Diachronic Variation in the Language of Pakistani English Newspapers: A Multidimensional Analysis

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Abstract

This research aims to see the evolution of Pakistani English. Therefore, it diachronically explores the linguistic variation in Pakistani English newspapers (PEN) utilizing a corpus-based multidimensional approach (MDA). Corpus for this research has been developed from the texts of four Pakistani English language newspapers published across six decades (1947-1996), and analyzed through MAT Software. The results reveal that the textual dimensions studied in PEN vary across the decades. Especially, textual Dimension 2 (D2) across 1977-1986 and 1987-1996 indicates that the discourse (used in PEN) is narrative due to the overuse of past tense, present participial clauses and public verbs, and is non-narrative across 1947-1956, 1957-1966 and 1967-1976 due to the overuse of third person pronouns, past tense and perfect aspect. Similarly, Dimension 4 (D4) across 1947-1956 highlights the language of newspapers to be interactive and less argumentative across 1957-1966, 1967-1976, 1977-1986 and 1987-1996. Due to these historical changes, the language of PEN is found to statistically less different across the decades, and close to Biber's (1988) registers. Therefore, the language of PEN is concluded to: be informationally dense, non-narrative, explicit, abstract, and less argumentative; and fall in the outer circle (due to its closeness of PEN to Biber's registers) where it is named as second language due to the linguistic variation.

Keywords: diachronic linguistic variation, Pakistani English newspapers, written register, multi-dimensional analysis, MAT software

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Introduction

Scholars of World Englishes (Platt, Weber & Ho, 1984; Pride, 1982) have empirically regarded the emergence of "New Englishes" by exploring linguistic features. Such features describe language change at micro and macro levels (Biber, 1985, 1986, 1987, 1988; Mitkov & Stajner, 2011), diachronically (Biber & Finegan, 1989; Leech & Smith, 2005), and contrastively (Biber, 1995). According to Kroch (2001), language changes over a period of time in structure, vocabulary, phonology, morphology, and syntax. To study such changes, particularly the language change in Pakistani English, different studies (Ali, Ali & Ahmad, 2018; Ali, Bashir, Ali & Aleem, 2021; Ali & Sheeraz, 2018; Khan, 2012; Latif & Chaudhary, 2016; Mahboob & Ahmar, 2004; Rasool, Ashraf & Mahmood, 2021) have been conducted. However, no research has so far been conducted to study the language of Pakistani written English registers from a diachronic perspective. This research, therefore, has been attempted to fill this gap seeking methodological insights from the said past studies.

Recent MD studies (Ali & Sheeraz, 2018; Ali & Shehzad, 2019; Latif & Chaudhary, 2016; Qasim, Shakir & Qasim, 2017; Shakir, 2013; Shakir, 2015) across written registers (in Pakistani context) have attempted to confirm Pakistani English as a variety comprising different types of registers i.e., print advertisement (Shakir, 2013), online university prospectuses (Amjad & Shakir, 2014; Bano & Shakir, 2015), gender in Pakistani print media (Alvi, Mahmood & Rasool, 2016a), fiction and non-fiction book blurbs (Qasim & Shakir, 2016; Qasim et al., 2017), online brands of Pakistani fashion blogs (Noor & Shakir, 2015), Pakistani English fiction (Ali, 2016; Ali & Ahmad, 2017), Pakistani legal language (Asghar, Mahmood & Asghar, 2018a, 2018b), Pakistani press reportage in print media (Ahmad, 2015), Pakistani English press editorials (Alvi et al., 2016b), Pakistani academic writing (Azher, Mehmood & Shah, 2018; Rashid, Mahmood & Ahmad, 2017; Azher & Mehmood, 2016a, 2016b), learners' argumentative essays (Abdulaziz, Mahmood & Azher, 2016), South Asian Englishes (Ali & Shehzad, 2019), diachronic analysis of Pakistani English newspaper editorials (Ali, 2018), diachronic linguistic variation across Pakistani English newspapers (Ali et al., 2018), diachronic grammatical changes across speeches, books, research articles, editorials (Rasool et al., 2021), and diachronic linguistic variation in letter-to-editors of Pakistani English newspapers (Ali et al., 2021). However, no serious attempt has so far been made from a diachronic perspective across PEN as a written register. Therefore, the present study aims to fill this research gap, PEN across six decades and decides to determine the variety and status of PEN through MDA.

The previous studies approached PEN synchronically and diachronically at micro and macro levels. According to the principle, multidimensional (MD) studies are not considerably valid on an individual linguistic feature because the basic parameters in conducting MD studies do not allow to have a single feature for MD analysis from synchronic and diachronic perspectives (Biber, 1988). However, an individual feature analysis is possible in other than MDA framework. At the micro level, an individual linguistic feature, under corpus-based studies, across Pakistani English has been studied so far from the synchronic perspective (Anwar, 2012; Asghar, 2013; Hussain & Mahmood, 2014; Mahmood, 2009; Talaat, 2003; Uzair, 2011), and a few corpus-based diachronic studies on any individual linguistic feature across Pakistani English have been reported such as diachronic grammatical changes studied over speeches, books, research articles, editorials (Rasool et al., 2021). At the macro level, the corpus-based MD studies (Ali & Shakir, 2016; Alvi et al., 2016a, 2016b; Amjad &

Shakir, 2014; Asghar et al., 2018a, 2018b; Azher et al., 2018; Noor & Shakir, 2015; Qasim & Shakir, 2016; Qasim et al., 2017; Shakir, 2013; Shakir, 2015) and other corpus-based non-MD studies (Siddique, Mahmood & Iqbal, 2018) across written registers focusing on a set of combined linguistic features across Pakistani English have been investigated synchronically. However, little attention is paid to study Pakistani English diachronically using MD analysis.

