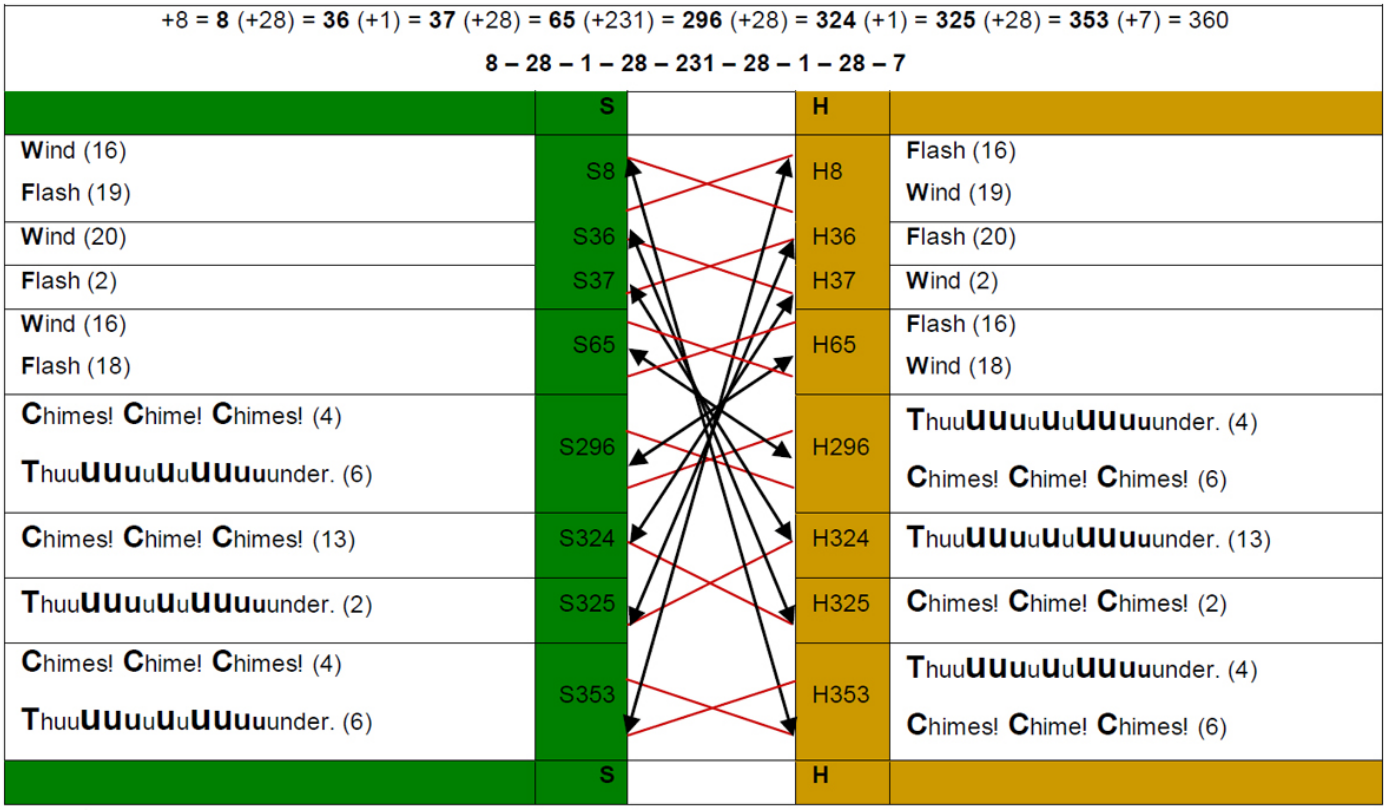


THE BOOK AS COMPUTER: A NUMERICAL AND TOPOLOGICAL ANALYSIS OF *ONLY REVOLUTIONS*

by Manuel Portela

THE NOVEL *ONLY REVOLUTIONS*: *The Democracy of Two Set Out & Chronologically Arranged* (2006), by Mark Z. Danielewski, establishes a relationship between its bibliographic coding (graphical and material form as a book made of letters, pages, and openings with a specific typographic design), its linguistic coding (phonetic, syntactic, semantic, and pragmatic verbal form), and its narrative coding (form as story).

