

# KANSAI GAIDAI UNIVERSITY

## Ways of Expressing Ordinal Numerals in the History of English : From One and Twentieth to Twenty-First

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# Ways of Expressing Ordinal Numerals in the History of English: From *one and twentieth* to *twenty-first*

Fujio Nakamura

## Abstract

In Present-day English, the number twenty-one is expressed ordinally as *twenty-first*. In the past, however, English had a different numerical system. The *OED*<sup>2</sup>, for example, refers to *one-and-twentieth* and *twenty-first* as ordinals. Surprisingly, the history of ordinal numerals seems to have escaped grammarians' attention. This is perhaps because of the scarcity of historical data. This paper attempts to elucidate the ways in which ordinal numerals from 21 to 99 have been expressed since the mid-fourteenth century.

An examination of electronic corpora utilized British and American English texts consisting respectively of 325 and 410 different documents which were written mostly during 1351-1950 and 1750-1950. Furthermore, eight more sorts of corpora were analysed. Historical variants for the spelling of ordinal numerals were included in the analysis of these corpora; for example, 15 alphabetic forms including *tuentipe*, *twentythe*, *twentith*, *twenteth* and *tuentiand* stood for *twentieth*.

Evidence shows that, in British English, the form of *twenty-first* began to multiply around 1650, and took precedence over the other morphological variants not later than 1700. Accordingly, American English has maintained the higher percentage exclusively of the form of *twenty-first* since the founding of the United States.

**Keywords:** English historical linguistics and philology, morpho-syntax, ordinal numeral, corpus linguistics

## I. Introduction

### 1.1. Target Construction

In Present-day English, as only ever stated in Quirk et al. (1985: 393) and Huddleston and Pullum (2002: 1718), the typical way of expressing the ordinal numeral is *twenty-first*. In the past, however, English had a different numerical system. As shown in (1), the *OED*<sup>2</sup> refers to *one-and-twentieth* and *twenty-first* as ordinals.

- (1) Combined with the numerals below ten (*one* to *nine*) to express the numbers between twenty and thirty; formerly (and still occasionally) *one and twenty*, *two and twenty*, etc. (rarely *twenty and one*, etc.); now commonly *twenty-one*, *twenty-two*, etc.; similarly with the ordinals from *first* to *ninth*, forming the ordinals corresponding to the above (*twenty-first*, *twenty-second*, etc.), in modern use substituted for the earlier *one-and-twentieth*, *two-and-twentieth*, etc.

(*OED*<sup>2</sup>, s.v. *twenty*, *numeral a.* and *n.*, *A. adj.*, 1b)

An overview of previous studies such as Jespersen (1940 [1970]), Araki & Ukaji (1984), Quirk, et al. (1985), Denison (1998), Biber, et al. (1999), Rissanen (1999), Huddleston & Pullum (2002), von Mengden (2010) and Hashimoto (2016) indicates that historically the morphologically conceivable patterns of the expressions of ordinal numerals in English are those as shown in (2). Furthermore, contrary to the history of cardinal numerals,<sup>1</sup> little heed has been paid to the history of ordinal numerals. Perhaps the paucity of research is because of the scarcity of historical data. Therefore, to describe and explain both the stability and change of ordinal numerals, a large-scale study needs to be undertaken.

- (2) Pattern AA *one and twentieth* / *one-and-twentieth*  
 Pattern BB *one twentieth* / *one-twentieth*  
 Pattern CC *twenty and first* / *twenty-and-first*  
 Pattern DD *twenty first* / *twenty-first*  
 Pattern EE *first and twenty* / *first-and-twenty*  
 Pattern FF *first twenty* / *first-twenty*

## 1.2. Purpose of the Present Study

Accordingly, variations of the ways in which ordinal numerals from 21 to 99 were expressed in the English of G. Chaucer, W. Shakespeare, the Authorized Version of the English Bible and Present-day English in the U.K., the U.S., Australia and India were checked as an initial investigation (Tables 1 & 2). Search words are those historical variants which are listed in the *OED*<sup>2</sup>, as in (3).