There is no doubt that a few MD studies (focusing on a single register of Pakistani written English from diachronic perspective) have been conducted. For example, synchronic linguistic variation of the single register using MD analysis has been conducted on the university prospectuses of Pakistan along individual dimensions' narrative vs. non-narrative concerns' (see Amjad & Shakir, 2014; Nawaz & Shakir, 2014), and sub-genres of newspaper along individual dimension 'General narrative exposition' (see Batool, 2015). In this connection, the present study finds a research gap and emphasizes to study the diachronic linguistic variation across PEN as a written register using the 1988 MDA framework. The present study claims that there is much room for diachronic studies, as earlier register-based studies (Ali & Shehzad, 2019; Ali & Shakir, 2016; Alvi et al., 2016a, 2016b; Amjad & Shakir, 2014; Asghar et al., 2018a, 2018b; Azher et al., 2018; Noor & Shakir, 2015; Qasim & Shakir, 2016; Qasim et al., 2017; Shakir, 2013; Shakir, 2015; Shakir & Deuber, 2018) have focused only on synchronic variation, and have contributed exceptionally well in the recognition of Pakistani English as an indigenous variety. The present study, therefore, reaches aims to investigate linguistic variation from a diachronic perspective across PEN using a corpus-based 1988 MDA framework.

In light of aforementioned studies, it is inferred that Pakistani English is distinguished as a variety from other established varieties (e.g. British and American English) on the basis of linguistic choices that the Pakistani speakers and writers make effectively in their speaking and writing for communication. Moreover, the aforementioned studies report that Pakistani written sub-registers have been distinguished from each other across the decades on the basis of similar or dissimilar linguistic choices in co-occurring linguistic patterns. So, this way is, in a sense, worthy of confirming new registers through exploring co-occurring linguistic choices. Studying registers linguistically is an approach to describing their linguistic features. This study has been conducted for many reasons i.e.: Pakistani English is a non-native variety that is newly emerged and is confirmed through past studies which explored individual and composite linguistic features across Pakistani written registers. The prior studies have tried to describe Pakistani English as a legitimized variety via individual (microscopic studies) and combined (macroscopic studies) linguistic features. Such studies have investigated written and spoken registers through co-occurring linguistic features to account for the linguistic description of Pakistani English as a variety in each particular period. However, these studies are silent yet on how Pakistani English as a variety across written registers has developed/evolved over time.

The purpose of the present study is to investigate the linguistic development of PEN through the 1988 MDA framework. Reasons behind choosing 1988 MDA framework are that it contains 67 linguistic features, is efficient for comparison purposes, and includes factor analysis which describes each data set in an intrinsic way. In short, the purpose of the present study is to know how PEN (as a written register) has developed over a period of time using 1988 MDA framework. In this regard, following research question has been raised.

- How far does the diachronic linguistic variation exist in PEN across the decades as compared to the variation in Biber's (1988) registers?

Methodology

Development of the Corpus

The corpus of this research was developed from large sets of data obtained from four Pakistani newspapers (listed below) published from 1947-1996. The major part of the data was retrieved from the online sources of the newspapers (see the links provided against the newspaper name below). However, a minor part of the data was obtained from print versions of the newspapers (available in different libraries at Faisalabad and Lahore, Pakistan) in 671 files.

The data, retrieved from online sources, was saved directly in Notepad files however the printed data went through a number of steps. Initially, it was obtained in picture/scanned forms. The scanned forms were further processed in OCR software to convert into notepad files. It (notepad form of data) formed the corpus of this research. Volume of the corpus is detailed in Table 1.

- Dawn News (link)
- The News (link)
- The Frontier Post (link)
- The Express Tribune (link)

Table 1
Corpus Length and Distribution

Decades	No. of Words	Contribution %
1947 to 1956	602128	32.92
1957 to 1966	420182	22.97
1967 to 1976	74906	4.09
1977 to 1986	159971	8.75
1987 to 1996	572097	31.27
Total no. of words	1829284	100

Source: Authors

Multidimensional Analysis Tagger

The Multidimensional Analysis Tagger (MAT) is a computer program that replicates Biber's (1988) tagger for the MD analyses of English texts. It is generally applied to study text type or register variation. It provides grammatical features to the corpus, text types, or registers for analysis. Furthermore, it is based on Biber's (1988) Dimensions, and it determines its closest text types as proposed by Biber (1989). It was used (in this research) for analyses (see Section 3.3).

Procedure of Corpus Analysis

Corpus analysis completed in a procedural process. It (corpus) was, first of all, tagged through Nini's (2014) MAT tagger to study 67 linguistic features suggested in Biber's (1988) five textual dimensions. This procedure provided raw frequencies of different features. The said frequencies were then normalized/100 words (using Formula 1) to minimize the

possibility of "a comparison of non-normalized counts will give an inaccurate assessment of the frequency distribution in texts" (Biber, 1988, p. 75).

