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Chapman in the Shadows: Computational Attribution and the Case of *Fidele and Fortunio*

Introduction

Anyone looking for information about this comedy, translated from the Italian, will inevitably be referred to Anthony Munday as the author, who was in Rome in 1578 and 1579 and probably came into contact with Pasqualigo's *Il Fedele*. His adaptation of the comedy, published in 1584 and first printed in 1585, contains a dedication signed 'A.M.'. All major literary criticism since then has accepted the attribution to Munday. One exception is Charles Crawford, who refers to Robert Allot's *England's Parnassus* of 1600 in naming George Chapman. In his introduction to Allot's compilation he explains:

> Allot knew that Chapman was the author of the Two Italian Gentlemen, although the play, apparently, was printed anonymously and no mention of Chapman's connexion with it has been found outside England's Parnassus (Allot, Introduction, xxix).
>
> I can only conclude that the poet and Allot were intimate friends, that Chapman told the latter that the Two Italian Gentlemen was his work, that he let him see some of Marlowe's papers which had been entrusted to him for possible use in his continuation of Hero and Leander, and that he saw at the same time a manuscript of the latter, in Chapman's own hand, from which he copied all the extracts from the poem which appear in his work (Allot, Introduction, xxx).

This was immediately answered by T. M. Parrott from Princeton University:

> As the latest editor of Chapman, however, I feel bound to give my reasons for the exclusion of this play from the recently published edition of his comedies, and to explain why it will not appear in the supplementary volume of Chapman's Plays and Poems, where, if there were any sufficient reason for attaching it to his name, the student of Chapman might reasonably expect to find it (p. 241).

Parrott then refers to several intricacies concerning the two existing manuscripts of the play, rediscovered by Collier, a notorious forger who may have added the dedication signature "A.M" and who had also forged a dedication in Chapman's *All Fools* (243). But on the other hand Parrott did not see himself in the position of accepting Chapman as the author of *Fidele and Fortunio*, as he did not trust Robert Allot and quoted Crawford himself as a proof: "I will let Mr. Crawford answer: 'his range of reading is not a very wide one' (p. xxv), he had a 'bad judgement and a treacherous memory'" (245). As a result, 130 out of 2350 quotations proved to be incorrectly attributed and a similar thing happened to him in the attribution of plays. Parrott saw it as quite unlikely that Chapman would have written *Fidele and Fortunio* at age 25 and then kept quiet for another ten years. Furthermore, in his view, Crack-Stone in *Fidele* has nothing in common with Poggio in Chapman's *The Gentleman Usher*. In the balance of probabilities, Parrott finally remarks: "Chapman weighs as nothing against the traditional assignment of the play to Anthony Munday" (251).

Kristin M. S. Bezio's too, in her more recent article *"Munday I sweare shalbee a hollidaye": The Politics of Anthony Munday, from Anti-Catholic Spy to Civic Pageanteer (1579–1630)*

explores the political and cultural evolution of Anthony Munday across his long career in early modern England, and quotes from *Fidele and Fortunio* to illustrate the early phase of his life, when Munday actively participated in anti-Catholic propaganda, including travel to Rome and infiltration of Catholic seminaries.

Stylometric Analyses

The exciting question in view of the decision between Munday's preference and Chapman is, of course, how non-traditional stylometry with its ability of distant reading and handling large amounts of data can arrive at a resolution of the problem. A first approach is to examine the reference texts in question, whose delta values in relation to *Fidele and Fortunio* express stylistic proximity or distance (see Note 1). All in all, 113 contemporary reference texts were checked with a window size of 4000 words, a step size of 250 words, and a culling value of 70%. The result can be seen at http://www.shak-stat.engsem.uni-hannover.de/allfedele.html, where stylistically close texts are highlighted in red with conditional formatting and stylistically distant plays in blue. Table 4 in the appendix records the position of each reference text, the reference text itself, its delta value and the distance from the text above.

At position 0 in Table 4 we find the target text which was again added in the list of reference texts to find its delta value, which apparently is not zero due to the z-scores derived from averaged standard deviations. The first striking feature is the close stylistic relationship between *Fidele and Fortunio* and Shakespeare's plays, including *Arden of Faversham* (pos. 5), which has been recognized as a Shakespeare play in the 2016 New Oxford Shakespeare Edition. Does this closeness suggest authorship might be the question. However, in his early years in London Shakespeare is known to have been a sponge for all the formative material and themes he could get his hands on, and to have reused them in his work. This is true of *Fedele and Fortunio*. When the sorceress Medusa prepares a love potion for Fortunio on behalf of Victoria, the list of ingredients is not dissimilar to that of the witches in Macbeth. The mutual reassurance of lovers is also a recurring motif, for example in *Much Ado About Nothing*, where Beatrice and Benedick are involved. Viola's love for Orsino in *Twelfth Night* is subject to similar doubts, and Helena and Demetrius in *A Midsummer Night's Dream* find each other only after long romantic entanglements. Third parties are often involved, for example when Hermia s father disturbs her relationship with Lysander, or in *The Merchant of Venice* when Shylock does not approve of his daughter Jessica s love for Lorenzo. Finally, in *Othello*, it is Iago s manipulations that trigger envy and suspicion in Othello and cause his relationship with Desdemona to end in tragedy. Crack-Stone also returns in Shakespeare as a representative of the *miles gloriosus*. Along with Samuel Rowley s portrayal of Sir John Oldcastle in *The Famous Victories of Henry V*, Shakespeare transforms him into Sir John Falstaff, a large and boisterous stage figure who characterises the plays of *Henry IV* and *The Merry Wives of Windsor*. Falstaff is known for his quick wit and sharp tongue. He engages in witty banter, clever puns and humorous exchanges with other characters, often using humour to deflect criticism or avoid confrontation. He enjoys entertainment, eating and drinking to excess. He avoids danger and prioritises his own safety at the expense of others. His cowardice is contrasted with grandiose promises and heroic deeds which he never performs. Bearing in mind the later inclusion of the comic complications and errors in Shakespeare s later work, I come to the personal conclusion that the author of *Fidele and Fortunio* is the lender and Shakespeare the borrower.