- (3) a. *twenti / tuenty / tuenti / tuent / twentie / tuentie / twentye / twantie / twinti / tuonti / toontie / twenty / ðrittih / þrihti / þrittiz / þritti / þrittie / þrytti / þriḡti / þrittȳ / þryttȳ / þritte / þrutty / thriti / thritte / thritti / thritty / þretti / þretty / threti / threiti / thretti / threty / threttie / thratty / thritti / thyrtȳ / thurty / thyrtye / thirtie / thirty / fowerti / feowerti / feouwerti / fuwerti / feuwerti / fuerti / feowrti / fourte / fourti / vourti / vourty / forti / fourty / faurty / fourthi / fourthȳ / fourtie / fourtye / fortie / forty / fifiti / fiftiz / vifti / fifti / fyfte / fyfty / fiftie / fiftye / fyvetie / fivety / fifty / sixti / zixti / sixty / sixsty / sixtye / sextie / syxty / syxti / sextih / sexdeih / sexti / sixty / cexy / sextie / sexte / saxte / saxtie / saxty / seoventi / seofenntiz / seoffenntiz / seyventi / sewintȳ / zeventȳ / sevintȳ / sevinte / ceventȳ / sentȳ / seaventȳ / seventy / eiḡteti / eyḡty / eyḡty / eightie / eighty / niḡenti / niḡneti / neneti / nineti / nynte / ninte / nente / nynete / nynty / nyntie / nynetie / ninetie / ninety*
- b. *tuentiþe / twentide / twentiþe / tuentiþe / twentythe / twentyd / tuentieth / twentieth / twenteth / twentieth / tuentende / tuentiande / tuentiand / twentiest / twentyest / þrittȳþe / þrittȳþe / þritteþe / þrittȳþe / thretyd / þrittazte / thrittyde / threttithe / threttyth / thrydythe / thryddyþ / thyrtyest / thyrth / thyrtyeth / thirtieth / thirtith / therttieth / thirtieth / féowerteoða / furteohte / fowertiðe / fowertuðe / fowertizthe / fuwertiðe / fourtiand / vourtaḡte / fourtith / fourtied / fowrtyde / forth / fourth / fourtheth / fortieth / fortyest / fiftigoða / fiftigeða / fifteogoða / fifteogaðe / fiftuða / fiftuðe / fiftugeðe / fiftithe / fiftith / fyfith / fyfith / fyftythe / fyftyth / fiftieth / zixtiḡte / sixtith / sextid / syxteth / sixteth / saxtieth / sixtieth / seventiþe / seveteþe / seventiand / seyvintiand / seventeþe / seventyth / seaventieth / seventieth / eiḡtith / eyḡteth / eightieth / nyntithe / ninteth / nineteth / ninetieth*

Table 1 suggests that the Authorized Version of the English Bible had Patterns AA and CC, but never DD, the prevailing modern form. In stark contrast, Present-day English corpora across four regional variants in Tables 1 and 2 contain only Pattern DD: British English, American English, Australian English and Indian English. As previously mentioned,

Table 1 Variations of the ways in which ordinal numerals were expressed

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
G. Chaucer ( <i>Canterbury Tales</i> )	-	-	-	-	-	-
⋮	⋮	⋮	⋮	⋮	⋮	⋮
W. Shakespeare ( <i>Err.</i> , <i>TGV</i> , <i>Shr.</i> , <i>LLL</i> , <i>MND</i> , <i>MV</i> , <i>Wiv.</i> , <i>Ado</i> , <i>AYL</i> , <i>AWW</i> , <i>TN</i> , <i>MM</i> , <i>WT</i> , <i>Tmp.</i> )	-	-	-	-	-	-
Authorized Version (Old Testament)	37	-	11	-	-	-
⋮	⋮	⋮	⋮	⋮	⋮	⋮
LOB <1961>	-	-	-	5	-	-
Brown <1961>	-	-	-	5	-	-
FLOB <1991-1992>	-	-	-	35	-	-
Frown <1991-1992>	-	-	-	15	-	-
ACE <1986>	-	-	-	2	-	-
Kolhapur <1978>	-	-	-	62	-	-

Table 2 Variations of the ways in which ordinal numerals are expressed—British National Corpus

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
BNC <1984-1994>	-	-	-	regularly	-	-

due to a paucity of research it is not understood at which stage in the history of English such a change took place. Thus, the purpose of the current paper is to elucidate the history of the ways in which ordinal numerals from 21 to 99 were expressed in British English and in American English.

### 1.3. Examined Corpora and Lexical Analysis Software

The examined corpora are listed on pp. 36-37. For Present-day English, seven electronic corpora were analysed, including the *British National Corpus*. For historical English, 325 electronically logged British English text files and 410 American English text files downloaded from the Internet, ARCHER 3.2, 114 volumes of IntelLex Past Masters, and five other electronic corpora were examined. Oxford WordSmith Tools 5.0 was utilised as lexical analysis software. Search words for collecting ordinal numerals are the same as listed in (3), where historical variants were carefully selected for the present study.

## II. Ordinal Numerals in the History of British English

### 2.1. General Chronological Trends

The frequency count in each of the corpora examined appears in Tables 3-10.