Formula 1. Calculation of Normalized Values

$$\textbf{Normalization} = \frac{\text{Raw frequencies}}{\text{Total number of words}} \times 100$$

Normalization procedure was followed by the calculation of Z-scores (using Formula 2) of each linguistic feature to find the co-occurrence to see whether its signs are negative or positive.

Formula 2. Calculation of Z-scores

$$\textbf{Z-scores} = \frac{\text{Raw frequency} - \text{Mean (P)}}{\text{Standard Deviation (P)}}$$

Finally, dimension scores of each PEN text were computed (using Formula 3) through the subtraction of standardized scores of negative features from the sum of standardized scores of positive features.

Formula 3. Calculation of Dimension Scores

Dimension Scores = Standardized Positive feature Score – Standardized Positive feature Score

Results

This research aimed to see how far does the diachronic linguistic variation exist in PEN across the decades as compared to the variation in Biber's (1988) registers? The results presented in Table 1 (that show the average use of linguistic features in the language of PEN emphasizing maximum and minimum values to highlight presence and absence features, range of differences among the features, and standard deviations of the features) apprise how significantly far the differences among linguistic features exist with respect to their use.

Table 2

Distribution of Linguistic Features across Pakistani English Newspapers

Linguistic Features	Mean	Max Value	Min Value	Range	S.D.
Average word length	4.82	5.03	4.68	0.35	0.09
Type-token ratio	225.25	273	183.86	89.14	21.33
Amplifiers	0.15	0.28	0.07	0.21	0.05
Independent clause coordination	0.28	0.45	0	0.45	0.11
Be as the main verb	1.21	1.8	0.7	1.1	0.31
By-passives	0.17	0.22	0.07	0.15	0.04
Causative adverbial subordinators	0.07	0.14	0	0.14	0.04
Concessive adverbial subordinators	0.05	0.11	0	0.11	0.03
Conditional adverbial subordinators	0.18	0.34	0.1	0.24	0.08
Conjuncts	0.21	0.36	0.11	0.25	0.07
Contractions	0.05	0.28	0	0.28	0.08
Demonstratives	0.69	1.04	0.42	0.62	0.16
Demonstrative pronouns	0.25	0.37	0.12	0.25	0.07
Discourse particles	0.02	0.04	0	0.04	0.01
Downtoners	0.2	0.3	0.14	0.16	0.05

Emphatics	0.33	0.73	0.21	0.52	0.12
Existential there	0.16	0.23	0.09	0.14	0.04
First-person pronouns	1.12	3.14	0.44	2.7	0.68
Gerunds	0.51	0.77	0.18	0.59	0.16
Hedges	0.01	0.02	0	0.02	0.01
Indefinite pronouns	0.04	0.14	0.01	0.13	0.03
Attributive adjectives	6.26	7.63	4.87	2.76	0.81
Necessity modals	0.24	0.39	0.13	0.26	0.07
Total other nouns	31.08	40.09	24.83	15.26	3.93
Nominalizations	3.37	4.26	2.78	1.49	0.4
Other adverbial subordinators	0.13	0.22	0	0.22	0.05
Agentless passives	1.18	1.57	0.53	1.05	0.22
Past participial clauses	0.07	0.14	0	0.14	0.03
Perfect aspect	0.85	1.23	0.53	0.7	0.17
Ph coordination	1.01	1.44	0.79	0.65	0.15
Total prepositional phrases	11.77	13.83	9.26	4.57	0.88
Pied-piping relative clauses	0.08	0.15	0	0.15	0.03
Pronoun it	0.91	2	0.6	1.4	0.33
Place adverbials	0.24	0.4	0.16	0.24	0.06
Possibility modals	0.46	0.76	0.2	0.57	0.15
Predicative adjectives	0.47	0.73	0.27	0.46	0.12
Present participial clauses	0.13	0.26	0	0.26	0.06
Private verbs	0.91	1.37	0.76	0.61	0.14
Predictive modals	0.72	1.21	0.39	0.82	0.19
Pro-verb *do*	0.08	0.19	0.03	0.16	0.04
Public verbs	0.91	1.47	0.45	1.02	0.3
Total adverbs	2.22	3.02	1.5	1.52	0.45
Sentence relatives	0.07	0.11	0.01	0.1	0.02
Seem|appear	0.06	0.1	0.04	0.06	0.02
Split auxiliaries	0.39	0.57	0.29	0.28	0.08
Split infinitives	0.01	0.02	0	0.02	0.01
Second person pronouns	0.2	0.96	0	0.96	0.25
Stranded preposition	0.08	0.14	0.05	0.09	0.02
Suasive verbs	0.4	0.55	0.28	0.27	0.08
Synthetic negation	0.19	0.31	0.05	0.26	0.07
That adjective complements	0.05	0.1	0.01	0.09	0.02
Subordinator that deletion	0.17	0.34	0.05	0.29	0.08
That verb complements	0.34	0.54	0.13	0.41	0.11
Time adverbials	0.43	0.68	0.25	0.43	0.1
Infinitives	1.54	2.05	1.15	0.9	0.23
That relative clauses on object position	0.17	0.26	0.12	0.14	0.03
Third person pronoun	1.86	2.39	1.33	1.06	0.35
That relative clauses on subject position	0.06	0.14	0	0.14	0.03
Past tense	3.31	4.67	1.8	2.87	0.81
Present tense	3.56	5.54	2.04	3.5	0.81
WH-clauses	0.03	0.09	0	0.09	0.02
WH relative clauses on object position	0.05	0.13	0.01	0.12	0.03
Direct WH-questions	0.02	0.07	0	0.07	0.02
WH relative clauses on subject position	0.22	0.36	0.14	0.22	0.05
Past participial WHIZ deletion relatives	0.2	0.42	0	0.42	0.08
Present participial WHIZ deletion relatives	0.3	0.44	0.18	0.26	0.06
Analytic negation	0.51	0.73	0.32	0.41	0.13

Source: Authors

The results (Table 3 and Graph 1) of MD analysis exhibited five dimensions across PEN corpus over the period of time.