As far as Munday and Chapman are concerned the survey suggests indeed that Chapman is closer to *Fidele and Fortunio* as his texts occupy positions 16, 25, 26, 39 and 59, which equal delta distances of 11.3, 12, 12, 13 and 14.3 from the target text, whereas Munday's closest play can be found at position 28, followed by 48 and 76, distances of 12.2, 13.4 and 16.2. But in order to corroborate this trend a more detailed analysis with rolling delta and a variety of window sizes is needed. An additional check must be seen in the choice of variables, where word frequencies (mf1w), frequencies of character bi- and trigrams (mf2c, mf3c) make sense. Here it is the number of availabilities which contributes to their accuracy. As far as word frequencies are concerned, their availability ranges from 101 to 323 in window sizes from 1000 to 5000 words at an interval of 1000 words. Character bigrams range from 278 to 354 available variables, and the number of character trigrams starts with 714 variables and continues with capped 1000 variables in the remaining window sizes. The exact numbers for each window size can be found in Table 5 in line 64. It is character trigrams which due to the high number of available variables per window size are most reliable. As the decisions could only opt for Munday (M) or Chapman (C) a rather clear picture came to the fore. Chapman's claim for authorship is stronger than expected.

But there are also sections in which Munday signals prevail. A conservative estimate could be that an original version of the play by Munday was thoroughly revised by Chapman. Since the rights of printers and publishers were closely linked to the first printed version, it is quite conceivable that a revised version was provided with the details of the first printing. We will have to see to what extent Rolling Classify can confirm Munday's contribution. Three classifiers were used to determine the authorship of *Fidele and Fortunio*. NSC (nearest shrunken centroid) was described as classification friendly by M. Eder, whereas SVM (support vector machine) employs a very high decision level and is very precise. The third classifier is the classic Burrowsian DELTA classifier. Once again mf1w, mf2c and mf3c were tested with window sizes from 1000 to 8000 words at a distance of 1000 words (see also Note 2).

Even though there are only two contestants it becomes clear that the classifiers do not always come to the same conclusion. This has to do with their specific mathematical kernel. And yet their overall performance is very informative. Table 1 informs us about the number of assignments with the variables mf1w, mf2c and mf3c in the respective classifier section. At the end, all assignments are listed in summary form, and the same can be followed in the right half of the table with percentages.

Table 1 Rolling Classify attributions with nsc, svm, and delta

NSC	**mf1w**	**mf2c**	**mf3c**	**NSC**	**mf1w**	**mf2c**	**mf3c**
Chapman	330	341	316	Chapman	95,9	99,1	91,9
Munday	14	3	28	Munday	4,1	0,9	8,1
no.	344	344	344	%	100	100	100
SVM	**mf1w**	**mf2c**	**mf3c**	**SVM**	**mf1w**	**mf2c**	**mf3c**
Chapman	334	249	303	Chapman	97,1	72,4	88,1
Munday	10	95	41	Munday	2,9	27,6	11,9
no.	344	344	344	%	100	100	100

DELTA	**mf1w**	**mf2c**	**mf3c**	**DELTA**	**mf1w**	**mf2c**	**mf3c**
Chapman	265	267	297	Chapman	77,0	77,6	86,3
Munday	79	77	47	Munday	23,0	22,4	13,7
no.	344	344	344	%	100	100	100
total	**mf1w**	**mf2c**	**mf3c**	**total**	**mf1w**	**mf2c**	**mf3c**
Chapman	929	857	916	Chapman	90,0	83,0	88,8
Munday	103	175	116	Munday	10,0	17,0	11,2
no.	1032	1032	1032	%	100	100	100

Munday's shares are very low, even if there are different weightings. One could well believe *Fidele and Fortunio* is a complete Chapman text and that Munday's signals are fed by the linguistic commonality of all playwrights of the time. Chapman's first theatrical success *The Blind Beggar of Alexandria* in 1596 is said to have derived from the *commedia dell'arte* tradition of Italy. While Helen Kaufmann speculated in *The Comedy of Manners* (1959) that George Chapman may have encountered the Commedia dell'Arte during a trip to Italy, her claim has since been treated with scholarly caution. Later critics, such as Robert Henke and Richard Andrews, acknowledge stylistic parallels between Chapman's comedies—particularly *May Day*—and Commedia conventions, but emphasize the broader European transmission of these theatrical forms. Louise George Clubb contextualizes Kaufmann's claim within a mid-20th-century critical trend of attributing Italian influence to English drama, noting that such influence did not necessarily require firsthand experience abroad. While the Commedia's impact on Chapman's dramaturgy remains plausible, the hypothesis of Italian travel remains unsubstantiated by direct evidence. What remains is a pan-European influence of the Commedia, which is confirmed by the surveys of the lowest delta values which show the large degree of similarity between the plays of Shakespeare, Munday and Chapman.

The crucial question is if there is a way in modern non-traditional stylometry to create reliable distinctions between authorial styles. A method that goes beyond the determination of stylistic similarity is the General Imposters Method (GI), which determines whether two corpora are more similar. The comparison of *Fidele and Fortunio* with Chapman's and Munday's previously used reference texts should show a clear tendency. Eder implemented GI 2018 in R Stylo and gave a detailed explanation in his Computational Stylistics Group blog, so it is only necessary to refer to the accuracy of the Růžička metric (ru) here. When Kestemont et al. (2016) tested authorship verifications with the Růžička metric they came to a clear conclusion: "Comparative evaluations across a variety of benchmark corpora show that this metric yields better, as well as more consistent results than previously used metrics." (Introduction).

Table 2 General Imposters evaluations

	A	B	C	D	E	F
1	**Růžička**	low	high	**chap**	**mun**	var.
2	anon_fedele	0.06	0.93	**1**	0.03	mf1w
3	anon_fedele	0	0.87	**1**	0	mf2w
4	anon_fedele	0	0.81	0.68	0.44	mf1c
5	anon_fedele	0	0.81	0.68	0.44	mf2c
6	anon_fedele	0	0.48	**0.98**	0.11	mf3c
7						

Jan Rybicki provided an optimised version of GI which names the grey area of unsafe attributions between "low" and "high" (white letters, grey background). Only values above "high" qualify for authorship. The clearest verdict can be found in the Růžička metric with words (mf1w), word bigrams (mf2c) and character trigrams (mf3c). They are very clear in their choice of Chapman (white letters, dark background).

