Noun Phrase Types and Their Distribution in Francis Bacon’s *Essays*

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0. Introduction---‘aphoristic’ style and density of noun phrases

The prose style of Francis Bacon’s *The Essayes or Counsels, Civill and Morall* (hereafter referred to as *Essays*), has been judged as ‘aphoristic’ (Stephens 1975: 103), ‘sententious’ (Legouis, É. and Cazamian, L. 1951: 370), or ‘gnomic’ (Ward, A. W. and Waller, A. R. eds. 1970. Vol. IV: 348).

The question of Bacon’s style has been studied from various aspects. Vickers (1968) made a rhetorical study of Bacon’s prose works in *Francis Bacon and Renaissance Prose*. Stephens (1975) has studied Bacon’s methods of transmitting knowledge in *Francis Bacon and the Style of Science*. My interest is in finding grammatical causes which make Bacon’s aphoristic style. In this paper, I shall assume that noun phrases contribute to make up the style. More specifically, I shall examine what kind of noun phrases are used and how they behave in a clause in *Essays* and consider the stylistic effect. The ‘clause’ here does not include a smaller unit such as ‘who you introduced me to’ in ‘I like the girl who you introduced me to’ (Matthews, 2007: s.v. ‘clause’), but a larger unit which may include an embedded clause/s such as ‘I like the girl who you introduced me to’.

The following sentences from *Essays* are included in *The Oxford Dictionary of Quotations* (Partington, A. ed.1992: s.v. ‘Francis Bacon’):

There is no excellent beauty that hath not some strangeness in the proportion. (‘Of Beauty’)

Riches are for spending. (‘Of Expense’)

A crowd is not company, and faces are but a gallery of pictures, and talk but a tinkling
cymbal, where there is not love. (‘Of Friendship’)

It is a strange desire to seek power and to lose liberty. (‘Of Great Place’)

He that hath wife and children hath given hostages to fortune; for they are impediments to great enterprises, either of virtue or mischief. (‘Of Marriage and the Single Life’)

Studies serve for delight, for ornament, and for ability. (‘Of Studies’)

The dictionary is not a dictionary of aphorisms but these examples sound like aphorisms in the sense of ‘Any principle or precept expressed in few words: a short pithy sentence containing a truth of general import: a maxim (Oxford English Dictionary: s.v. ‘aphorism’). In the sentences ‘Riches are for spending’ and ‘Studies serve for delight, for ornament, and for ability’ we notice the density of nouns. If we remove nouns from the second sentence, there remain ‘serve’, ‘and’ and three ‘for’s. These remaining words are serving rather as grammatical elements than as semantical elements, that is, nouns are undertaking much of the semantic role in the clause.

Before I start the analysis of noun phrase distribution, I need to summarize the grammatical problems of noun phrases.

1. Structure of noun phrases

Quirk, et al. (1985: 1238-39) analyzes the structure of an English noun phrase (hereafter shortened to ‘NP’) into the following four parts (A-D).

(A) The head

The tall girl standing in the corner is my sister.

(B) The determinative, which includes

(a) predeterminer: all the furniture
(b) central determiner: all those fine musicians
(c) postdeterminer: the few survivors

(C) The premodification, which comprises all the items placed before the head other than determinatives, notably adjectives (or, rather, adjective phrases) and nouns:

some very expensive office furniture

(D) The Post-modification:

prepositional phrase: the car outside the station

nonfinite clause: the car standing outside the station
relative clause: the car *that stood outside the station*
complementation: a bigger car *than that*

2. Grammatical functions of noun phrases

In a clause, ‘The noun phrase typically functions as subject, object, and complement of clauses and as complement of prepositional phrases (Quirk et al. 1985: 245).’ We can think of the following clauses, which are my own examples. Italics indicate a NP:

As subject: *The blonde girl* is my classmate.
As object: Yesterday I saw *the blonde girl* in the supermarket.
As complement of a clause: One of the dancers was *the blonde girl*. / I consider him *an honest man*.
As complement of a prepositional phrase: We were talking about *the blonde girl*.

3. Aarts’ study of NP distribution in Present-day English

As I have borrowed both Aarts’ method and data (Aarts, 1971) for the present study, I will first summarize his method. In his paper ‘On the Distribution of Noun-phrase Types in English Clause-structure’, he tries to prove his hypothesis of ‘non-randomness in the distribution of noun-phrase types in English clause-structure’ (id.: 281), that is, ‘a correlation between subject-exponents and structural ‘lightness’ on the one hand and a very strong tendency for non-subject-exponents to be realized by structurally ‘heavy’ noun-phrase types on the other (id.: 281)’. His investigation is based on an examination of a corpus of about 72,000 words from the four categories of Present-day English: (1) light fiction, (2) scientific writing, (3) informal speech, and (4) formal spoken and written English.