Table 3 Variations of the ways in which ordinal numerals were expressed—electronically logged British English text files

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
12c -1550	-	-	-	-	-	-
1551-1600	3	-	-	-	-	-
1601-1650	2	-	-	-	-	-
1651-1700	2	-	-	43	-	-
1701-1750	4	-	-	37	-	-
1751-1800	3	-	-	32	-	-
1801-1850	4	-	-	138	-	-
1851-1900	2	-	-	65	-	-
1901-1950	-	-	-	7	-	-

Table 4 Variations of the ways in which ordinal numerals were expressed—British English documents in ARCHER 3.2 (1600-1999)

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
1600-1649	-	-	-	-	-	-
1650-1699	1	-	-	9	-	-
1700-1749	-	-	-	1	-	-
1750-1799	-	-	-	1	-	-
1800-1849	-	-	-	1	-	-
1850-1999	-	-	-	-	-	-

Table 5 Variations of the ways in which ordinal numerals were expressed—InteLex

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
1501-1550	-	-	1	1	1	-
1551-1600	-	-	-	4	-	-
1601-1650	-	-	-	3	-	-
1651-1700	3	-	-	5	-	-
1701-1750	1	-	-	6	-	-
1751-1800	-	-	-	6	-	-
1801-1850	-	-	-	23	-	-
1851-1900	-	-	-	12	-	-
1901-1950	-	-	-	4	-	-
1951-2000	-	-	-	-	-	-

Table 6 Variations of the ways in which ordinal numerals were expressed—Helsinki-DP (c750-1710)

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
-1550	-	-	-	-	-	-
1551-1600	2	-	5	-	1	-
1601-1650	3	-	-	-	-	-
1651-1700	13	-	-	7	-	-
1701-1710	-	-	-	-	-	-

Table 7 Variations of the ways in which ordinal numerals were expressed—ICAMET

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
1386-1400	-	-	-	-	-	-
1401-1450	-	-	-	-	-	-
1451-1500	1	-	-	-	-	-
1501-1550	-	-	-	-	-	6
1551-1600	-	-	-	-	-	-
1601-1650	-	-	-	-	-	-
1651-1698	-	-	-	1	-	-

Table 8 Variations of the ways in which ordinal numerals were expressed—CEECS (1418-1680)

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
1418-1550	-	-	-	-	-	-
1551-1600	-	-	-	-	-	-
1601-1650	-	-	-	-	-	-
1651-1680	-	-	-	-	-	-

Table 9 Variations of the ways in which ordinal numerals were expressed—Lampeter (1640-1740)

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
1640-1650	-	-	-	-	-	-
1651-1700	4	-	-	3	-	-
1701-1740	-	-	-	14	-	-

Table 10 Variations of the ways in which ordinal numerals were expressed—Newdigate (1674-1692)

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
1674-1692	-	-	-	-	-	-

Table 11 is an integration of Tables 3-10. In Table 11 and its corresponding Figure 1 is indicated a chronological process in which Pattern DD (*twenty first / twenty-first*) became predominant. It is also evident that Pattern DD gradually commenced to increase around 1650, and took precedence over the other morphological variants not later than 1700. It may have been a kind of ‘psychological ease’ (Biber et al. 1999: 91), i.e. the measure of how easy it is for our brains to process information, that promoted the polarisation into Pattern DD.

Table 11 Integration of Tables 3-10

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
-1500	1	-	-	-	-	-
1501-1550	-	-	1	1	1	6
1551-1600	5	-	5	4	1	-
1601-1650	5	-	-	3	-	-
1651-1700	23	-	-	68	-	-
1701-1750	5	-	-	59	-	-
1751-1800	3	-	-	39	-	-
1801-1850	4	-	-	162	-	-
1851-1900	2	-	-	77	-	-
1901-1950	-	-	-	11	-	-
1951-2000	-	-	-	-	-	-

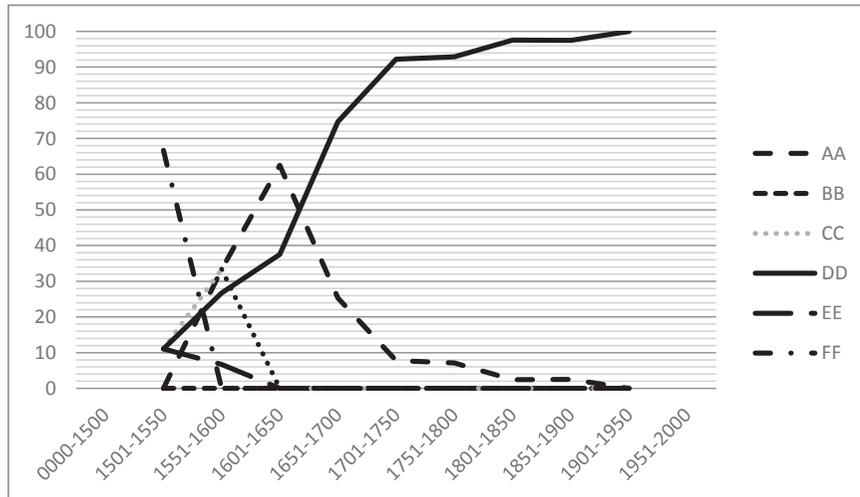


Figure 1 Figuration of Table 11

## 2.2. Non-Pattern DD Examples

Given the size of the data collection, it is not possible to cite all of the examples in the present paper. As the non-Pattern DD examples are the focus of this paper, those are shown here rather than a selection from Pattern DD examples.