In the past attributions often relied on rare words, or function words, identical n-grams or collocations. Parrott refers to the word "delicate" which for him has a clear Munday ring. When Pervez Rizvi introduced his programs for finding matching N-grams and collocations in 527 plays written in the years 1552 to 1657 a new and exciting prospect opened before researchers (https://www.shakespearestext.com/can/index.htm). It became clear that n-grams were more common and more wide-spread than had been believed so far. Not always were they clear indications of authorship. In the case of *Fidele and Fortunio* Munday's *John a Kent and John a Cumber* (1587?) and *The Downfall of Robert Earl of Huntington* (1598) were not in the database, but for Chapman's *An Humorous Day's Mirth* (1597*), All Fools* (1599), *The Blind Beggar of Alexandria* (1596) matches could be found. There were 45 entries for *An Humorous Day's Mirth*, 129 entries for *All Fools*, and 41 for *The Blind Beggar of Alexandria*, all in all 25 pages, too many to be printed here. But a proper comparison became possible when an equal number of the reference texts in question could be examined with WCopyfind, a plagiarism program by Prof. Bloomfield. It records the number of n-grams that *Fidele and Fortunio* has in common with Munday's and Chapman's reference texts.

Table 3 Matching n-grams in Munday and Chapman texts

	A B C	D	E	F	G
1	*Fidele and Fortunio*, common matches of	hepta-grams	penta-grams	tetra-grams	tri-grams
2	**Munday**				
3	*John a Kent and John a Cumber*	0	3	16	203
4	*The Downfall of Robert, Earl of Huntington*	0	2	10	197
5	*The Death of Robert, Earl of Huntington*	0	1	27	293
6	**Σ**	**0**	**6**	**53**	**693**
7	**Chapman**				
8	*The Blind Beggar of Alexandria*	2	3	24	227
9	*An Humorous Day's Mirth*	0	3	36	328
10	*All Fools*	0	4	28	274

11		**Σ**	**2**	**10**	**88**	**829**
12		Diff.	2	4	35	136

When Parrott excluded Chapman as author he based his opinion also on n-grams and collocations that *Fidele and Fortunio* should have in common with Chapman's works. He did not find any. But of course, he did not have the possibilities of computerised procedures at his disposal, so that in view of the amount of data to be processed, it is understandable why Chapman was not recognised.

Conclusion

One essential question remains, namely that of the scenarios that fit the stylometric findings. On the one hand, we have the first work of a former Oxford student named Chapman, who may have gained knowledge of Italy and the text *Il Fedele* through his study contacts und who, from at least 1583 through 1585 was in the household of Sir Ralph Sadler, who was employed by both Queen Elizabeth and William Cecil, Lord Burghley. The dramaturgical realisation and printing of the text is marked with 'A.M.' so as to prefix a hitherto nameless origin. The other option is the thorough revision of a Munday pre-text by Chapman years later. This is the version that has survived and, to preserve the rights of the printer and publisher, the original details have been retained. Such a process was not uncommon, consider Pavier's 1619 edition of *Sir John Oldcastle*, which repeated information from the first print in 1600. Both scenarios are also conceivable without the dedication 'A.M.'. There is no answer as to whether Collier added it later or not.

As far as I know, there is no philological study of the relationship between *Fidele and Fortunio* on the one hand and Chapman's dramatic work on the other. As far as rhetoric and language are concerned, there are certainly parallels in the complex syntax, in the expansive metaphorical language, which is littered with Latinisms. Thematically, the common interest in truth and identity as well as the contemplation of fidelity and love should be mentioned. The dramatic figures are intellectually complex and have psychological nuances. The fact that they do not appear as stereotypes, as is often the case in contemporary drama, is one of Chapman's special characteristics. Stylistically, thematically, and rhetorically, *Fidele and Fortunio* aligns well with Chapman's early work. It feels like an experimental play by a young, intellectually ambitious author — consistent with Chapman's emerging voice in the 1580s–90s.

Notes

1. Delta was introduced by John Burrows in 2002 as a key method for measuring stylistic differences between texts, particularly in terms of function word frequencies and their z-scores in a target text and a group of reference texts. The idea is that stylistic similarity can be measured as the average difference in standardized word frequencies. Burrows had started off using function word frequencies (mf1w), but tests carried out by Grieve (2007) and others proved that character 3-grams (mf3c) were more effective, and Hoover (2004) had contributed

the additional knowledge that a culling value of 70% brought optimal results. Here the main distinction was that 0% examined up to 1,000 variables, and 100% only those that were present in all texts. This had a very disappointing effect in small windows, when sometimes only twelve or fifteen variables were expected to determine questions of authorship. A culling of 70% called up variables that were present in 70% of the reference texts, thus excluding in advance those texts that would not have played a role anyway. In his extensive study Eder (2013) had warned against excessively small samples, and for this reason, attributions were tested with mf1w, mf2c, and mf3c and with a window size of 4,000 words. Each time the window centroids were moved through the whole text at a distance of 250 words. Whereas delta could only measure whole texts rolling delta recorded stylistic changes and potential collaborations.

2. To detect potential shifts in authorship within *Fidele and Fortunio*, I employed the Rolling Classify method as implemented in the Stylo package for R (Eder 2015). Rolling Classify is a supervised stylometric technique that segments a text into overlapping windows of various sizes and compares each window to a reference corpus of known authors. Each segment is then classified based on its proximity to the stylistic profiles of the candidate authors, using distance measures such as nearest shrunken centroid (NSC), support vector machine (SVM) and Delta. This method enables the identification of internal stylistic variation, and has proven especially effective for detecting collaborative authorship, revisions, or later interpolations. In contrast to Rolling Delta, which is unsupervised, Rolling Classify depends on a predefined author set and yields a sequence of authorial attributions across the length of the text.

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Appendix

All tables record the R Stylo results and due to their long and monotonous appearance they were put into the appendix so that they cannot create any potential for distraction outside the argumentative structure.