Table 3

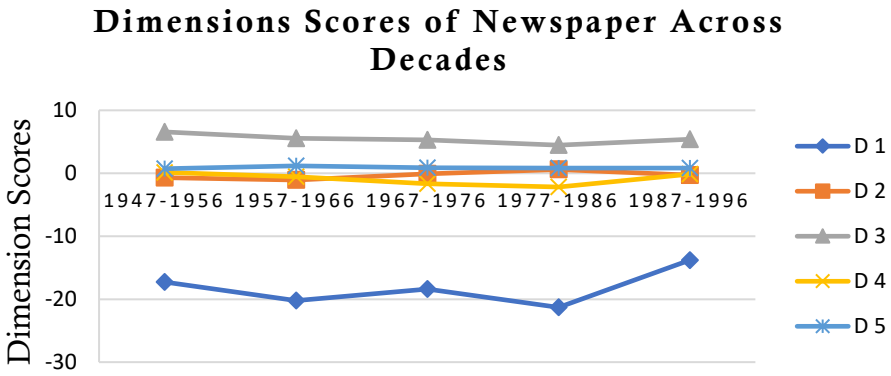
Decade-wise Dimensions Scores of Newspapers

Decades	Register	D 1	D 2	D 3	D 4	D 5
1947-1956	Newspaper	-17.26	-0.71	6.57	0.14	0.73
1957-1966		-20.20	-1.07	5.58	-0.54	1.18
1967-1976		-18.39	-0.07	5.32	-1.65	0.89
1977-1986		-21.30	0.60	4.47	-2.18	0.85
1987-1996		-13.80	-0.30	5.40	-0.16	0.85