3. 1. Aarts’ NP analysis

Aarts’ NP analysis begins with the structural analysis of NPs. He divides NPs into two major items: ‘light’ and ‘heavy’ items (id.: 281)¹. They are eventually subdivided into the following five sub-types ‘a-e’ according to the components of the noun phrase (id.: 289):

‘Light’ items:

 Type a  Pronouns/ names
 Type b  ±Determiner + head

‘Heavy’ items:
Type c  Nouns pre-modified by 1 adjective
Type d  Nouns post-modified by 1 prepositional phrase
Type e  Nouns otherwise pre- or post-modified

Aarts separates the grammatical functions into two: ‘As subjects’ and ‘As complements or in adjuncts’. The result of his analysis is Aarts’ Table 9 (id.: 289). It is a list of NP distribution of the whole corpus. The number of noun phrases according to the function in clause and noun phrase types is listed:

<table>
<thead>
<tr>
<th></th>
<th>‘Light’</th>
<th>‘Heavy’</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>8014</td>
<td>5821</td>
<td>16961</td>
</tr>
<tr>
<td>b</td>
<td>3488</td>
<td>928</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>1494</td>
<td>283</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>1732</td>
<td>410</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>2233</td>
<td>456</td>
<td></td>
</tr>
</tbody>
</table>

Aarts makes another table, Aarts’ Table 12 (id.: 291). It shows the NP distribution of each category. (I have changed his functional word ‘As subjects’ to ‘S’ and ‘Other functions’, to ‘non-S’; hereafter the same):

<table>
<thead>
<tr>
<th></th>
<th>‘Light’</th>
<th>‘Heavy’</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>2193</td>
<td>2560</td>
<td>9063</td>
</tr>
<tr>
<td>b</td>
<td>1211</td>
<td>1322</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>1777</td>
<td>1777</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>9063</td>
<td>9063</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>16961</td>
<td>16961</td>
<td></td>
</tr>
</tbody>
</table>
From these two tables, Aarts finally proves the validity of his hypothesis.

4. NP distribution in *Essays*

4.1. Corpus of *Essays*

The investigation of the NP distribution in *Essays* is based on an examination of a corpus of 11,934 words from *Essays*. The following table shows the 13 essays picked up from 58 essays. Bacon published *Essays* three times: the first edition in 1597, the second in 1612 and the third in 1625, revising each time the former essays and adding new ones. The 13 essays of my corpus have been chosen so that they may represent the three editions. Table 1 shows the total number of words and the number of NPs in each essay:

<table>
<thead>
<tr>
<th>Title</th>
<th>Number of words</th>
<th>Numbers of NPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Of Death.</td>
<td>572</td>
<td>119</td>
</tr>
<tr>
<td>9. Of Envy.</td>
<td>1645</td>
<td>350</td>
</tr>
<tr>
<td>10. Of Love.</td>
<td>623</td>
<td>137</td>
</tr>
<tr>
<td>12. Of Boldnesse.</td>
<td>604</td>
<td>135</td>
</tr>
<tr>
<td>15. Of Seditions And Troubles.</td>
<td>2255</td>
<td>413</td>
</tr>
</tbody>
</table>
4.2. Noun phrase analysis of Essays

The first step of analysis is sorting out NPs according to their grammatical structure and function in a clause. The following shows the process of the practical analysis using two passages from the essays ‘V. Of Adversitie’ and ‘XV. Of Seditious And Troubles’. NPs in subject position (as S) is marked by a straight underline ‘_____’ and those in non-subject position (as non-S) by a wave underline ‘______’. Each NP goes to one of the ‘a-e’ types (See Aarts’ Table 9 above) according to the structure and the grammatical function. Headwords are shown in bold face:

The **Vertue of Prosperitie**, is **Temperance**: The **Vertue of Adversity**, is **Fortitude**: **which** in **Morals** is the more Heroicall Vertue. **Prosperity** is the **Blessing** of the Old Testament: **Adversity** is the **Blessing** of the New: **which** carrieth the greater **Benediction**, and the **Clearer Revelation** of Gods Favour. (V. Of Adversitie. 18-19)'

As S:
- a= which/ which
- b= Prosperity/ Adversity
- c= (none)
- d= The Vertue of Prosperitie/ The Vertue of Adversity
- e= (none)