Table 4 Delta proximities and distances

	A	B	C	D	E
1	Pos.	Author_Play		Δ	Diff.
2	**0**	**anon_fedele**		**15,1**	
3	1	shak_asyou		24,7	9,7
4	2	shak_othello		24,8	0,0
5	3	shak_12thnight		25,1	0,4
6	4	shak_merchant		25,1	0,0
7	5	anon_arden		25,2	0,0
8	6	shak_shrew		25,5	0,3
9	7	shak_romjul		25,8	0,3
10	8	shak_midsum		25,8	0,1
11	9	shak_pericles		26,0	0,2
12	10	shak_muchado		26,1	0,1
13	11	apo_kingleir		26,3	0,2
14	12	shak_winters		26,3	0,0
15	13	shak_lear		26,3	0,0
16	14	shak_cymbeline		26,4	0,1
17	15	shak_lovelab		26,4	0,0
18	16	**chap_blindbeggar**		26,5	0,0
19	17	shak_verona		26,5	0,0
20	18	mar_jewmalta		26,5	0,0
21	19	anon_weakwall		26,6	0,1
22	20	shak_hamlet		26,8	0,2
23	21	shak_mfm		26,8	0,0
24	22	shak_errors		26,9	0,1
25	23	shak_tempest		27,0	0,1
26	24	anon_oldcastle		27,1	0,1
27	25	**chap_allfools**		27,1	0,0
28	26	**chap_msd'olive**		27,1	0,0
29	27	shak_2henry4		27,2	0,1
30	28	**mun_deathh**		27,3	0,1
31	29	lyly_endimion		27,4	0,1
32	30	shak_windsor		27,4	0,0
33	31	shak_troilus		27,4	0,1
34	32	anon_knackknavems		27,5	0,1
35	33	shak_caesar		27,5	0,0
36	34	mar_faustb		27,5	0,0
37	35	mar_fausta		27,8	0,2
38	36	lodge_lookingglass		27,8	0,0

39	37	chettle_mshoffman	28,0	0,2
40	38	shak_1henry4	28,1	0,1
41	39	**chap_daysmirth**	28,1	0,0
42	40	anon_moregut	28,1	0,0
43	41	kyd_soliman	28,2	0,1
44	42	peele_oldwives	28,3	0,1
45	43	shak_titus	28,4	0,0
46	44	shak_2henry6	28,4	0,0
47	45	shak_macbeth	28,4	0,0
48	46	anon_ironside	28,4	0,0
49	47	anon_mucedorus	28,4	0,0
50	48	**mun_kentcumberms**	28,5	0,0
51	49	shak_richiii	28,5	0,1
52	50	shak_noblekinsmen	28,7	0,1
53	51	shak_twokins	28,7	0,0
54	52	shak_coriolan	28,7	0,0
55	53	shak_henryviii	28,8	0,1
56	54	anon_fairem	28,9	0,1
57	55	anon_guywarwickms	29,2	0,3
58	56	wilson_3ladieslondon	29,3	0,0
59	57	nashe_summers	29,3	0,1
60	58	apo_trtragr3	29,3	0,0
61	59	**chap_bussydambois**	29,4	0,0
62	60	anon_truerichiii	29,4	0,0
63	61	row_whenysee	29,4	0,0
64	62	lyly_saphophao	29,4	0,0
65	63	shak_1henry6	29,6	0,2
66	64	shak_john	29,7	0,1
67	65	shak_timon	29,7	0,0
68	66	mars_malcontent	29,7	0,0
69	67	kyd_spanpure	29,8	0,1
70	68	anon_georgegreene	29,8	0,0
71	69	wever_lustyjuventus	30,0	0,2
72	70	shak_richii1595	30,4	0,4
73	71	anon_edwardiii	30,4	0,0
74	72	shak_3henry6	30,5	0,1
75	73	peele_edward1	30,5	0,0
76	74	greene_alphonsus	30,7	0,2
77	75	h5prs	31,1	0,4
78	76	**mun_downfall**	31,3	0,2
79	77	greene_friarbb	31,3	0,0
80	78	peele_arraignment	31,4	0,1
81	79	apo_troublejohn	31,6	0,1
82	80	anon_ashrew	31,7	0,1
83	81	anonst_jackstraw	31,7	0,0

84	82	mar_edwii	31,8	0,1
85	83	anon_contention2	31,9	0,1
86	84	greene_orlando	32,1	0,1
87	85	anon_locrine	32,4	0,3
88	86	anon_wilybeguiled	32,4	0,0
89	87	porter_angrywomabing	32,4	0,1
90	88	mars_antmellid	32,6	0,1
91	89	gager_ulyssesRedux1592	32,6	0,0
92	90	anon_woodstock	32,6	0,0
93	91	lyly_motherbombie	33,1	0,5
94	92	mars_dutchcourt	33,1	0,0
95	93	anon_fvicth5	33,2	0,1
96	94	anon_contention1	33,6	0,3
97	95	lyly_campaspe	34,4	0,8
98	96	mar_massacre	34,6	0,2
99	97	mar_tamburlain2	34,8	0,2
100	98	lyly_mydas	34,9	0,1
101	99	lyly_gallathea	35,0	0,1
102	100	h5vs	35,2	0,2
103	101	kyd_mscornelia	35,7	0,4
104	102	mar_didoqueen	35,7	0,1
105	103	mar_tamburlain1	36,1	0,4
106	104	anon_jackestraw	36,4	0,3
107	105	daniels_cleop	36,9	0,5
108	106	apo_fvicthv	37,1	0,3
109	107	mars_antorevenge	37,9	0,8
110	108	peele_david	38,8	0,9
111	109	armin_foole	38,9	0,0
112	110	lodge_mariusscilla	39,0	0,1
113	111	peele_alcazar	39,4	0,4
114	112	sidney_marcantonie	39,5	0,1
115	113	armin_anestofninnies	39,9	0,4

The following Munday and Chapman reference texts were used in the R Stylo analyses.

chap_allfools.txt; chap_blindbeggar.txt; chap_daysmirth.txt; mun_kentcumberms.txt; mun_downfall.txt; mun_deathh.txt.