Source: Authors

Graph 1

Visual Representation of Decade-wise Dimensions Scores of Newspapers

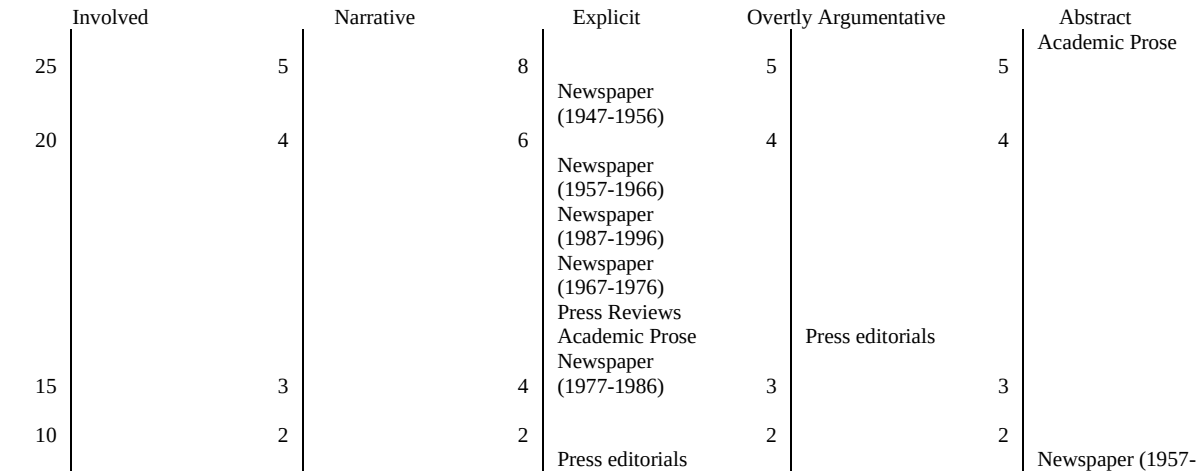


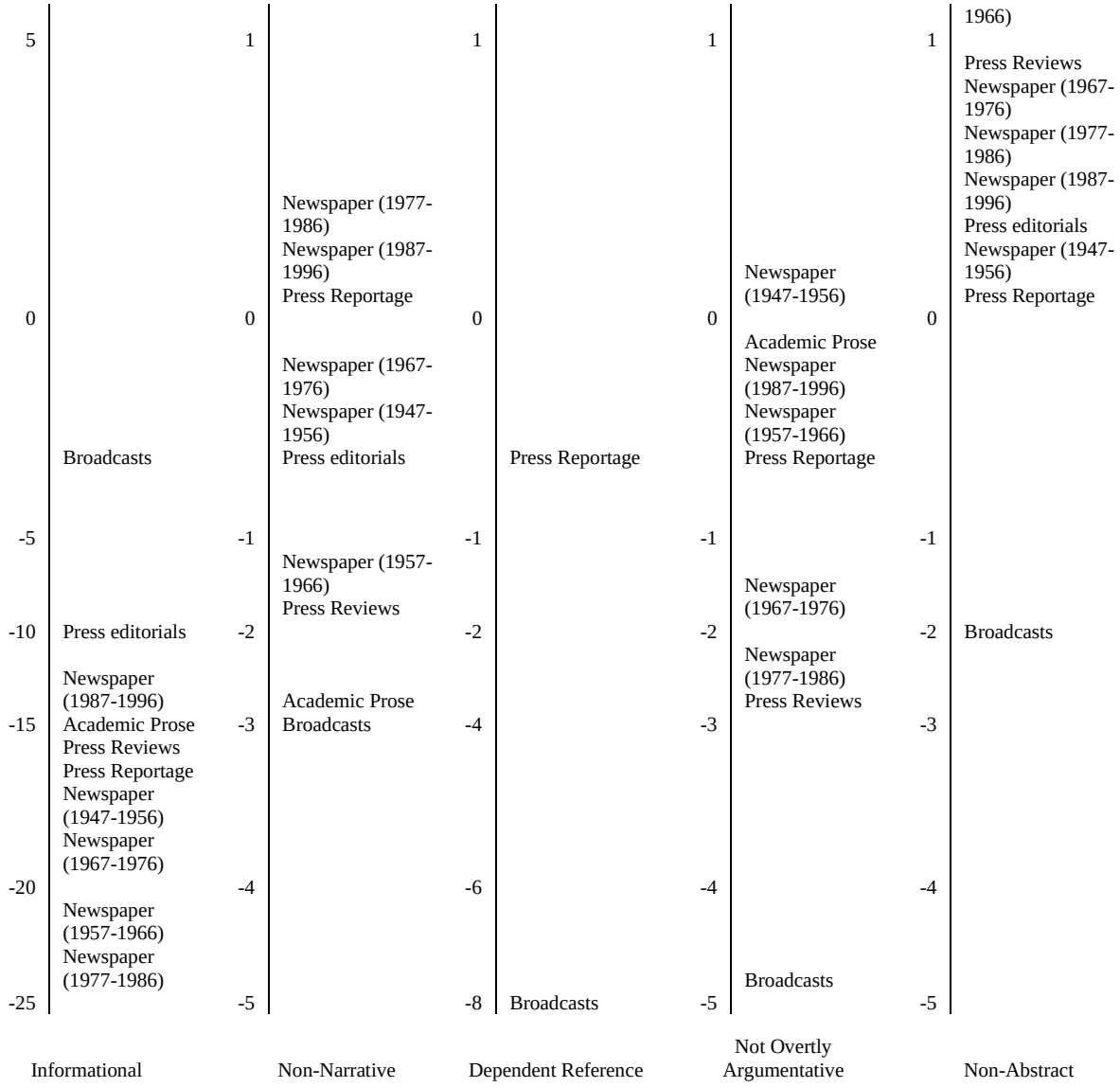
Source: Authors

The average of dimensional scores compared diachronically across the registers studied by Biber (1988). The classification of decades across the other registers has been visualized in Table 4.

Table 4

Visual Representation of Dimension Scores across Five Genres Studied by Biber (1988)





Source: Authors

For interpreting the comparison of PEN across other registers, the decades 1947-1956, 1957-1966, 1967-1976, 1977-1986 and 1987-1996 have been categorized as informational on D1 due to the large number of negative loadings of co-occurring linguistic features and are similar to Biber's (1988) registers: press editorials, academic prose, press reportage, and press reviews; the decades 1977-1986 and 1987-1996 are close to narrative due to the presence of positive of co-occurring linguistic features on D2, and similar to press reportage studied by Biber (1988) as well as the decades across 1947-1956, 1957-1966 and 1967-1976 are non-narrative due to the presence of negative co-occurring linguistic features on D2, and the decades: 1947-1956 and 1967-1976 are similar to press editorials and 1957-1966 is similar to press reviews; all the decades are explicit due to the presence of positive loadings of linguistic features on D3 and similar to press reviews and academic prose (Biber, 1988); the decade 1947-156 is persuasive due to the loading of positive co-occurring linguistic features and the other decades 1957-1966, 1967-1976, 1977-1986 and 1987-1996 are less argumentative due to the presence of negative loadings of co-occurring linguistic features on D4, and the decades: 1957-1966; 1987-1996 are similar to academic prose and press reportage, while 1947-1956 is similar to academic prose and 1967-1976 and 1977-1986 are similar to press reviews on D4; all the decades have abstract nature of text due to the

presence of positive loading of co-occurring linguistic features on D5 and they are similar to press reviews, press editorials and press reportage (Biber, 1988); finally, these interpretations are based on comparison of PEN across 5 registers studied by Biber (1988). To interpret the dimensions, the upcoming section deals in the co-occurring linguistic features which constitute the development of textual dimensions at functional level.

Discussion

Interpretation of D1: Informational VS Involved Production

In Biber (1988), D1 distinguishes between involved and informational production. Describing D1 of newspapers across the decades, the pattern of use of co-occurring linguistic variables has been observed to be linear across the decades which indicate that there are extremely large numbers of linguistic features with large negative weights, and these features can be described as performing various functions. Therefore, these features are the characteristics of written rather than spoken language. Due to these characteristics, D1 with a large number of negative weights is realized as informational rather than involved (Figure 1). Therefore, Biber (1988) reports that press editorials, press reviews, and press reportage are informationally dense on D1 due to the overuse of the total other nouns, phrasal coordination, sentence relatives, split infinitives, past participle clauses, and token type ratio.