As non-S:
- a= (none)
- b= Temperance/ Fortitude/ Morals
- c= the more Heroicall Vertue/ the greater Benediction
- d= the Blessing of the Old Testament/ the Blessing of the New
- e= the Clearer Revelation of Gods Favour
Generally, the **Dividing and Breaking** of all Factions, and Combinations that are adverse to the State, and **setting** them at distance, or at least distrust amongst themselves, is not one of the worst Remedies. For it is a desperate **Case**, if **those**, that hold with the Proceeding of the State, be full of **Discord and Faction**: And **those** that are against it, be entire and united. (XV. Of Seditions And Troubles. 49)

As S:

a= it
b= (none)
c= (none)
d= (none)
e= the Dividing and Breaking of all Factions, and Combinations that are adverse to the State/ setting them at distance, or at least distrust amongst themselves/ those, that hold with the Proceeding of the State/ those that are against it

As non-S:

a= (none)
b= Discord and Faction
c= a desperate Case
d= one of the worst Remedies
e= (none)

There are sometimes ambiguous cases. In such cases the distribution has to be judged according to how simple or complicated the noun phrase in question is, because Aarts’ classification is based on the structure.

5. **Comparison of Essays and Aarts**

Table 2 lists the distribution of all the NPs, that is, the number of noun phrases and its percentage rate in each cell. It is the counterpart of Aarts’ Table 9. Of the two figures in each cell, the upper one is the number of NP, and the lower one in parentheses shows its percentage in the whole corpus. For example, the percentage of the figure 484 in column ‘a’ is calculated: $484 \div 2493 \times 100 = 19.4\%$. After Table 2, I have quoted Aarts’ Table 9 again by adding percentage rates to each cell. Now that there is a percentage rate in each cell, it becomes possible to compare the appearance rate of **Essays** and Aarts’ Present-day English (hereafter ‘Aarts’):
Table 2 (Essays' NP distribution with percentage rates)

<table>
<thead>
<tr>
<th></th>
<th>'Light'</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>673</td>
<td>874</td>
<td>291</td>
<td>251</td>
<td>404</td>
<td>2493</td>
</tr>
<tr>
<td></td>
<td>(27.0)</td>
<td>(35.0)</td>
<td>(11.7)</td>
<td>(10.1)</td>
<td>(16.2)</td>
<td>(100)</td>
</tr>
<tr>
<td>S</td>
<td>484</td>
<td>277</td>
<td>90</td>
<td>76</td>
<td>151</td>
<td>1078</td>
</tr>
<tr>
<td></td>
<td>(19.4)</td>
<td>(11.1)</td>
<td>(3.6)</td>
<td>(3.0)</td>
<td>(6.1)</td>
<td>(43.2)</td>
</tr>
<tr>
<td>non-S</td>
<td>189</td>
<td>597</td>
<td>201</td>
<td>175</td>
<td>253</td>
<td>1415</td>
</tr>
<tr>
<td></td>
<td>(7.6)</td>
<td>(23.9)</td>
<td>(8.1)</td>
<td>(7.0)</td>
<td>(10.1)</td>
<td>(56.7)</td>
</tr>
</tbody>
</table>

Aarts' Table 9 (Aarts' NP distribution with percentage rates)

<table>
<thead>
<tr>
<th></th>
<th>'Light'</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8014</td>
<td>3488</td>
<td>1494</td>
<td>1732</td>
<td>2233</td>
<td>16961</td>
</tr>
<tr>
<td></td>
<td>(47.2)</td>
<td>(20.6)</td>
<td>(8.8)</td>
<td>(10.2)</td>
<td>(13.2)</td>
<td>(100)</td>
</tr>
<tr>
<td>S</td>
<td>5821</td>
<td>928</td>
<td>283</td>
<td>410</td>
<td>456</td>
<td>7898</td>
</tr>
<tr>
<td></td>
<td>(34.3)</td>
<td>(5.5)</td>
<td>(1.7)</td>
<td>(2.4)</td>
<td>(2.7)</td>
<td>(46.6)</td>
</tr>
<tr>
<td>non-S</td>
<td>2193</td>
<td>2560</td>
<td>1211</td>
<td>1322</td>
<td>1777</td>
<td>9063</td>
</tr>
<tr>
<td></td>
<td>(12.9)</td>
<td>(15.1)</td>
<td>(7.1)</td>
<td>(7.8)</td>
<td>(10.5)</td>
<td>(53.4)</td>
</tr>
</tbody>
</table>

Table 3 compares the appearance rate in subject position, and Table 4 compares the rate in non-subject position. I have attached a graph to each table so that the comparison may visually become possible.