Only Revolutions uses the Möbius strip and the circle, in their multiple material and symbolic manifestations—including letter and number shapes—as the organizing principle of this triple universe of signs. Circularity and mirror symmetry function simultaneously as the structure of the book, the structure of language, and the structure of narrative. This

ABOUT THE AUTHOR

Manuel Portela is Assistant Professor in the Department of Languages, Literatures and Cultures, University of Coimbra.

and bibliographic construction of text and book matches an equally acute sense of the combinatorial possibilities in the materiality of language and writing. The result is a work that blends a numeric and algorithmic logic—descendent from Oulipian mathematical procedures, with its formalized rules and constraints, to a Joycean paranomastic associationism—with its verbivocovisual revelations of the unconscious of language by means of phonic, graphical, and semantic attractions that explode into unexpected combinations. Whitmanian parataxis, with its uncontainable drive for ever-increasing enumerations, joins a Rabelaisian humor, replete with genital allusions.

Operations of metatextual organization add an ergodic and cybertextual layer to the discursive and bibliographic structure of Danielewski's work.[3] By suggesting several reading trajectories, they enlarge the set of syntactic and narrative permutations that readers can perform in their universe of signifiers. This compositional process turns the text into a machine for revealing the mechanism that makes the production of meaning possible. *Only Revolutions* exposes the mechanism that generates its particular bibliographic structure, that is, its material code. Through this device, it displays not only the intertwined mechanics of writing, language, and codex, but also of the novel itself as a printed and narrative genre. Designed as a textual machine, the text shows the abstractness of signs and culture, specifically, the combinatorial nature of discourse and representation. Those features enable us to investigate the connectivity and the physicality of the form's language and writing as producers of meaning: "A lot of *Only Revolutions* is interested in the mechanisms that are underlying things, the grammar, the physics of things. We're not talking about particular words but the relationship between words. Not the particular names of planets, but the nature of an ellipse and the effect of gravity on the orbit." (Danielewski, quoted in Miller 2007).

Only Revolutions confirms the architectural and stylistic ability that Danieleswki showed in his first novel, *House of Leaves* (2000). Both works are remarkable feats in the representation of various internal and external spaces, in the typographic spatialization of voices and discourses on the page and, above all, in the act of creating correspondences between the different scales and patterns into which those internal and external spaces are articulated. While *House of Leaves* was written and page-set on the basis of labyrinthine ramifications, *Only Revolutions* is materially structured on the basis of symmetric and recursive circularity.[4] A set of rules and algorithms translates the space-time of fiction into the space-time of the codex. The correspondence between referential spaces (spaces in the fictional world)

"Spin Cycle," The Washington Post Book World, *22 October 2006, p. 13; and Troy Patterson, "Complete 360,"* The New York Times, *5 November 2006. http://www.nytimes.com/2006/11/05/books/review/Patterson.t.html (access 31 July 2009). Since I finished this chapter in October 2009, several new studies have appeared: Assayag 2009; Leonard 2010; Aardse 2011; Hayles 2012: 221-248.*

3 *I use "ergodic" and "cybertextual" in the sense put forward by Espen Aarseth (1997), which implies both self-referential operations within the medium and readers' interventions in the construction of the semiotic field: "The concept of cybertext focuses on the mechanical organization of the text, by positing the intricacies of the medium as an integral part of the literary exchange. However, it also centers attention on the consumer, or user, of the text, as a more integrated figure than even reader-response theorists would claim. The performance of the reader takes place all in his head, while the user of cybertext also performs in an extranoematic sense." (1)*

4 House of Leaves *as both a thematization and performance of ancient and modern figures of the labyrinth has been analyzed by Cox (2006) and Hamilton (2008). Graulund (2006) examines its rhizomatic structure as a function of textual and paratextual relations.*

and self-referential spaces (spaces within the book itself) results in a heightened awareness of mediation that defines the experience of reading in both works. Danielewski is trying to create a homology between bibliographic form and narrative content, in order to show how recursivity works in the process of meaning production. Meaning is experienced as the result of a feedback between sequences of signifiers and their mode of material inscription.[5] Considered in its literal configuration on the page, the text takes on an iconic and indexical dimension, which creates a constant tension between a mimetic and a self-reflexive self-descriptive effect.

