard, Armah's use of varied pronouns contributes to readers' narrative comprehension and the real or conceptual construction of a literary world (Gavins, 2007). However, the minimal use of plural subjective pronouns such as "we" creates an ideological position that supports the characterisation of Baako. Also, the pronouns influence the ideological position of the target text, *Fragments*. This conclusion is based on context and function rather than the frequency of the pronouns (Mahlberg, 2014).

In addition, the semantic tags project the themes of materialism, migration or quest for a place of being, and behavioural rot in Ghanaian society. The studies on the target text have discussed aspects of these themes. We emphasise that Armah deals overtly with the materialistic associations that have engulfed Ghanaian and most African communities. Armah thus demonstrates that Baako has difficulty building a strong relationship with Ghanaians who have become materialistic because they see been-tos as the source of luxury,

fame, and wealth. This finding supports several relevant studies on the text (Ayuk, 1984; Dadja-Tiou, 2022; Fraser, 1980; Ogbeide, 2011; Wright, 1990). Jilani (2020) characterises Armah's writing as overly framed around materialism among individuals. We, therefore, assert that materialism is so "internalised" and normalised that it persists implicitly.

On migration, the concept of cargo mentality foregrounds the success or otherwise of returnees from abroad. Such assumptions coerce the returnees to embattle several social expectations, which affect them psychologically. Hence, they contest their identity and search for a place of being that does not threaten their space (Osei-Nyame, 2020). In *Fragments*, although Baako and Brempong are both Western-educated been-tos, their narratives differentiate them as representing divergent philosophical positions within the discourse of nation-building and nationalism. Baako was uncertain about his return to Ghana because of the social expectations and behavioural rot that would affect his philosophical positions. Upon his arrival in Ghana, Baako experiences alienation, which confirms his suspicions. Hence, Baako's idealistic aspirations turn into a nightmare (Mangwanda, 2019). Brempong's exuberant nature is unperturbed because he fits perfectly within the neocolonial-minded Ghanaian society (Osei-Nyame, 2020). Materialism conditions these complex relationships of migration and behaviour.

Even though the aforementioned findings are enlightening, the study had some limitations. First, there are still some "mistakes made by the computer" (Leech, 2013, p. 25) that should be manually checked, even though POS tagging and semantic tagging are highly accurate. According to Rayson et al. (2004), the semantic tagger has an error rate of 91%. As a result, researchers should also take tagging errors into account when manually analysing the results, as we have done in this research. In addition, a computer cannot recognise metaphors

or irony, which are aspects of stylistic (literary) analysis that require a deeper understanding of meaning. Notwithstanding, our qualitative interpretation makes up for this limitation. This provides methodological rigour for the study.

As for implications, methodologically, we saw that the Wmatrix could be an efficient tool to reveal the linguistic patterns, themes, and abstract categories in literary texts. Indeed, the software gave key prominence to some features and unravelled some issues in *Fragments* which means that Wmatrix provides a greater advantage for analysing literary texts faster, which points to its adaptability for different kinds of texts. The keyness analysis based on loglikelihood, frequencies, and concordance supports the stylistic analysis. The extension of the POS tag to a more abstract level provides credence to the analysis and promises to be a fruitful area for corpus stylistics broadly. Even though some of the items highlighted are thematic and literary, they would probably have gone unnoticed without the help of Wmatrix. As such, by evaluating the loglikelihood score of the semantic domains, we determine how abnormalities (as a result of overuse or underuse) help to identify nuances of linguistic behaviour that are difficult to identify through purely qualitative analysis.

As for further research, a corpus study could be conducted to compare the key pronouns and verbs in Armah's novels through clusters and repetitive patterns. Such a study would bring Armah's interactive approach from a specific context (Ghana) to a wider society (Africa). This would contribute to the social commentary and pan-Africanist ideas provided by Armah, as reported by some scholars (such as Ayivor, 2003; Fenderson, 2008; Nkansah, 2023). Also, another study could adopt a cross-cultural approach by comparing Armah's novels with those of his contemporaries, such as Wole Soyinka, Chinua Achebe, Ngugi wa Thiong'o, and Nadine Gordimer. Such a study can report on the converging and diverging points of narration and thematisation in African novels.

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