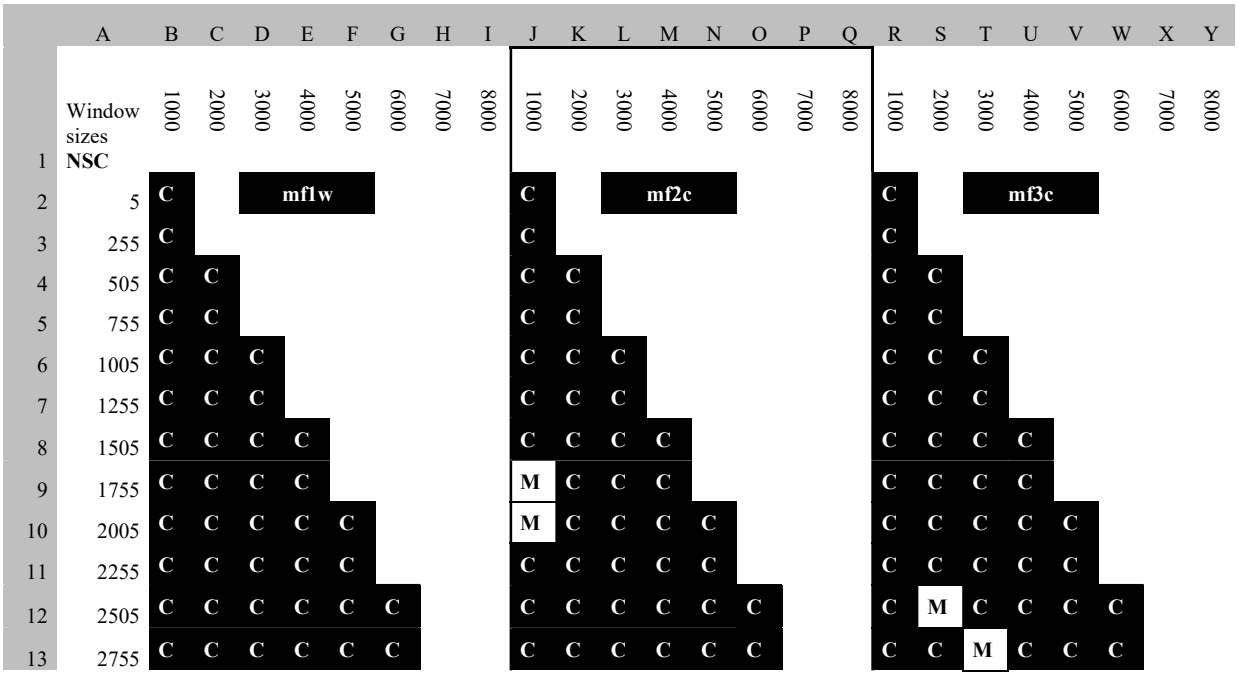
In Table 5 the attributions of the 1000-word windows are displayed at 500 words in line 6. The next window centroid of the 2000-word window can be found at 1000 words in line 8. The pattern is repeated up to window size 5000 and each window centroid is given an attribution.

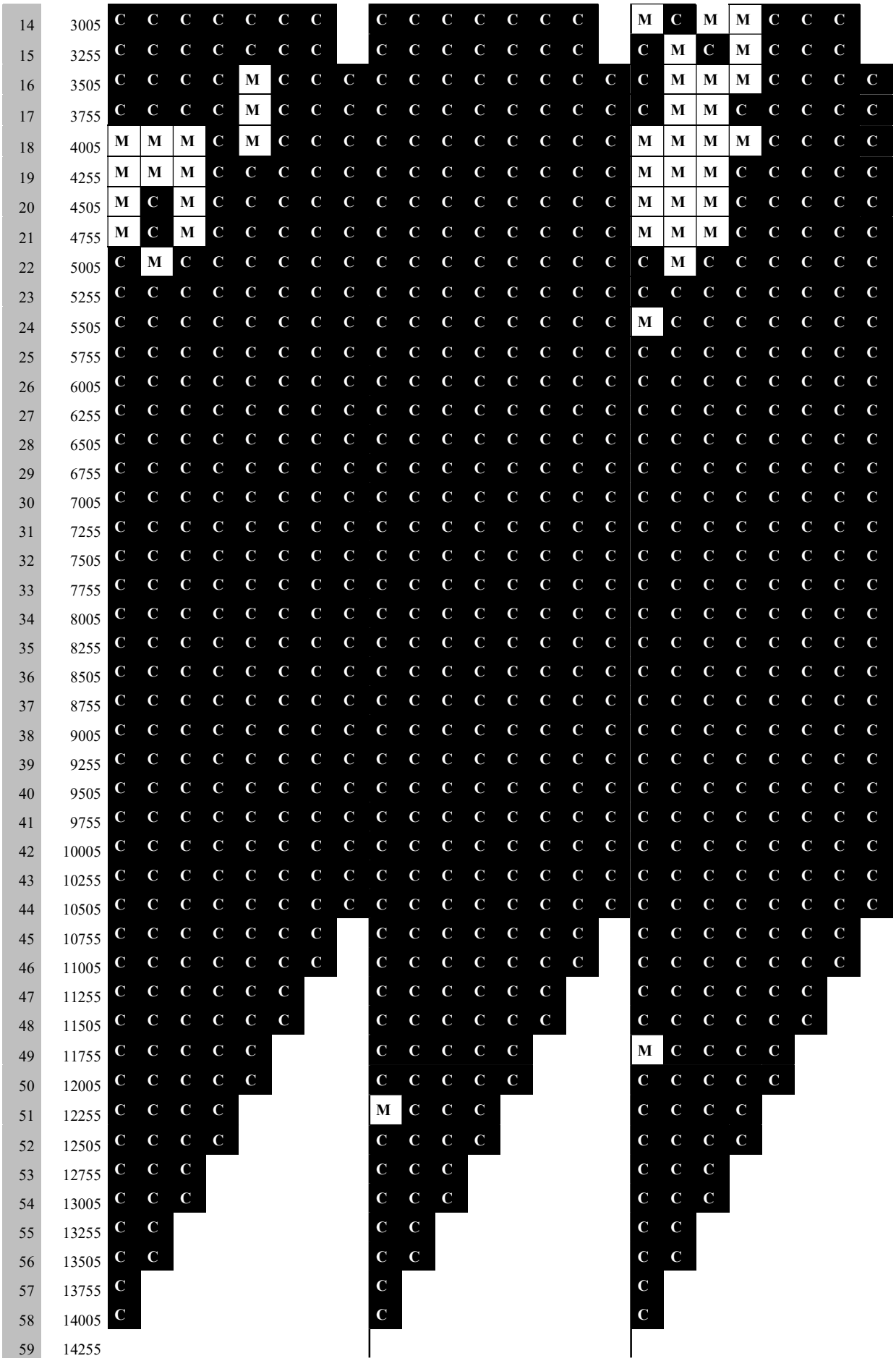
Table 5 Rolling Delta attributions with different window sizes and variables