### 2.2.1. Examples of Pattern AA (*one and twentieth / one-and-twentieth*)<sup>2</sup>

From Table 11 and Figure 1, it is clear that before Pattern DD became the standard form, Pattern AA was the most frequent form. Furthermore, as shown in 2.2.1. below, the nature of documents which continued to utilise Pattern AA tended to be formal, including HC-DP, CELAW3 [*The Statutes of the Realm. Printed by Command of His Majesty King George the Third in Pursuance of an Address of the House of Commons of Great Britain, Vol. VII*] and Lampeter, SCIA [An Attempt to Prove the Motion of the Earth from Observations]. Examples with Pattern AA suggest that the use of ordinal numerals focussed on ‘X and twentieth’, and that the frequency of Pattern AA decreases with increasing numbers: ‘X and twentieth’ accounts for 42 examples, ‘X and thirtieth’ 5 and ‘X and fortieth’ 1 out of 48 examples..

-1550 [1 example]

1484 ICAMET, WENEFR, saynt Wenefrede, / whiche passion and decollacion was the one and twentyest day of Juyn.

1551-1600 [5]

1580 HC-DP, CEHIST2A, The fiue and twentith day of Iuly, Isabel late wife to K. Richarde, not yet twelue yeares of age, departed from Douer towardses Caleis , and so into Fraunce to hyr Father. | 1591 Elizabeth. I, “A Proclamation ... for restitution of goods lately taken”, Given at our Palace of Westminster the nine and twentieth day of December, in the foure and thirtieth yeere of our Raigne. | 1592 H. Chettle, *Kind-Hartes Dreame*, now I heare my blinde brother that exercisde the base, is forced to lay his fiddle to pawne and trust onely to the two and thirtieth Psalme, and Job patience dor his poore belly-pinching pittaunce. | 1592-1593 HC-DP, CELAW2 (in the fower and thirtieth yere of your Majesties most happie Raigne)

1601-1650 [5]

1603-1604 HC-DP, CELAW2, by the Statute made in the nyne and thirtieth yeere of the Reigne of our late Sov<sup>~</sup>aing Ladie Queene Elizabeth for the punishment of Rogues and Vagabond<sup>~</sup> | 1611 HC-DP, CEOTEST2, And in the second moneth, on the seuen and

twentieth day of the moneth, was the earth dried. | 1612 HC-DP, CETRAV2B, The one and twentieth day, wee tooke our leaue of Captaine Hawkins, | 1633 J. Donne, *Juvenilia* (These eleuen Paradoxes, may bee printed: this fiue and twentieth of October, Anno Domini, one thousand six hundred thirty and two) | 1633 J. Donne, *Juvenilia* (These ten Problemes, may bee printed: this fiue and twentieth of October, Anno Domini, one thousand six hundred thirty and two)

1651-1700 [23]

1653 Anon., “Mercurius Politicus” in ARCHER 3.2 1653merc\_n2b, Saving to all and every person and persons, their Heirs, Executors and Administrators, Bodies Politick and Corporate, and their Successors, other then the said late King, Queen and Prince, their or any of their Heirs, Executors Administrators and Successors, and all claiming by, from or under them or any of them, since the Six and twentieth day of March , in the year of our Lord One thousand six hundred forty and one. | 1670 LAMPETER, MSCB, He appeared first upon the Theatre of the world in the two and twentieth year current of his Age; | 1672 H. Coventry, in E. Ashmole, *Diary*, Given at Our Court at Whitehall the 14th. day of August, 1672. in the foure & Twentieth year of Our Reigne. | 1673 HC-DP, CEOFFIC3 (in the Five and Twentieth year) | 1674 HC-DP, CEOFFIC3 (in the Six & Twentieth year) | 1674 LAMPETER, SCIA (by the observations of July the Sixth and Ninth: and that of the One and twentieth of October) | 1674, LAMPETER, SCIA (upon the One and twentieth of October following) | 1675 R. Vaughan, *Discourse of Coin and Coinage* (in the three and fortieth year) | 1679-1687 Conway, Letters, Appendix A (in the five and twentieth year) | 1680 LAMPETER, LAWA (in that Golden Nine and twentieth Chapter) | 1685 J. Aubrey, *Natural History of Wiltshire* (in the eight and twentieth year) | 1686 E. Ashmole, *Diary* (before the five & twentieth day) | 1695-1696 HC-DP, CELAW3 (upon the Five and twentieth Day) | 1695-1696 HC-DP, CELAW3 (upon the Five and twentieth Day) | 1695-1696 HC-DP, CELAW3 (on the Five and twentieth day) | 1695-1696 HC-DP, CELAW3 (on the said Five and twentieth Day) | 1695-1696 HC-DP, CELAW3 (upon the Five and twentieth day) | 1698 HC-DP, CELAW3 (from and After the said Eight and twentieth Day) | 1698 HC-DP, CELAW3 (from and after the said Eight and twentieth Day) | 1698 HC-DP, CELAW3 (before the Eight and twentieth day) | 1698-1699 HC-DP, CELAW3 (from and after the Five and twentieth Day) | 1698-1699 HC-DP, CELAW3 (from and after the Nine and twentieth Day) | 1698-1699 HC-DP, CELAW3 (from and after the said Five and twentieth Day)