Table 3 (Essays and Aarts: subject NPs distribution in percentage rates)

<table>
<thead>
<tr>
<th></th>
<th>'Light'</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>Essays</td>
<td>19.4</td>
<td>11.1</td>
<td>3.6</td>
<td>3.0</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>30.5</td>
<td></td>
<td>3.6</td>
<td>3.0</td>
<td>6.1</td>
<td>43.2</td>
</tr>
<tr>
<td>Aarts</td>
<td>34.3</td>
<td>5.5</td>
<td>1.7</td>
<td>2.4</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39.8</td>
<td></td>
<td>6.8</td>
<td>2.7</td>
<td></td>
<td>46.6</td>
</tr>
</tbody>
</table>
Graph 1 (Essays and Aarts: subject NPs distribution)

Table 4 (Essays and Aarts: non-subject NPs distribution in percentage rates)

<table>
<thead>
<tr>
<th></th>
<th>'Light'</th>
<th></th>
<th>'Heavy'</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>Essays</td>
<td>7.6</td>
<td>23.9</td>
<td>8.1</td>
<td>7.0</td>
<td>10.1</td>
</tr>
<tr>
<td>Total</td>
<td>31.5</td>
<td>25.2</td>
<td>8.1</td>
<td>7.0</td>
<td>10.5</td>
</tr>
<tr>
<td>Aarts</td>
<td>12.9</td>
<td>15.1</td>
<td>7.1</td>
<td>7.8</td>
<td>10.5</td>
</tr>
<tr>
<td>Total</td>
<td>28.0</td>
<td>25.4</td>
<td>8.1</td>
<td>7.8</td>
<td>10.5</td>
</tr>
</tbody>
</table>

Graph 2 (Essays and Aarts: non-subject NPs distribution)
6. Characteristics of Essays compared with Aarts

The NP distribution in subject position (Table 3 and Graph 1) shows an interesting difference. In every item of ‘b-e’, Essays is higher than Aarts. Numerical differences between Essays and Aarts are: b (11.1 : 5.5), c (3.6 : 1.7), d (3.0 : 2.4), e (6.1 : 2.7). Items ‘b’, ‘c’, ‘e’ of Essays are more than twice those of Aarts; ‘b’ is just twice that of Aarts. The difference indicates a tendency that the subject position in Essays is more frequently occupied by nouns, since ‘b-e’ are nouns in various structures. The density of ‘b-e’ type NPs in subject position can be seen in the following examples. Underlines mark ‘b-e’ type NPs functioning as a subject; head noun are printed in bold face:

Men feare Death, as Children feare to goe in the darke: And as that Natural Feare in Children, is increased with Tales, so is the other. Certainly, the Contemplation of Death, as the wages of sinne, and Passage to another world, is Holy, and Religious: But the Feare of it, as a Tribute due unto Nature, is weake. (II. Of Death. 9)

Riches are for Spending; And Spending for Honour and good Actions. Therefore Extraordinary Expence must be limited by the Worth of the Occasion: For Voluntary Undoing, may be aswell for a Mans Country, as for the Kingdome of Heaven. But Ordinary Expence ought to be limited by a Mans Estate: And governed with such regard, as it be within his Compass: And not subject to Deceit and Abuse of Servants: And ordered to the best Shew, that the Bills may be lesse, then the Estimation abroad. (XXVIII. Of Expence. 87)
What about non-subject NPs? Graph 2 shows that in type ‘a’ (Pronouns/ names) Aarts is higher than Essays in type ‘b’ Essays is much higher than Aarts, and in types ‘c-e’, Essays and Aarts are alike. The conspicuous distinction is type ‘b’: Essays’ bar is much taller than any items including Aarts. Essays’ percentage of type ‘b’ (23.9%) means that almost one in four NPs in non-subject position has the structure of type ‘b’ (± Determiner + head), the simplest structure of all noun types. The following examples show the density of type ‘b’ NPs in non-subject positions. Type ‘b’ NPs are underlined with the head in bold face:

The greatest Trust, betweene Man and Man, is the Trust of Giving Counsell. For in other Confidences, Men commit the parts of life: Their Lands, their Goods, Their Children, their Credit, some particular Affaire: But to such, as they make their Counsellours, they commit the whole: By how much the more, they are obliged to all Faith and integrity. (XX. Of Counsell. 63)

Suspicions amongst Thoughts, are like Bats amongst Birds, they ever fly by Twilight. Certainly, they are to be repressed, or, at the least, well guarded: For they cloud the Minde: they leese Frends: and they checke with Businesse, whereby Businesse cannot goe on, currantly, and constantly. They dispose Kings to Tyranny, Husbands to Jealousie, Wise Men to Irresolution and Melancholy. (XXXI. Of Suspicion. 102)