Like *House of Leaves*, *Only Revolutions* is not just a print emulation of the electronic writing space. This work interrogates the very topology of the codex as a multidimensional space for meaning, exploring the articulation between the page as a unit and the motions from page to page. Self-awareness of the ergonomics of codex spaces is achieved by means of internal symmetry axes at each level (graphic and bibliographic, verbal and narrative). The articulation between material spaces and conceptual spaces works through the topological and algebraic mediation of a set of geometric shapes and patterned numbers that stand out as a metacode. In this way, the codex reveals itself as a computational engine, i.e., as a mechanism that governs the distribution of letters and blanks on the page surface. Its signifying power depends upon various layers of symbolic inscription.

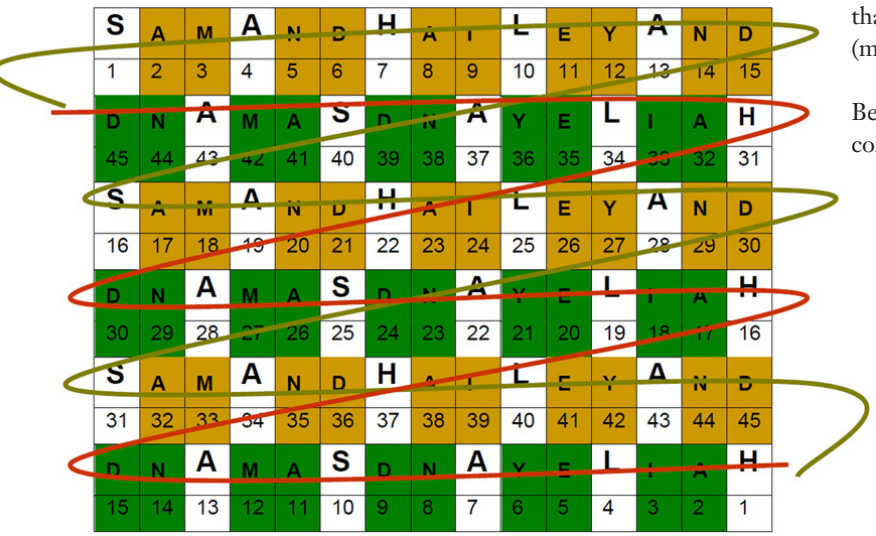
The symbol or logo of the work (Fig. 1), for example, can be read as a sign of those multiple inscriptions. It is a symbol for the two characters simultaneously, for stasis and motion, for union and separation, for the circularity of narrative, and even for the orbital relations between the bodies of signs and the bodies of readers created by the mechanics of book rotation and book translation. By linking graphic space to narrative space, this logo marks its own materiality as an archaeological and technological record of itself as a signifying trace. This ideogram may be said to contain a double reference: to the circle, represented in the outer ring; and to the Möbius strip, represented in the two traces. The figure of the circle is also used, in the body of the text, as a symbol for the eyes of each character—gold for Hailey, and green for Sam. The ring imitates the shape and color of the pupils of Hailey and Sam's eyes while the two traces suggest the point of entry for light. As ideograms for the eye and for the act of seeing they are symmetrically structured, both as reflections of each other, and as representations of the specular nature of the organ of sight. Their presence is multiplied and echoed in the colored letters and numbers in the text, and also in the doubly circled page numbers. The alphanumeric sign (as number zero and letter o) gains an ideographic and pictographic content by turning this particular logographic form into an identifying sign for each of the two individual characters. The color-coded O's and 0's become pictograms referring to the individual