1701-1750 [5]

1701-1711 Marlborough - Godolphin Correspondence, we do not recon to be masters of it til the two or three and twentieth of this month. | 1719 D. Defoe, *The Life and Strange Surprizing Adventures of Robinson Crusoe, of York, Mariner*, It was one of the Nights in the rainy Season in March, the four and twentieth Year of my first setting Foot in this Island of Solitariness; | 1719 D. Defoe, *Ibid.*, in the Month of May, as near as I could calculate, and in my four and twentieth Year, I had a very strange Encounter with them, | 1719 D. Defoe, *Ibid.* (on the seven and twentieth Year) | 1722 D. Defoe, *Tour through the Eastern Countries of England* (the five-and-twentieth wife)

1751-1800 [3]

1782 F. Burney, *Cecilia-1*, Cecilia, this fair traveller, had lately entered into the one-and-twentieth year of her age. | 1798 M. Edgeworth, Letters for Literary Ladies, “that she might not survive her nine-and-twentieth birth-day.” | 1798 M. Edgeworth, *Ibid.*, On the eve of her nine-and-twentieth birth-day, the lady perhaps might have felt inclined to retract her prayer.

1801-1850 [4]

1815 W. Scott, *Guy Mannering*, he was to have a weary weird [\*Cruel fate] o't till his ane-an-twentieth year, that was aye said o' him-- | 1818 J. Austen, *Persuasion*, It is something for a woman to be assured, in her eight-and-twentieth year, that she has not lost one charm of earlier youth: | 1821-1822 W. Hazlitt, *Table-Talk, Essays on Men and Manners*, A flashy pamphlet has been run to a five-and-thirtieth edition, and thus ensured the writer a 'deathless date' among political charlatans, by regularly striking off a new title-page to every fifty or a hundred copies that were sold. | 1840 C. Dickens, *Old Curiosity Shop* (upon his eight-and-twentieth birthday)

1851-1900 [2]

1859 C. Dickens, *A Tale of Two Cities*, Mrs. Southcott had recently attained her five-and-twentieth blessed birthday, | 1861 G. Eliot, *Silas Marner*, That, at least, was the condition of Godfrey Cass in this six-and-twentieth year of his life.

### 2.2.2. Examples of Pattern BB (*one twentirth / one-twentieth*)

A great many examples of the identical form of Pattern BB (*one twentieth, one-twentieth*) occur in the present corpora. However, not a single example of the ordinal numerical was encountered both in British English and in Americal English. Instead, all examples of Pattern

BB were used to mean fractions. People desired to avoid numerical confusion, because ways of expressing the ordinal numeral was superficially indistinctive from ways of expressing fractions.

### 2.2.3. Examples of Pattern CC (*twenty and first / twenty-and-first*)

1501-1550 [1]

1536-1540 T Cromwell, Letters, this and al other thinges as ye shal by your wysedome thinke expedyent the twenty and syxte day of februaryy.

1551-1600 [5]

1592-1593 HC-DP, CELAW2, by force of the former recited Statute of the Fyfte and Sixte yerres of Kinge Edwarde the Sixte, | 1592-1593 HC-DP, CELAW2, accordinge to the saide Statute made in the fyfte and sixt yerres of Kinge Edwarde the Sixt; | 1592-1593 HC-DP, CELAW2 (in the fyfte and sixt yerres) | 1592-1593 HC-DP, CELAW2 (the Fyfte and Sixte yerres) | 1592-1593 HC-DP, CELAW2 (in the Fyfte and Sixt yerres)

### 2.2.4. Examples of Pattern EE (*first and twenty / first-and-twenty*)

1501-1550 [1]