Written language comprises the underused linguistic features with negative weights higher than 0.20 studied mutually across the decades such as infinitives, total adverbs, be as main verb, average word length, demonstratives, total prepositional phrases, attributive adjectives, and split auxiliaries. On the contrary, the language of newspapers is realized as informationally dense due to the overused linguistic features with positive weights having more than 0.20 score as the cut-value. The overused linguistic features in the language of newspapers across the decades with positive weights are total other nouns, phrasal coordination, sentence relatives, split infinitives, past participle clauses, and total token-ratio. In brief, the language of newspapers on D1 is more informational than involved across the decades (1947-1956, 1957-1966, 1967-1976, 1977-186, and 1987-1996). It is inferred that the language of PEN across decades is informational and expository which means that it is formal and focused to convey the information.

Interpretation of D2: Narrative Vs Non-Narrative Concerns

According to Biber (1988), D2 differentiates between narrative and non-narrative concerns. In order to describe D2 in this research, the language of newspapers is shown in Table 4, which indicates its placement between narrative and non-narrative concerns. The pattern of use of co-occurring linguistic variables has been observed as dynamic across the decades. For example: the decades (1947-1956, 1957-1966, and 1967-1976) contain non-narrative nature of newspaper language; and the decades (1977-1986 and 1987-1996) contain narrative concerns in newspaper language. This drift of change from non-narrative to narrative happens after the war period (1971) when the East Pakistan was separated from the West Pakistan. This event inserts the change in the language of newspapers from press reviews to press reportage (see Table 4). The first three decades (due to having non-narrative concerns) are related to press editorials and press reviews as studied by Biber (1988), while the remaining decades (due to having narrative concerns) are related to press reviews (as shown in Table 4). There are co-occurring linguistic variables with positive and negative weights which determine whether the language of newspapers contains narrative or non-narrative concerns. On the positive side, synthetic negation is only found in the decade 1947-

1956; no positive feature is found less in weights on decade 1957-1966; present participial clauses and public verbs are found less in weights on decade 1967-1976; past tense, present participial clauses, and public verbs are found large in numbers in weights on decade 1977-1986; perfect tense and present participial clauses are found large in numbers on decade 1987-1996. Therefore, seeing the presence of positive features are insignificant across 1947-1956, 1957-1966, and 1967-1976, and hence classified under non-narrative concerns, while the remaining decades 1977-1986 and 1987-1996 contain the significant presence of the weights of positive features which change the language of newspapers to be narrative.

On the negative side, third person pronoun, past tense and perfect aspect are found on D2 across the decades 1947-1956 and 1957-1966 which induce non-narrative concerns i.e.: no significant feature is found across 1967-1976; synthetic negation and third person pronoun are found across 1977-1986 which highlight narrative concerns; synthetic negation, past tense and public verbs are found across 19887-1996, which also give a narrative picture of the text type. Thus, the language of newspapers on D2 has non-narrative concerns across the decades (1947-1956, 1957-1966, and 1967-1976), though has narrative concerns across 1977-1986 and 1987-1996. Finally, the language shifts from non-narrative to narrative due to the co-occurring linguistic variables mentioned above.

Interpretation of D3: Explicit VS Dependent Reference

As shown in Biber (1988), D3 differentiates between explicit and dependent references. To describe D3 in this research, the language of newspapers is shown in Table 4, which indicates the text as having explicit nature across the decades. Pattern of the use of co-occurring linguistic variables has been observed as almost linear across the decades, like, the decades 1947-1956, 1957-1966, 1967-1976, 1977-1986, and 1987-1996 reflect the explicit nature of newspaper language on D3. Explicitness in newspapers language happens due to the presence of a larger number of positive weights than the negative weights of co-occurring linguistic features across the decades: 1947-1956, 1957-1966, 1967-1976, 1977-1986, and 1987-1996. At positive side on D3, the first decade (1947-1956) contains nominalizations, phrasal coordination, that relative clauses on subject position, pied-piping relative clauses and WH relative clauses on subject are found on positive side, on the other side, place adverbials, total adverbs, and WH relative clauses on object position are found on negative side, and the language of newspapers in such decade is little closer to press reviews (Biber, 1988, see Table 4); the decade 1957-1966 comprises more large number of negative features with less weights than less number of positive co-occurring features with large weights: nominalizations, phrasal coordination, and *that* relative clauses on subject position are found on positive side, while place adverbials, total adverbs, time adverbials, WH relative clauses on object position, concessive adverbial subordinators and predicative adjectives are found on the negative side of D3, and the language of newspapers in such decade is closer to press reviews (Biber, 1988, see Table 4); the decade 1967-1976 has large weights of positive co-occurring features than negative features: phrasal coordination, *that* relative clauses on subject position, and concessive adverbial subordinators are found on positive side, while total adverbs and WH relative clauses on object position are found on negative side of D3, and the language of newspapers in such decade is very close to press reviews (Biber, 1988, see Table 4); the decade 1977-1986 includes large weights of positive co-occurring features than negative features, however, negative features are observed more than positive features: nominalizations, phrasal coordination, place adverbials are found on positive side, while total adverbs, time adverbials, WH relative clauses on object position, predicative adjectives, and predicative adjectives are found on negative side, and the language of newspapers in such

decade is close to press reviews and press editorials (Biber, 1988, see Table 4); the decade 1987-1996 contains more positive weights of co-occurring linguistic features than negative weights but the large number of negative features are more observed than positive features: that relative clauses on subject position, pied-piping relative clauses, and WH relative clauses on subject position are found on positive side, on the contrary, nominalizations, phrasal coordination, place adverbials, total adverbs, WH relative clauses on object position, and concessive adverbial subordinators are found on negative side, and the language of newspapers in such decade is closer to press reviews and academic prose (Biber, 1988, see Table 4). Due to the positive high scores of co-occurring features across the decades, the texts are described as context-independent discourse that is more explicit for readers to understand. Therefore, it is inferred that the language of newspapers across the decades is situational independent discourse being characteristic of official documents, press reviews and academic prose. Therefore, these genres are learned expositions as text types.