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1		Rolling Delta attributions																
2		window sizes:																
		1000	2000	3000	4000	5000	1000	2000	3000	4000	5000	1000	2000	3000	4000	5000	**Scenes**	**Words**
3	words																	
4	0		**mf1w**					**mf2c**					**mf3c**					
5	250																	
6	500	C					C					C						
7	750	C					C					C					I.1	746
8	1000	C	C				C	C				C	C					
9	1250	C	C				C	C				C	C					
10	1500	C	C	C			C	C	C			C	C	C				
11	1750	C	C	C			C	C	C			C	C	C				
12	2000	C	C	C	C		M	C	C	C		C	C	C	C			
13	2250	C	C	C	C		M	M	C	C		M	C	C	C			
14	2500	C	C	C	C	C	M	M	C	C	C	C	C	C	C	C	I.2	2567
15	2750	C	M	C	C	C	C	M	C	C	C	C	M	C	C	C		
16	3000	C	C	C	C	C	C	M	C	C	C	C	M	C	C	C		
17	3250	M	C	M	C	C	C	C	M	M	C	C	C	M	M	C		
18	3500	M	C	M	M	C	C	C	M	M	C	C	C	M	M	C	I.3	3590
19	3750	M	M	C	M	M	C	C	C	M	M	M	C	M	M	C		
20	4000	C	M	C	M	M	C	C	C	M	M	M	M	C	M	M		
21	4250	C	M	M	M	M	C	C	C	C	C	M	M	M	C	C		
22	4500	M	M	M	M	M	C	C	C	C	C	M	M	M	C	M	II.1	4432
23	4750	M	M	M	M	C	C	C	C	C	C	M	M	M	C	C		
24	5000	M	M	M	M	C	C	C	C	C	C	C	M	M	C	C		
25	5250	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C		
26	5500	C	M	C	C	C	C	C	C	C	C	C	M	C	C	C	II.2	5635
27	5750	C	M	C	C	C	C	C	C	C	C	C	C	C	C	C	II.3	5761
28	6000	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
29	6250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
30	6500	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
31	6750	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	II.4	6658
32	7000	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	II.5	7041
33	7250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
34	7500	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
35	7750	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	III.1	7677
36	8000	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
37	8250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
38	8500	C	C	C	C	C	M	C	C	C	C	C	C	C	C	C		
39	8750	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		

40	9000	C	C	C	C	C	C	C	M	C	C	C	C	C	C	C	III.2	9102
41	9250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
42	9500	C	C	C	C	C	C	C	C	C	C	C	M	C	C	C	IV.1	9487
43	9750	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	IV.2	9836
44	10000	C	C	C	C	C	M	C	C	C	C	M	C	C	C	C		
45	10250	C	C	C	C	C	C	C	C	C	C	M	C	C	C	C	IV.3	10331
46	10500	C	C	C	C	C	M	M	C	C	C	M	C	C	C	C		
47	10750	C	C	C	C	C	C	M	C	C	C	M	C	C	C	C	IV.4	10851
48	11000	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	IV.5	11113
49	11250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
50	11500	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
51	11750	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
52	12000	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
53	12250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
54	12500	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	IV.6	12529
55	12750	C	C	C	C		M	M	C	C		C	C	C	C		V.1	12691
56	13000	C	C	C	C		M	M	C	C		M	C	C	C		V.2	13116
57	13250	C	C	C			M	M	C			C	C	C				
58	13500	M	C	C			M	C	C			C	C	C			V.3	13579
59	13750	C	C				C	C				C	C					
60	14000	C	C				C	C				C	C					
61	14250	C					C					C						
62	14500	C					C					C						
63	14750																	
		101	148	221	277	323	278	305	327	339	354	714	1000	1000	1000	1000		
64	15000																V.4	15094

Table 6 Rolling Classify attributions with nsc, svm, and delta in various window sizes