5 *For an analysis of this technotextual dimension in* House of Leaves, *see N. Katherine Hayles*, Writing Machines *(Cambridge, MA: The MIT Press, 2002) pp. 109-131, and* Electronic Literature: New Horizons for the Literary *(Notre Dame, IN: Notre Dame University Press, 2008), pp. 175-185. Mark B. N. Hansen (2004) reads* House of Leaves *through the concept of digital topography, thus suggesting a retroactive effect of the computer on the printed page. These ideas are further developed by Jessica Pressman (2006) and Brian W. Chanen (2007). Both of them read the typographic composition in* House of Leaves *as a print emulation of electronic text networks. We should bear in mind however, that Danielewski has always stressed the freedoms of the paper-and-pencil medium and the three-dimensionality of the book as opposed to the two-dimensionality of the screen (cf. interview by McCaffery and Gregory 2003: 117-118). Although deeply dependent upon digital tools,* House of Leaves *and* Only Revolutions *are ultimately concerned with the multidimensionality and the dynamics of the codex form as a complex inscriptional and topological space.*

S	A	M	A	N	D	H	A	I	L	E	Y	A	N	D
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	N	A	M	A	S	D	N	A	Y	E	L	I	A	H
45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
S	A	M	A	N	D	H	A	I	L	E	Y	A	N	D
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D	N	A	M	A	S	D	N	A	Y	E	L	I	A	H
30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
S	A	M	A	N	D	H	A	I	L	E	Y	A	N	D
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
D	N	A	M	A	S	D	N	A	Y	E	L	I	A	H
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Table 2. 'SAMANDHAILEYAND' [H chapters] and 'HAILEYANDSAMAND' [S chapters] as a Möbius strip (a). The initial letters form 3 groups of 15 letters [(3 x 15) x 2 = 45 x 2 = 90]. © Manuel Portela, 2009.

Table 3. 'SAMANDHAILEYAND' [H chapters] and 'HAILEYANDSAMAND' [S chapters] as a Möbius strip (b). The initial letters form 15 groups of 3 letters [45 : 3 = 15 x 2 = 30]. © Manuel Portela, 2009.



embodied equation for deriving topological spaces from alphanumeric expressions, and vice versa.

There is yet another marker that associates chapters in groups of 3, since the initial letters for chapters 1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37, 40 and 43 are set in a larger font. In the table with these chapter groups, we can isolate the four letter markers: S, A, H and L. (Table 3). The reading motion of the structure created by initial letters suggests the topology of the Möbius strip, in which the front side of Sam's story is also the back side of Hailey's story, and vice versa. The motions of reading make a retroactive path between one sequence and the other. This elliptical motion is the line drawing movement for the number eight and for the infinity symbol. As mentioned above, the book actually describes rotations and translations which turn reading into a sort of gravitational orbit between the reader and the signs (see Fig. 19). The wavy line that reverses on itself suggests both a looping without beginning or end, like a Möbius strip, and an elliptical or circular motion. Danielewski's bibliographic device models reading and writing as gravitational fields. His book is an experiment on the physical and conceptual mechanics of reading.

These three-chapter groupings produce the palindromic equivalence "AND" = "DNA," which suggests that the numerical meta-codification can also be read as a matrix or genetic code for generating certain textual occurrences and certain semiotic correlations between verbal language and mathematical language. The constraints (which determine the number of lines and character strings, font size, areas of the four page sectors, number of pages, and number of page sets) function as the code for the various permutations and combinations. The productivity of this recursive replication for generating new textual segments is a consequence of that particular code. The established correlations, which link sequences according to the symmetry axes left/right and top/bottom, generate a periodic pattern 2-3-2-3-2-3 (Table 4). Anagrammatic and anacyclic patterns (palindromes) occur both in combinations of letters, and of numbers. Thus the anacyclic principle (i.e., reading in reverse) works at the level of bibliographic structures (page, page groups, and entire codex), at the level of linguistic and narrative structures (each narrative can be read from first page to last, and from last page to first) and, in several instances, at the level of character strings (letters and numbers). The axes of symmetry that duplicate those structures operate according to specularity (mirror reflection) and self-similarity.