Interpretation of D4: Overt Expression of Persuasion

According to Biber (1988), D4 measures the overt expression of persuasion. To describe D4 in this research, the language of newspapers is shown in Table 4, which indicates that the texts across the decade (1947-1956) has persuasive and overtly argumentative characteristics and the language of newspapers among the rest of the decades (1957-1966, 1967-1976, 1977-1986 and 1987-1996) is not persuasive and argumentative in nature. The pattern of the language of newspapers across the decades is observed dynamically between overt argumentative and covert argumentative. In the decades 1947-1956 and 1957-1966, the pattern of language shifted from persuasiveness to covert argumentativeness. The language of newspapers across the decades 1967-1976 and 1977-1986 is less persuasive and interactive whereas the language across the decade 1987-1996 varies in different years such as 1987 and 1990 years show that the language of newspapers is less persuasive but the language during the remaining years seems to be persuasive and interactive. Persuasion or overt argumentativeness is marked in the texts due to the presence of high scores of positive co-occurring linguistic features, while low scores of negative co-occurring linguistic features reflect the texts with less persuasiveness. The decade 1947-1956 contains positive features more than negative features e.g. necessity modals, predictive modals, infinitives, and suasive verbs are found on positive side. On the contrary, conditional adverbial subordinators and split auxiliaries are found on negative side of D4, and the language of this decade is closer to academic prose and press reportage (Biber, 1988, see Table 4). The decade 1957-1966 contains equal number of positive and negative features i.e. necessity modals, predictive modals, and suasive verbs are found on positive side, on the other side, conditional adverbial subordinators, infinitives and split auxiliaries are found on negative side, and the language of such decade is closer to press reportage and academic prose (Biber, 1988, Table 4). Similarly, the decade 1967-1976 contains only negative features i.e. infinitives and split auxiliaries which express that the text type is not persuasive by nature, and the language of such decade is closer to press reportage and press reviews (Biber, 1988, see Table 4). In the same way, the decade 1977-1986 contains only negative features i.e. conditional adverbial subordinators, necessity modals and split auxiliaries which describe the text type being less persuasive and not overtly argumentative, and the language of this decade is closer to press reviews (Biber, 1988, see Table 4). Likewise, the decade 1987-1996 contains negative features more than positive features i.e. only infinitives are found on positive side, on the other hand, conditional adverbial subordinators, necessity modals, split auxiliaries and suasive verbs are found on negative side which reflect that the text type is less persuasive and argumentative in nature, and the language of such decade is closer to academic prose and press reportage (Biber, 1988,

see Table 4). Therefore, the 1947-1956 decade shows that the language of newspapers is persuasive because, after the separation from India, the language of users was mostly influenced by British colonization. Later, due to a large number of negative features, the language of newspapers remains less persuasive across the decades (1957-1966, 1967-1976, 1977-1986, and 1987-1996).

Interpretation of D5: Abstract VS Non-Abstract Information

Biber (1988) distinguishes between abstract and non-abstract information on D5. For describing D5 in this research, the language of newspapers is expressed in Table 4 through dimension scores, which indicate the texts across the decades provide information in a formal and technical way like scientific discourse (Biber, 1988; Nini, 2014) e.g. academic prose, official documents, and press reviews. The pattern of newspapers language is observed to be linear across the decades (1947-1956, 1957-1966, 1967-1976, 1977-1986, and 1987-1995). Such a pattern shows that the set of co-occurring linguistic features comprises positive and negative loadings. As far as the distribution of co-occurring features is concerned, the decade 1947-1956 contains positive features more than negative features e.g. conjuncts, other adverbial subordinators, by-passives, agentless passives and past participial clauses are found on positive side of D5, while past participial WHIZ deletion relatives are found on negative side. Similarly, the decade 1957-1966 contains only positive loadings on D5 such as conjuncts, by-passives, agentless passives and past participial clauses which highlight the abstract information embedded in the text types. Therefore, on the basis of these features, such text type is classified under scientific exposition which shows formal, and technical way of conveying information.

The decade 1967-1976 comprises only positive features such as conjuncts, by-passives, agentless passives and past participial clauses which are found on positive side of D5. Similarly, the decade 1977-1986 contains only positive features such as other adverbial subordinators and past participial clauses which are found on positive side. In the same way, the decade 1987-1996 contains more positive than negative features i.e. by-passives, agentless passives and past participial WHIZ deletion relatives are found on positive side of D5, while conjuncts and other adverbial subordinators are found on negative side. However, the language of newspapers remains consistent with respect to the co-occurring linguistic variables across all the decades. For example, the decades (1947-1956, 1957-1966, 1967-1976, 1977-1986, and 1987-1996) are closer to press reportage, press editorials, and press reviews (Biber, 1988; Nini, 2014, see Table 4). Precisely, the language of newspapers across the decades (1947-1956, 1957-1966, 1967-1976, 1977-1986, and 1987-1996) comprises more positive co-occurring features which reflect the formal and technical way of communicating information. Therefore, the language of newspapers can be said to characterize the features typical to the genres like academic prose and official documents which express scientific exposition which is usually informationally dense, formal, technical and focused.