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15 3255 C C C C C C C C C C C C C C C C M C M C C C
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17 3755 C C C C M C C C C C C C C C C C C M M C C C C C
18 4005 M M M C M C C C C C C C C C C C C M M M M C C C C
19 4255 M M M C C C C C C C C C C C C C C M M M C C C C C
20 4505 M C M C C C C C C C C C C C C C C M M M C C C C C
21 4755 M C M C C C C C C C C C C C C C C M M M C C C C C
22 5005 C M C C C C C C C C C C C C C C C C M C C C C C C
23 5255 C C C C C C C C C C C C C C C C C C C C C C C C C
24 5505 C C C C C C C C C C C C C C C C C M C C C C C C C
25 5755 C C C C C C C C C C C C C C C C C C C C C C C C C
26 6005 C C C C C C C C C C C C C C C C C C C C C C C C C
27 6255 C C C C C C C C C C C C C C C C C C C C C C C C C
28 6505 C C C C C C C C C C C C C C C C C C C C C C C C C
29 6755 C C C C C C C C C C C C C C C C C C C C C C C C C
30 7005 C C C C C C C C C C C C C C C C C C C C C C C C C
31 7255 C C C C C C C C C C C C C C C C C C C C C C C C C
32 7505 C C C C C C C C C C C C C C C C C C C C C C C C C
33 7755 C C C C C C C C C C C C C C C C C C C C C C C C C
34 8005 C C C C C C C C C C C C C C C C C C C C C C C C C
35 8255 C C C C C C C C C C C C C C C C C C C C C C C C C
36 8505 C C C C C C C C C C C C C C C C C C C C C C C C C
37 8755 C C C C C C C C C C C C C C C C C C C C C C C C C
38 9005 C C C C C C C C C C C C C C C C C C C C C C C C C
39 9255 C C C C C C C C C C C C C C C C C C C C C C C C C
40 9505 C C C C C C C C C C C C C C C C C C C C C C C C C
41 9755 C C C C C C C C C C C C C C C C C C C C C C C C C
42 10005 C C C C C C C C C C C C C C C C C C C C C C C C C
43 10255 C C C C C C C C C C C C C C C C C C C C C C C C C
44 10505 C C C C C C C C C C C C C C C C C C C C C C C C C
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46 11005 C C C C C C C C C C C C C C C C C C C C C C C C
47 11255 C C C C C C C C C C C C C C C C C C C C C C C
48 11505 C C C C C C C C C C C C C C C C C C C C C C C
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50 12005 C C C C C C C C C C C C C C C C C C C C C
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56 13505 C C C C C C C C C C C C C C C C C
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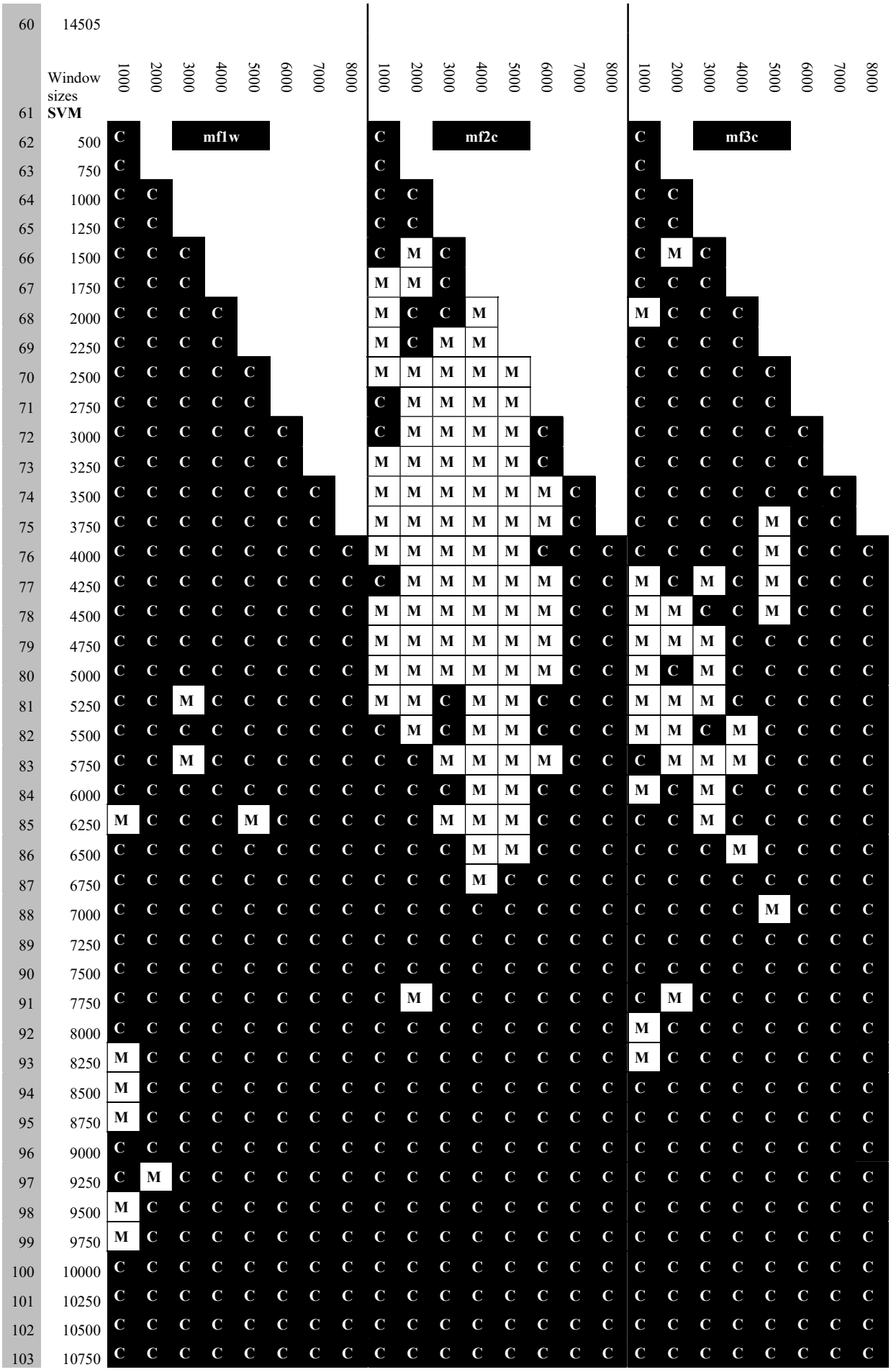
59 14255


14505
Window sizes
SVM
1000
2000
3000
4000
5000
6000
7000
8000
mf1w
mf2c
mf3c
500
750
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1500
1750
2000
2250
2500
2750
3000
3250
3500
3750
4000
4250
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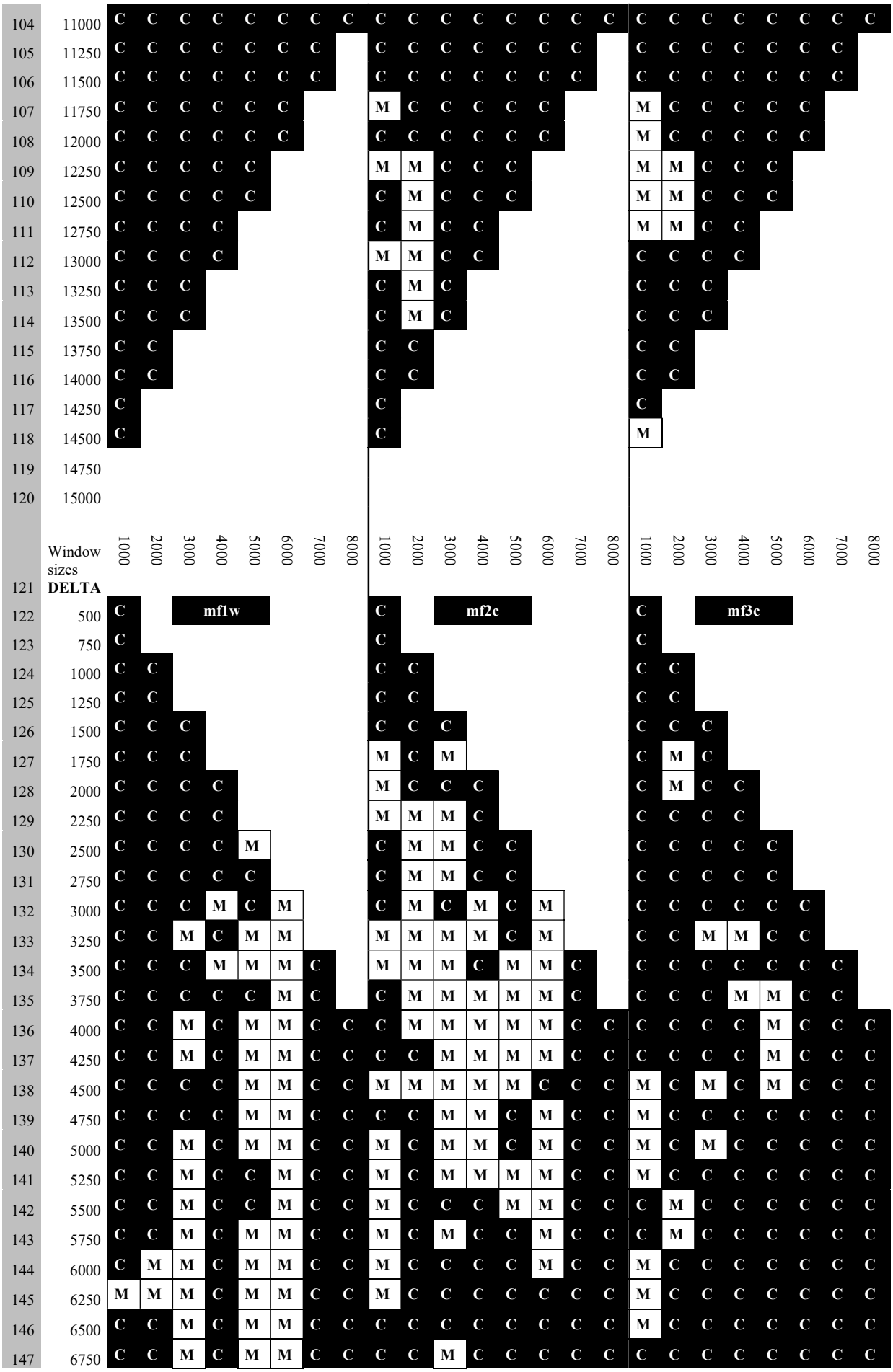
10500
10750