1536-1540 T Cromwell, Letters, In the name of god Amen in the yere of our Lorde god a thousande five hundreth syxt and thritty, and of the moste noble reigne of our soueraigne Lorde Henry the VIIIth king of England & of fraunce,

1551-1600 [1]

1592-1593 HC-DP, CELAW2, the Maker of everie suche Clothe shall incurre dowble the Penalties bye the Statute of the Fowrthe and Fyfte yerres of the Reignes of Kinge Philipp & Quene Marie to suche Default

### 2.2.5. Examples of Pattern FF (*first twenty / first-twenty*)

1501-1550 [6]

1519 ICAMET, ROLLHO2A, The seconde fyfty she sayd for crystes passyon exhybyte and done ryally lyke as he suffred in his manhode. | 1519 ICAMET, ROLLHO2A, The thyrde fyfty she sayd for the passyon of cryste as it was in his godhede / not bycause the godhede as the god\_hede myght suffre / but bycause this infynyte godhede loued so moche the nature of man / that yf it had ben mortall it sholde haue suffred deth; | 1519 ICAMET, ROLLHO2A, The fyrst fyfty she sayd for the infancye of cryst in the whiche he bare all his passyon to come / and yf it were not at that tyme in execucion

/ neuertheles it was in his entent and mynde. | 1519 ICAMET, ROLLHO2A, And these two meruaylles were shewed for the fyrst fyfty and the seconde. | 1519 ICAMET, ROLLHO2A (the thyrde fyfty of her psalter) | 1519 ICAMET, ROLLHO2A (the fyrst fyfty of thy psalter)

### III. Ordinal Numerals in the History of American English

#### 3.1. General Chronological Trends

The occurrence of ordinal numerals in electronically logged American English texts and American English documents in ARCHER 3.2 is tabulated in Tables 12 and 13 respectively.

Table 12 Variations of the ways in which ordinal numerals were expressed—electronically logged American English texts

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
before 1750	-	-	-	1	-	-
1751-1800	-	-	-	35	-	-
1801-1850	1	-	-	63	-	-
1851-1900	2	-	-	152	-	-
1901-1950	-	-	-	118	-	-

Table 13 Variations of the ways in which ordinal numerals were expressed—American English documents in ARCHER 3.2 (1650-1999)

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
1750-1799	1	0	0	1	0	0
1800-1849	0	0	0	1	0	0
1850-1899	0	0	0	1	0	0
1900-1949	0	0	0	1	0	0
1950-1999	0	0	0	0	0	0

Table 14 is an integration of Tables 12 and 13. Table 14 and its corresponding Figure 2 represents a historical process in which Pattern DD (*twenty-first*) became predominant in American English. It is evident that, throughout the history of American English, Pattern DD has been exclusively employed. This is quite natural, considering the fact that Pattern DD had been already established in British English and the British people accelerated its use with their immigration into the United States.

Table 14 Integration of Tables 12 and 13

Corpus \ Pattern	AA	BB	CC	DD	EE	FF
before 1750	0	0	0	1	0	0
1751-1800	1	0	0	36	0	0
1801-1850	1	0	0	64	0	0
1851-1900	2	0	0	153	0	0
1901-1950	0	0	0	119	0	0
1951-2000	0	0	0	0	0	0

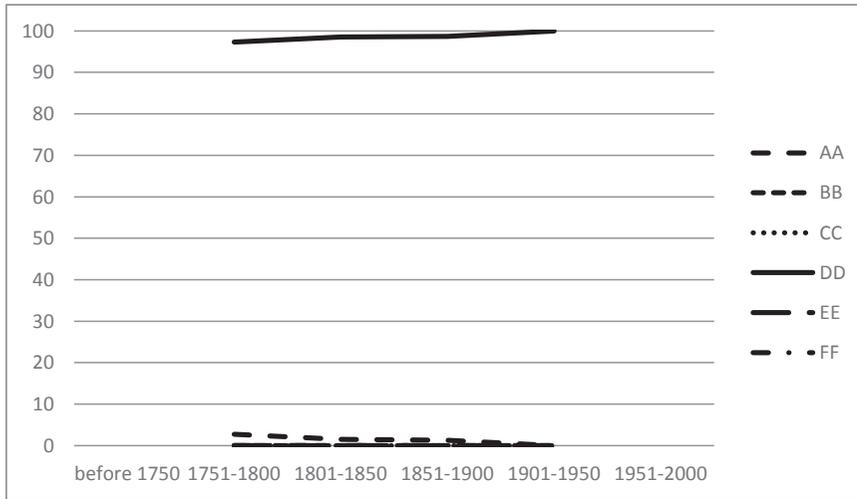


Figure 2 Figuration of Table 14

### 3.2. Non-Pattern DD Examples

Non-Pattern DD forms, exclusively Pattern AA (*one and twentieth*), occurred in no more than 4 examples, as shown in (5). According to *Britannica*, James F. Cooper, who was born in Burlington, New Jersey, and died in Cooperstown, New York, and Harriet E. P. Spofford, who was born in Calais, Washington County, Maine, and died in Amesbury, Massachusetts, lived in an area of the thirteen former colonies established by Britain on the Atlantic coast of North America. Their English was, in a sense, a blood relative of British English.