Diachronic Linguistic Differences across Decades

The second part of the comparative analysis of dimensional linguistic variation across the decades is described through mean and standard deviation scores. See Table 5.

Table 5
Mean and Standard Deviation of Dimension Scores

Periods	Techniques	D1	D2	D3	D4	D5
1947-1956	Mean	-17.26	-0.71	6.57	0.14	0.73
	SD	5.22	0.69	0.96	1.17	0.40
1957-1966	Mean	-20.20	-1.07	5.58	-0.54	1.18
	SD	3.06	0.05	0.28	0.53	0.32
1967-1976	Mean	-18.39	-0.07	5.32	-1.65	0.89
	SD	0.00	0.00	0.00	0.00	0.00
1977-1986	Mean	-21.30	0.60	4.47	-2.18	0.85
	SD	0.00	0.00	0.00	0.00	0.00
1987-1996	Mean	-13.80	-0.30	5.40	-0.16	0.85
	SD	2.42	2.59	1.53	2.93	1.87

Source: Authors

As far as a linguistic comparison against the decades is concerned, the mean and standard deviation across five dimensions of Biber (1988) indicate the statistical differences among the decades. The difference of variation is studied between the mean and standard deviation to further see how the standard deviation is statistically different from the mean. Firstly, the diachronic linguistic variation is found to be significantly more informational across decades (1947-1956, 1957-1966, 1967-1976, and 1977-1986), and less informational across decades (1987-1996) on D1. It indicates that the statistically significant differences (mean= -17.26, SD= 5.22) are found across 1947-1956. Secondly, the diachronic linguistic variation is found to be statistically significantly which shows non-narrative nature across decades (1947-1956, 1957-1966, and 1967-1976), and narrative nature across (1977-1986 and 1987-1996) on D2. Next, the diachronic linguistic variation is statistically significant which represents the context-independent texts across 1947-1956, 1957-1966, 1967-1976, 1977-1986, and 1987-1996 on D3. However, the statistical significance variation (mean=5.40, SD=1.53) is found across 1987-1996. Further, the diachronic linguistic variation is significantly persuasive across 1947-1956 but less persuasive across 1957-1966, 1967-1976, 1977-1986, and 1987-1996 on D4. Therefore, the significant differences (mean=-0.16, SD= 2.93) across 1987-1996 and less significant differences (mean=0.14, SD=1.17) across 1947-1956 are observed on D4. Thus, the diachronic linguistic variation is seen highly abstract across 1957-1976 and less abstract across 1947-1956, 1967-1976, 1977-1986, and 1987-1996. So, the development of language changes to less abstract from 1967-1976 and onward. Then, the statistically significant differences (mean=0.85, SD=1.85) are found on D5. Therefore, statistically insignificant differences are seen across all the decades.

Conclusion

The results of the dimensions scores show that the language of PEN varies due to the communicative functions across the decades on dimensions 1, 3, and 4, but it is less varied across the decades on dimensions 2, 5, and 6. The characteristics of the language of PEN are seen to be more informationally dense on D1, non-narrative on D2, more explicit on D3, abstract on D4, and less argumentative on D5. Furthermore, Biber (1988) reports that press editorials, press reviews, and press reportage are informationally dense on D1 due to the overuse of total other nouns, phrasal coordination, sentence relatives, split infinitives, past participle clauses, and token type ratio. On D2, the first three decades having non-narrative

concerns are related to press editorials and press reviews as studied by Biber (1988), while the remaining decades having narrative concerns are related to press reviews. On D3, the language of newspapers across 1947-1956 is a little closer to press reviews; the language of newspapers across 1957-1966 is closer to press reviews; the language of newspapers across 1967-1976 is very close to press reviews; the language of newspapers across 1977-1986 is close to press reviews and press editorials; the language of newspapers across 1987-1996 is closer to press reviews and academic prose. On D4, in the decades 1947-1956 and 1957-1966, the pattern of language shifts from persuasiveness to not overt argumentativeness. The language of newspapers across the decades 1967-1976 and 1977-1986 is less persuasive and interactive; the language across the decade 1987-1996 varies in different years such as 1987 and 1990 years show the language of newspapers is less persuasive but the language in the remaining years seems to be persuasive and interactive. On D5, the language of newspapers remains consistent with respect to the co-occurring linguistic variables across all the decades. For example, the decades 1947-1956, 1957-1966, 1967-1976, 1977-1986, and 1987-1996 are closer to press reportage, press editorials, and press reviews (Biber, 1988; Nini, 2014, see figure 1).

On the basis of these results, the PEN (through MD analysis) has been confirmed to be closer to the registers already studied by Biber (1988) with a little difference due to the distinguishing communicative function across the decades in comparison with other registers. These results lead to decide the place of Pakistani English as a second language according to Jenkins (2003). Thus, PEN is placed in the outer circle where it is classified under the second language based on proficiency level.

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