The Winning of Honour, is but the Revealing of a Mans Vertue and Worth, without Disadvantage. For some in their Actions, doe Wooe and affect Honour and Reputation: Which Sort of Men, are commonly much Talked of, but inwardly little Admired. And some, contrariwise, darken their Vertue, in the Shew of it: So as they be under-valued in opinion. (l.V. Of Honour and Reputation. 163)

7. Comparison with Aarts’ four categories

Aarts’ Table 12 is the NP distribution of his four text-groups: Light fiction, Scientific writing, Informal speech, and Formal spoken and written English. If we add Essays to the table, we have Table 5 which compares five categories. This will allow us to see how Essays is similar or dissimilar to the categories of Present-day English. Tables 5 and 6 show the percentages of the five categories: Table 5 for subject NPs, and Table 6 for non-subject NPs. Each table accompanies the corresponding graph.
Table 5 (Five categories: subject NP distribution in percentage rates)

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S</strong> Light fiction</td>
<td>37.1</td>
<td>5.3</td>
<td>1.1</td>
<td>1.1</td>
<td>1.8</td>
<td>46.4</td>
</tr>
<tr>
<td>Scientific writing</td>
<td>15.6</td>
<td>8.9</td>
<td>3.5</td>
<td>5.7</td>
<td>6.0</td>
<td>39.7</td>
</tr>
<tr>
<td>Informal speech</td>
<td>46.3</td>
<td>2.9</td>
<td>0.9</td>
<td>1.2</td>
<td>1.5</td>
<td>52.8</td>
</tr>
<tr>
<td>Formal spoken and written English</td>
<td>32.1</td>
<td>5.8</td>
<td>1.8</td>
<td>2.9</td>
<td>2.8</td>
<td>45.4</td>
</tr>
<tr>
<td>Essays</td>
<td>19.4</td>
<td>11.1</td>
<td>3.6</td>
<td>3.0</td>
<td>6.1</td>
<td>43.2</td>
</tr>
</tbody>
</table>

Graph 3 (Five categories: subject NP distribution)

![Graph showing distribution of subject NPs across different categories]

Table 6 (Five categories: non-subject NP distribution in percentage rates)

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong> Light fiction</td>
<td>14.4</td>
<td>17.7</td>
<td>6.9</td>
<td>6.2</td>
<td>8.3</td>
<td>53.5</td>
</tr>
<tr>
<td><strong>o</strong> Scientific writing</td>
<td>5.6</td>
<td>15.9</td>
<td>9.8</td>
<td>11.1</td>
<td>17.8</td>
<td>60.2</td>
</tr>
<tr>
<td><strong>n</strong> Informal speech</td>
<td>16.1</td>
<td>11.7</td>
<td>5.9</td>
<td>5.6</td>
<td>7.8</td>
<td>47.1</td>
</tr>
<tr>
<td></td>
<td>Formal spoken</td>
<td>13.0</td>
<td>14.7</td>
<td>6.7</td>
<td>9.5</td>
<td>10.7</td>
</tr>
<tr>
<td>----------</td>
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</tr>
<tr>
<td></td>
<td>and written</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td></td>
<td>7.6</td>
<td>23.9</td>
<td>8.1</td>
<td>7.0</td>
<td>10.1</td>
</tr>
</tbody>
</table>

Graph 4 (Five text groups: non-Subject NP distribution)

7.1. Distributions of subject NPs & non-subject NPs

By comparing the graph bars, we perceive that distribution of subject NPs (Graph 3) can be divided into two groups: One is the group of Light fiction and Informal speech (hereafter ‘Light fiction group’), and the other is the group of Scientific writing and Essays (hereafter ‘Essays group’): Formal spoken and written English is in the middle, therefore we do not make the third group.

Graph 3 (subject NP distribution) shows that in type ‘a’ the Light fiction group is higher than the Essays group, but in types ‘b-e’ the Essays group is higher than the Light fiction group. Thus the two groups show an opposite tendency in subject position: The light fiction group prefers type ‘a’ (pronouns and names) but the Essays group prefers types ‘b-e’ (nouns of various structures). When we compare ‘b-e’ in each figure, the Essays group is far greater than the Light fiction group. Compare Light fiction with Essays as a representative of each group— ‘b’ (5.3 : 11.1); ‘c’ (1.1 : 3.6); ‘d’ (1.1 : 3.0); ‘e’ (1.8 : 6.1) — the Essays rate is almost twice (in ‘b’) or three times (in ‘c-e’) more than that of Light fiction.