Window sizes
DELTA
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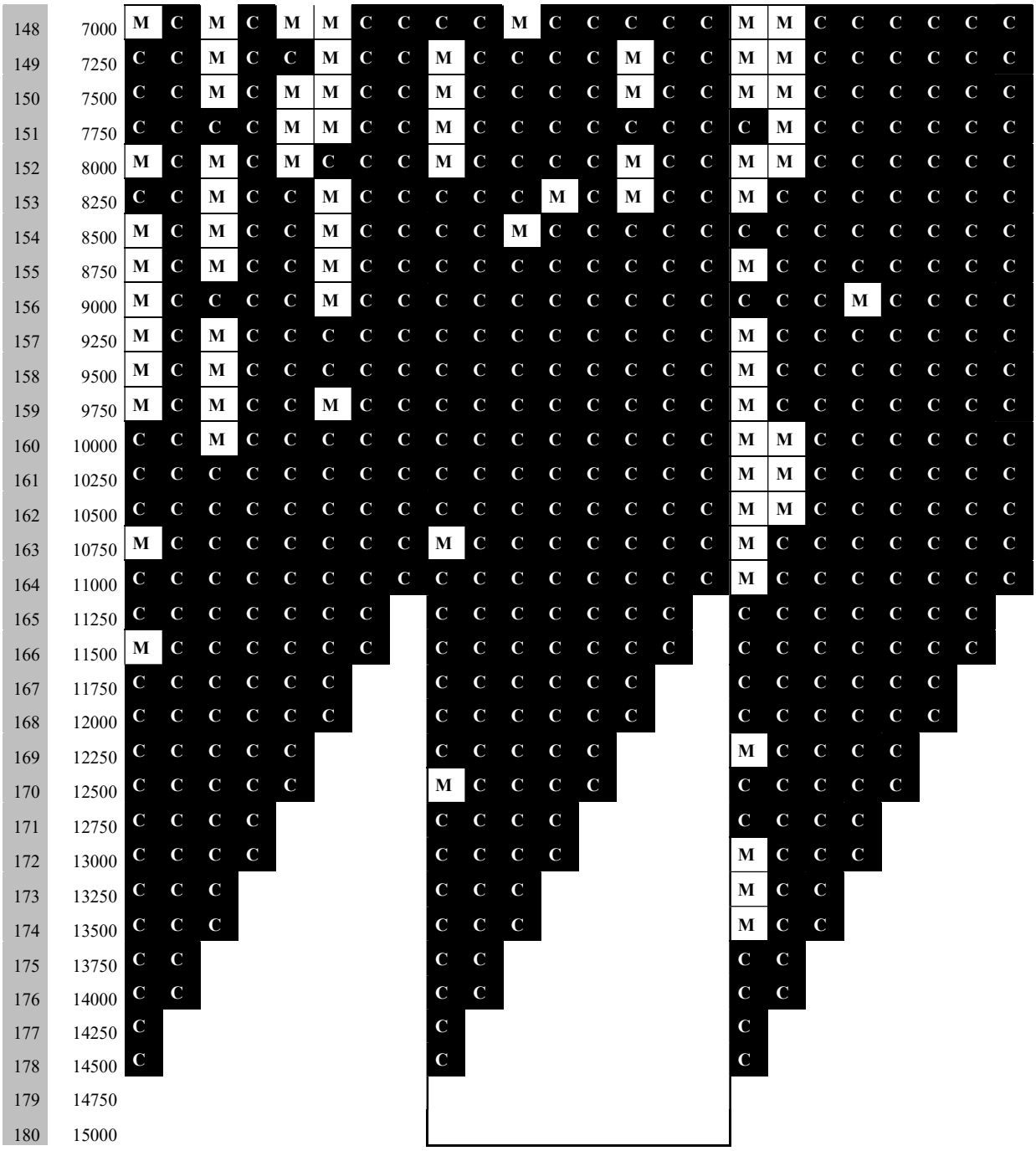
2000
3000
4000
5000
6000
7000
8000
mf1w
mf2c
mf3c



Abstract

The comedy *Fidele and Fortunio*, which is generally attributed to Anthony Munday and was written in 1584, was given a new author by Charles Crawford, namely George Chapman. Crawford based his assumption on passages from Robert Allot's *England's Parnassus* (1600). The combined R Stylo methodologies were applied to an equal number of reference texts by both authors with the surprising result of unambiguous signals in favour of Chapman. As far as numbers are concerned Chapman is also ahead of Munday with matching 6-grams, 5-grams, 4-grams and 3-grams that *Fidele and Fortunio* has in common with the reference texts of the two contestants.