- (5) 1784 Anon., “Respublica v. Doan”, in *Reports of Cases Ruled and Adjudged in the Courts of Pennsylvania*, etc. ARCHER 3.2 1784doan\_l4a, to the form of the statute made in the one and thirtieth year of Queen Elizabeth, | 1826 J. F. Cooper, *The Last*

*of the Mohicans*, Vol. 1, 'Tis the six-and-twentieth edition, promulgated at Boston, | 1871 H. E. P. Spofford, *New-England Legends*, from the thirtieth day of October , , , until the one-and-thirtieth day . . . did languish, and languishing did live,” but on the one-and-thirtieth day did die.

#### 4. Conclusion

Based upon the evidence presented above, particularly in Tables 1, 2, 11 and 14, the following conclusions can be drawn. In British English, Pattern DD (*twenty-first*) began to multiply around 1650, and took precedence over the other morphological variants not later than 1700. In American English, Pattern DD has been exclusively and consistently employed throughout its history. This means that, if Pattern DD had not been regulated in British English when multitudes of British people began to immigrate into the United States, the establishment of Pattern DD in the U. S. might have been delayed greatly.

In fact, in the case of cardinal numerals, *one and twenty* was the main form of cardinal numerals in British English until around 1600, and during the next three hundred years it continued to vie with the form of *twenty-one* for predominance as the cardinal numerical form. The form of *one and twenty* continued to be used in British English in the second half of the nineteenth century and even in the early twentieth century until around the turn of the twentieth-century, when the form of *twenty-one* took complete precedence over the other forms of cardinal numerals. It took a bit longer time for the form of *twenty-one* to be established in British English, and accordingly the regulation in the U. S. was prolonged.

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deeply indebted for the financial support.

## Notes

1. On the history of cardinal numerals, a paper based upon a total of more than 8,153 examples has been made ready for publication. Because of limitations of space in the present publication, however, it will be published on another occasion. For the time being, please refer to pages 4, right to 11, left of the datasheets presented for the 48th PLM, which is available on my researchmap website: <https://researchmap.jp/read0020179/presentations/20396991>. In addition, not only writers or texts that began to utilise Pattern DD (*twenty-first*) in the history of English but also the explanation regarding the polarisation into this pattern will be dealt with on another occasion to avoid speculative reasoning. As touched on towards the end of 2.1., this polarisation seems to have something to do with a kind of ‘psychological ease’, or economy of language.
2. The following quotation is a genuine example of Pattern AA. It was difficult, however, to classify it into one of the following periods, 1551-1600 or 1601-1650.

1570-1640 HC-DP, CEHIST2B, This ceremony was performed upon Thursday, the seventeenth day of November, in the year 1558, in the five-and-twentieth year of her age, when shee had been well instructed by experience and adversity, two excellent teachers for her, who had a judgment farre beyond her yeares.

At one time in history, Pattern AA could denote fractions, even though it occurred infrequently in the present corpora.

1666 LAMPETER, SCIA, The distance of the Common Center of Gravity of the two Bodies, will be from that of the Earth, about a two and fortieth part of fifty six Semidiameters; that is, about  $56/42$  or  $4/3$  of a Semidiameter; that is about  $1/3$  of a Semidiameter of the Earth, above its surface, in the Air, directly between the Earth and Moon. | 1666 LAMPETER, SCIA, (and therefore, probably, the Gravity) of the Moon to be about an One and fortieth part of that of the Earth; | 1691 J. Locke, “Some considerations of the consequences of the lowering of interest, and raising the value of money”, For to the Trade that is driven by Labour, and Handicrafts Men, One two and fiftieth part of the yearly Money paid them will be sufficient: | 1776 A. Smith, *An inquiry into the nature and causes of the wealth of nations*, The average quantity of all sorts of

grain exported from Great Britain does not, according to the same author, exceed the one-and-thirtieth part of the annual produce.