Graph 4 (non-subject NP distribution) shows generally the same tendency with
Graph 3: in ‘a’ the Light fiction group is higher than the Essays group, but in ‘b’-‘e’ the Essays group is higher than the Light fiction group although the contrast is much smaller than in the case of subject NPs, and in ‘b’ ‘Light fiction’ is slightly higher than ‘Scientific writing’.

We need to pay attention to the two highest bars, which are ‘b’ of Essays and ‘e’ of Scientific writing. These two categories generally behave in similar ways in non-subject positions, but in ‘b’ and ‘e’ they seem to claim their identity: Essays prefers ‘b’ (± Determiner + head), the simplest structure of nouns, but Scientific writing prefers ‘e’ (Nouns otherwise pre- or post-modified), the most complex structure of nouns.

7.2. Descriptions of scientific writing

From the categorical comparison, we find that NPs in Essays and Scientific writing show similar behaviors in general. Does it mean that Scientific writing is aphoristic like Essays? We need to consider how they are similar and dissimilar. The following are examples of Scientific writing. The first text is an article ‘Meteor Crater’ from an encyclopaedia; the second is a mathematical explanation of ‘Right triangle’ taken from Wikipedia; and the third is a passage about ‘natural selection’ from Darwin. NPs both in subject and non-subject positions are underlined with the head (pro-)nouns in bold face. Italics in the article ‘Right triangle’ are original:

<Meteor Crater>

Discovered in 1891, its age has been variously estimated at between 5,000 and 50,000 years. Large numbers of nickel-iron fragments from gravel size to 1,400 pounds (640 kg) have been found in a 100-square-mile (260-square-kilometre) area. The distribution and composition of several thousand tons of sand-grain size nickel-iron droplets indicate that they condensed from a cloud of metallic vapours. Surveys show only fragments within the pit, but the 1960 discovery there of coesite and stishovite, which are high-pressure modifications of silica, helped to confirm the crater’s meteoritic origin. (The New Encyclopaedia Britannica, 15th ed. Volume 2, s.v. ‘Meteor Crater’)

<Right triangle>
A right triangle (American English) or right-angled triangle (British English) is a triangle in which one angle is a right angle (that is, a 90-degree angle). The relation between the sides and angles of a right triangle is the basis for trigonometry. The side opposite the right angle is called the hypotenuse (side c in the figure). The sides adjacent to the right angle are called legs (or catheti, singular: cathetus). Side a may be identified as the side adjacent to angle B and opposed to (or opposite) angle A, while side b is the side adjacent to angle A and opposed to angle B. (http://en.wikipedia.org/wiki/Right_triangle)

Natural Selection acts exclusively by the preservation and accumulation of variations, which are beneficial under the organic and inorganic conditions to which each creature is exposed at all periods of life. The ultimate result is that each creature tends to become more and more improved in relation to its conditions. (Darwin, 1975: 73)

My classification of NP types of the above three texts in total is as follows. The double slash ‘//’ shows the division between the texts, followed by the number of the functions ‘S’ and ‘non-S’:

a= they/which// which (S=3; non-S=0)
b= its age/ Surveys (S=2)
c= 5,000 and 50,000 years// Side a/ side b/ Natural Selection/ The ultimate result/ each creature (S=5; non-S= 1)
d= a cloud of metallic vapours/ fragments within the pit// the basis for trigonometry// The side opposite the right angle// The sides adjacent to the right angle// the preservation and accumulation of variations/ relation to its conditions (S=2; non-S=5)
e= Large numbers of nickel-iron fragments from gravel size to 1,400 pounds (640 kg)/ a 100-square-mile (260-square-kilometre) area?/ The distribution and composition of several thousand tons of sand-grain size nickel-iron droplets/ the 1960 discovery there
of coesite and stishovite/ high-pressure modifications of silica/ the crater’s meteoritic origin/ A right triangle (American English)/ right-angled triangle (British English)/ a triangle in which one angle is a right angle (that is, a 90-degree angle)/ The relation between the sides and angles of a right triangle/ the hypotenuse (side c in the figure)/ The sides adjacent to the right angle/ legs (or catheti, singular: cathetus)/ the side adjacent to angle B and opposed to (or opposite) angle A/ the side adjacent to angle A and opposed to angle B/ the organic and inorganic conditions to which each creature is exposed at all periods of life (S=7; non-S=9)

Total:

<table>
<thead>
<tr>
<th></th>
<th>S:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>non-S:</td>
<td>a=0</td>
<td>b=0</td>
<td>c=1</td>
<td>d=5</td>
<td>e=9</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>16</td>
</tr>
</tbody>
</table>