Besides mirror symmetries, each column provides various combinations of four or three letters. These letters suggest the

1 (+3) = **4** (+2) = **6** (+1) = **7** (+24) = **31** (+3) = **34** (+5) = **39** (+7) = **46** (+5) = **51** (+27) = **78** (+31) = **109** (+11) = **120** (+3) = **123** (+17) = **140** (+36) = **176** (+4) = **180** (+1) = **181** (+1) = **182** (+3) = **185** (+6) **191** (+8) = **199** (+16) = **215** (+10) = **225** (+13) = **238** (+3) = **241** (+5) = **246** (+6) = **252** (+26) = **278** (+5) = **283** (+13) = **296** (+14) = **310** (+1) = **311** (+4) = **315** (+5) = **321** (+1) = **322** (+2) = **324** (+3) = **327** (+3) = **330** (+5) = **335** (+4) = **339** (+14) = **353** (+2) = **355** (+5) = **360**

1 (+5) = **6** (+25) = **31** (+3) = **34** (+5) = **39** (+7) = **46** (+5) = **51** (+27) = **78** (+31) = **109** (+11) = **120** (+3) = **123** (+53) = **176** (+4) **180** (+1) = **181** (+4) = **185** (+53) = **238** (+3) = **241** (+11) = **252** (+31) = **283** (+27) = **310** (+5) = **315** (+7) = **322** (+5) = **327** (+3) = **330** (+25) = **355** (+5) = **360**

5 – 25 – 3 – 5 – 7– 5 – 27 – 31 – 11 – 3 – 53 – 4 – 1 – 4 – 53 – 3 – 11 – 31 – 27 – 5 – 7 – 5 – 3 – 25 – 5

	S	H	
I'll devastate the World.	S1	H1	I'll destroy the World.
I'm The Mountain which / The World climbs down from and / I laugh because it tickles.	S4	H4	I'm The World which the / The Mountain descends from.
Couldn´t care less. I elect to kiss / the World away.	S6	H6	I don't give a shit. I'll nevernomore/ the World with a smooch.
I stand and scorch her falling sky. / I'm her World.	S7	H7	I'm his land torching a broken sky. / I'm his World.
I'm their only World.	S31	H31	I'm their only World.
bewares me to burn / the World quick. /… Because all around me / the World rebegins.	S34	H34	daring me to crisp / the World fast. /…/ Because allways all around me / the World rebegins.
only to avoid breaking her neck, / just, with spastic hand pivots /…/ Around and around.	S39	H39	swirling the World and lifting / the sky, arches uniting /…/ Around and around.
Is it ever too late / to destroy the World?	S46	H46	Though is it ever too late / to destroy the World?
O Lucky World. / My gift.	S51	H51	O Lucky World. / My present.
All mine! / Toetickling digs, I'm so loose for	S78	H78	Move / the World, faster, faster, blast off and boogie.
I shuffle back. Round the World.	S109	H109	I pas de bourrée aside. Fouetté about.
– If it's not this World, / then it's of this World.	S120	H120	*– If it don't pay rent, / kick it out.*
Sticking US again to the World.	S123	H123	Sticking US again to the World.
Wondering too / of a way to continue our blitz from / the impedance of the World.	S140	H140	together wonder / of a way to continue our charge from / the persistence of the World.
The City, Our Mishishishi and US. Just two / for the World.	S176	H176	The City, Our Mishishishi and US. Just two / for the World.
Sticking US together. / Sticking US to the World.	S180	H180	Sticking US together. / Sticking US to the World.
Leaving US to the World.	S181	H181	Leaving US to the World.
– These Worlds of ours.	S182	H182	*– These Worlds of ours.*
Around. / With Hailey of course but also unsure, / exploring a World for just two.	S185	H185	Around. / With Hailey of course but also unsure, / exploring a World for just two.
for a World separated by five tables	S191	H191	for a World separated by five tables
– Out of this World!	S199	H199	*– Going wide!*
– We go to free the World. /…/ – You go to lose the World.	S215	H215	*– We go to free the World. /…/ – You go to lose the World.*
Hailey, all fusion ball,	S225	H225	Sam, all New World Order,
Our Aero Willys / allways easily beating the World.	S238	H238	Our Geo Metro / easily, allways, beating the World.
World's too particular for me.	S241	H241	World's too petulant.
Turns me upside down. And the World. /…/ because she spins the World, she spins me too.	S246	H246	Stands on the wind. Holds the World up. / When I tickle his ribs Adulterers split feering / the World will fall.
The World suddenly revolting.	S252	H252	The World suddenly revolting.
On the World.	S278	H278	On the World.
Ripple discs overturning our countering World /	S283	H283	Revolving rims overturning our countering World /
again and again.			over and over.
By / our Worldturning blur. [Sam, irascible, / wants every turn to take a / turn. H65]	S296	H296	By / our Worldhurling blur. [Still, she's flirty. / Wants at every bend to take a bend. S65]
Our present. / Lucky World.	S310	H310	Our gift. / Lucky World.
The sadness of the World before US / but we are already after US / and sadly passing even US.	S311	H311	The sadness of the World after US / but we are already before US / and sadly surpassing even US.
Because I Love her / and it's never too late to keep a World.	S315	H315	Because I Love him / and it's never too late to keep a World.
Around the World. Over the falls. Yoyo down and up.	S321	H321	Ever around. Over the World. Down, yup and up.
Around and around. / Spinning me from the World.	S322	H322	Around and around. / Spastic grabs for pivots nowhere found.
only with raggy shreds to oppose a World somehow / still ongoing without the wonder of Hailey's grin.	S324	H324	with just a tattered shawl to repel a World somehow / still ongoing without the wonder of Sam's spin.
That terrible haste reeeeending a World.	S327	H327	That frightening pace reending a World.
My only World.	S330	H330	My only World.
So hacked and roped by this savage World.	S335	H335	Still harnessed to this toothy World.
Hair a thistle of icicles reaching / down to The Mountain of World.	S339	H339	Hands a claw of icicles curving / down to The Mountain of World.
Because my World's urgings over earth's want / pours from this mortal work.	S353	H353	Because by earth's urgings over World's want / all's gathered up from the partial labor of / value and need.
For him / the World spins and to blow it away / would forfeit all the World allready Loves of him.	S355	H355	For her / the World turns and to blow it away / would forfeit all the World allready Loves of her.
By you, ever sixteen, this World's preserved. / By you, ever sixteen, this World has everything to lose. /…/ I'll destroy no World.	S360	H360	By you, ever sixteen, this World's reserved. By you, ever sixteen, this World has everything to lose. /…/ I'll destroy no World.
	S	H	