## Primary Sources

### A. Present-day English Corpora

a. The six following corpora which are included in Hofland, Knut, Anne Lindebjerg and Jørn Thunestvedt (1999) *ICAME Collection of English Language Corpora*, 2nd ed., The HIT Centre, University of Bergen:

(i) [LOB] Johansson, Stig, in collaboration with Geoffrey N. Leech and Helen Goodluck (1978) *The Lancaster-Oslo/Bergen Corpus of British English, for Use with Digital Computers*, Department of English, University of Oslo. <1961>

(ii) [FLOB] Hundt, Marianne, Andrea Sand and Rainer Siemund (1998) *The Freiburg-LOB Corpus of British English*, Englisches Seminar, Albert-Ludwigs-Universität Freiburg. <1991-1992>

(iii) [Brown] Francis, W. Nelson and Henry Kucera (1964 [1979]) *A Standard Corpus of Present-Day Edited American English, for Use with Digital Computers*, Revised and Amplified Edition, Department of Linguistics, Brown University. <1961>.

(iv) [Frown] Hundt, Marianne, Andrea Sand and Paul Skandera (1999) *The Freiburg-Brown Corpus of American English*, Englisches Seminar, Albert-Ludwigs-Universität Freiburg. <1991-1992>

(v) [ACE] Peters, P. with the assistance of A. Smith. <sup>3</sup>1989. *The Australian Corpus of English*. Department of Linguistics, MacQuarie University. <1986>

(vi) [Kolhapur] Shastri, S. V. in collaboration with C. T. Patilkulkarni and G. S. Shastri. 1986. *The Kolhapur Corpus of Indian English, for Use with Digital Computers*. Department of English, Shivaji University. <1978>

b. [BNC] *British National Corpus* (2000), World Edition, SARA Version 0.98, Humanities Computing Unit of Oxford University on Behalf of the BNC Consortium, Oxford. <Mostly 1984-1994>

### B. Historical English Corpora

a. Electronically logged British English texts / American English texts, consisting of a heterogeneous mixture of 325 / 410 different documents [104MB / 127MB] such as biographies, dramas, essays, journals, letters, novels, speeches, travelogues, treatises, etc. They were written mostly during 1351-1950 / 1750-1950, and randomly selected and downloaded from the websites of the following universities and organisations in October 2005 and July 2006: McMaster University (<http://socserv2.socsci.mcmaster.ca/>), Project Gutenberg (<http://www.gutenberg.org/>), Rutgers University in Newark (<http://andromeda.rutgers.edu/>), University of Michigan (<http://www.hti.umich.edu/>),

University of Oregon (<http://darkwing.uoregon.edu/>), University of Pennsylvania (<http://digital.library.upenn.edu/>), University of Toronto (<http://eir.library.utoronto.ca/>), University of Virginia (<http://etext.lib.virginia.edu/>) and York University, Canada (<http://psychclassics.yorku.ca/>). Here the present author would like to express to these university and organisation websites a great debt of gratitude. Their on-line electronic texts were very useful, saving the present writer much time in compiling examples before drawing up Tables 3 and 12.

- b. ARCHER 3.2 (adhering to ARCHER User Agreement, Part 1, April 2014, "6. How to cite ARCHER")
- ARCHER 3.1 = A Representative Corpus of Historical English Registers version 3.1. 1990–1993/2002/2007/2010/2013. Originally compiled under the supervision of Douglas Biber and Edward Finegan at Northern Arizona University and University of Southern California; modified and expanded by subsequent members of a consortium of universities. Current member universities are Bamberg, Freiburg, Heidelberg, Helsinki, Lancaster, Leicester, Manchester, Michigan, Northern Arizona, Santiago de Compostela, Southern California, Trier, Uppsala, Zurich. Examples of usage taken from ARCHER were obtained under the terms of the ARCHER User Agreement (available on the Documentation page of the ARCHER website, <http://www.manchester.ac.uk/archer/>). <BrE 1600-1999; AmE 1750-1999>
- c. [InteLex] InteLex Past Masters: Oxford University Press editions of correspondence from important figures in England, 70 collections, 114 volumes <1500-1950>
- I. The Emerging Tradition, 1500-1700: 10 Collections, 14 Volumes
  - II. The Eighteenth Century: 21 Collections, 46 Volumes
  - III. The Romantic Age: 15 Collections, 18 Volumes
  - IV. The Modern Era, 1800-1950: 24 Collections, 36 Volumes
- d. The five following corpora which are included in Hofland, Knut, Anne Lindebjerg and Jørn Thunestvedt (1999) *ICAME Collection of English Language Corpora*, 2nd ed., The HIT Centre, University of Bergen:
- (i) [CEECS] Sociolinguistics and Language History Project Team (1998) *Corpus of Early English Correspondence Sampler*, Department of English, University of Helsinki. <1418-1680>
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  - (iii) [ICAMET] Markus, Manfred, *et al.* (1999) *Innsbruck Computer-Archive of Machine-Readable English Texts*, Department of English, University of Innsbruck <1386-1688>
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(なかむら・ふじお 外国語学部教授)