7.3. Differences between scientific writing and Essays

The above figures show that ‘e’ is bigger than any other types both in S and non-S distribution. This tendency almost coincides with Graphs 3 and 4. Especially in Graph 4, we marked the two highest bars: one was the Essays bar in type ‘b’ and the other was the Scientific writing bar in type ‘e’. The two categories seem to reveal the distinction with each other by the type of noun phrases: Essays by type ‘b’, Scientific writing by ‘e’. Both ‘b’ and ‘e’ are nouns, but ‘b’ has the simplest structure and ‘e’ has the most complex structure. We need to know the meaning of the contrast. Quirk et al.’s following examples and his comment about the relation between a nominalization and explicitness of a noun phrase seem to answer this problem (1289):

The reviewers criticized his play in a hostile manner. [3]
the reviewers’ hostile criticizing of his play [3a]
the reviewers’ hostile criticism of his play [3b]
the reviewers’ criticism of his play [3c]
the reviewers’ criticism [3d]
their criticism [3e]
the criticism [3f]

These noun phrases are ordered from most explicit [3a] to least explicit [3f], ...

The extreme of inexplicitness is reached with an abstract or agential noun standing on its own as a noun phrase: Criticism is always helpful.
The intelligibility gradually becomes lower as we move from [3a] to [3f]. The above quoted scientific writing abounds with complex structured noun phrases like [3a], which are type ‘e’ NPs having ‘criticizing’ as the head noun. On the other hand, Essays abounds with the simple structured noun phrases like [3e&f], which are type ‘b’ NPs. What will be the reason to prefer one to the other?

We can imagine that the author of scientific writing tries to convey the scientific truth as clearly as possible. If he wants to tell about a scientific discovery, for example, the words he chooses must be clear in order to prevent different interpretations from his own. The complex NPs like type ‘e’ will be preferred because of such necessity.

Then what might be the reason to prefer type ‘b’? Why did Bacon prefer inexplicit to explicit writing? Probably he would have used type ‘b’ for stylistic effect. Look at the following examples which have many type ‘b’ nouns. Type ‘b’ nouns both in subject and non-subject positions are in bold face:

Persons of Noble Bloud, are lesse envied, in their Rising: For it seemeth, but Right, done to their Birth. Besides, there seemeth not much added to their Fortune: And Envy is as the Sunne Beames, that beat hotter, upon a Bank or steepe rising Ground: then upon a Flat. And for the same reason, those that are advanced by degrees, are lesse envied, then those that are advanced suddainly, and per saltum. (IX. Of Envy. 29)


Studies serve for Delight, for Ornament, and for Ability. Their Chiefe Use for Delight, is in Privatenesse and Retiring: For Ornament, is in Discourse: And for Ability, is in the Judgement and Disposition of Businesse. (L. Of Studies. 152)

The density of type ‘b’ is clearly seen. The question we have to answer is what is the stylistic effect?

8. Nominalization and conversion

In Essays, many head nouns of the type ‘b’ nouns have grammatical characteristics of nominalization and conversion. The term ‘nominalization’ means ‘To convert into a noun’
(OED. s.v. ‘nominalize’). The Concise Oxford Dictionary of Linguistics gives a more detailed explanation (Matthews, 2007: s.v. ‘nominalization’):

‘Any process by which either a noun or a syntactic unit functioning as a noun phrase is derived from any other kind of unit. E.g. the nouns sadness and government are nominalizations of the adjective sad and the verb govern: …

Along with nominalizations, we see conversions as well. Quirk et al. (1985: 1558) explain the term as ‘Conversion is the derivational process whereby an item is adapted or converted to a new word class without the addition of an affix,’ and give the following examples:

They released him. (‘release’ is a verb)
They ordered his release. (‘release’ is a noun)

From the 7.3 quotations from Essays, we can make the list of nominalizations and conversions like the following. The corresponding word is in parentheses together with the parts of speech. All the nouns in the left column are nominalizations, or nouns converted from verbs or adjectives in parentheses:

- their rising (rise, v.)
- Right (right, adj.)
- their Birth (bear, v.)
- Envy (envy, v.)
- a Flat (flat, adj.)
- Force (force, v.)
- the Returne (return, v.)
- Doctrine († doctrine, v. Obs.)
- Discourse (discourse, v.)
- Custome († custom, v. Obs. or arch.)
- Studies (study, v.)
- Delight (delight, v.)
- Ornament (ornament, v.)
- Ability (able, adj.)
- Privatenesse (private, adj.)
- Retiring (retire, v.)
Discourse (discourse, v.)

The list shows the individual switch to the noun form. Bacon could have made descriptions using verbs and adjectives as we saw in [3] in 7.3. The switching means that Bacon chose noun forms rather than verb or adjective forms. The process of switching is induction, the reasoning process from the particular to the general. In the above list, nouns in the left column are inexplicit. They refer to a quality or idea rather than to a concrete object. The word ‘their rising’ does not give us a clear image. The user of this word has seen many cases of people who have risen in the social or business post. The ‘rising’ is a generalization of the many cases which people have seen or experienced. Therefore experienced people can clearly understand the situation from the NP ‘their rising’. For them the above quotations from Essays will sound deep, but those who are inexperienced may not understand.

As for nominal description, Halliday’s comments are enlightening (Halliday, 2004: 102):

I recently noticed a care label, of the type that is attached to clothing. It said: ‘Prolonged exposure will result in rapid deterioration of the item’…. I asked myself: why didn’t they say: ‘If the item is exposed for long it will rapidly deteriorate?’… Somehow the version they used carries greater value. It is more weighty: what it is telling us is not just a fact, but a solemn, proven fact, pregnant with authority and wisdom. In other words it is more scientific.

The first sentence Halliday quotes has two nominalized word: ‘exposure’ and ‘deterioration’. Halliday judges the first sentence as ‘scientific’, but the judgement has the same value as ‘aphoristic’ in the case of Essays. In the preface of the volume, the editor says that Halliday’s volume is ‘much more than a volume of papers on scientific language. It is about that most fundamental ability of human kind, the ability to theorize about ourselves and our world. It is about how we move from commonsense theories of everyday experience to technical and scientific theories of knowledge (id. vii)’. This is what I consider the process of induction. Nominalizations and conversion-nouns are the language of induction. Both Scientific writing and Essays are written in ‘nominal (nominalizing) style’ in Rulon Well’s words (1960: 214). However, their nominal styles are contrastive: Scientific writing prefers type ‘e’, while Essays prefers type ‘b’. Bacon no doubt intended to produce weighty, solemn and pregnant style.
9. Final remarks

We can conclude that the main factor of aphoristic style is in Bacon’s words of induction which are symbolically realized in type ‘b’ noun phrases. Besides type ‘b’ NPs, we notice that lots of type ‘c-e’ NPs have the head of nominalization and conversion. Furthermore, Bacon uses other devices to describe generalizations. All of them are also words of induction like follows. Type ‘c-e’ NPs are underlined with the head in bold face:

NPs having ‘c-e’ type:

Wives are young Mens Mistresses; Companions for middle Age; and old Mens Nurses.

There are no worse Instruments, then these Generall Contrivers of Sutes: For they are but a Kinde of Poyson and Infection to Publique Proceedings. (XLIX. Of Sutours. 152)

NPs of generalization:

Men in Great Place, are thrice Servants: Servants of the Soveraigne or State; Servants of Fame; and Servants of Businesse. (XI. Of Great Place. 33)

He that is only Reall, had need have Exceeding great Parts of Vertue: As the Stone had need to be Rich, that is set without Foile. (LII. Of Ceremonies and Respects. 157)

The investigation in this paper has been on noun phrase types and their distribution. It has partially explained the factor behind the aphoristic style of Essays. The study of noun phrase types interest me to investigate the clause types as another factor, because they seem to interact with each other. The study of their interaction should provide a topic for the future research.

Notes

2. In Aarts’ Table 12, I have used the letters ‘a-e’ to save space; they correspond to the ‘a-e’ in Aarts’ Table 9.
3. The reference to Essays (V. Of Adversitie. 18-19) are: from left, the title number in
Roman numerals, the title, and the page(s) in Kiernan's edition.

4 & 5. In the two NPs, ‘other’ in ‘other Confidences’ is a post-determiner, and ‘all’ in ‘all Faith and integrity’ is a pre-determiner. As Aarts probably has regarded only central determiner as a determiner, these NPs are not included in type ‘b’ but in ‘c’.

6. ‘Honour, and Reputation’ is a pair word which can be thought to express one idea, therefore I have regarded the two-word form as a single NP of type ‘b’.

7. The parentheses ‘(260-square-kilometre)’ function as ‘complements or in adjuncts’ in Aarts’ Table 9, therefore I have regarded the NPs ‘a 100-square-mile (260-square-kilometre) area’ as type ‘e’.

8. By the same reason with the above note 7, ‘the hypotenuse (side c in the figure)’ is a type ‘e’.

References


University Press.