Table 8. 'I'll destroy the World' // 'I'll destroy no World': 'World' x 90. Number sequence: 12-1-1-12.
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hH	dates	numerical intervals between dates		dates	hS
H1	Nov 22 1963	+ 1	0 +	Nov 22 1963	S360
H2	Nov 23 1963	+ 1	1 +	Nov 21 1963	S359
H3	Nov 24 1963	+ 1	2 +	Nov 19 1963	S358
H4	Nov 25 1963	+ 3	2 +	Nov 17 1963	S357
H5	Nov 28 1963	+ 3	3 +	Nov 14 1963	S356
H6	Dec 1 1963	+ 4	4 +	Nov 10 1963	S355
H7	Dec 5 1963	+ 4	5 +	Nov 5 1963	S354
H8	Dec 9 1963	+ 5	4 +	Nov 1 1963	S353
H9	Dec 14 1963	+ 5	7 +	Oct 25 1963	S352
H10	Dec 19 1963	+ 8	7 +	Oct 18 1963	S351
H11	Dec 27 1963	+ 7	6 +	Oct 12 1963	S350
H12	Jan 3 1964	+ 8	8 +	Oct 4 1963	S349
H13	Jan 11 1964	+ 9	7 +	Sept 27 1963	S348
H14	Jan 20 1964	+ 9	11 +	Sept 16 1963	S347
H15	Jan 29 1964	+ 9	10 +	Sept 6 1963	S346
H16	Feb 7 1964	+ 12	10 +	Aug 27 1963	S345
H17	Feb 19 1964 [l.y.]	+ 13	13 +	Aug 14 1963	S344
H18	March 3 1964	+ 11	12 +	Aug 2 1963	S343
H19	March 14 1964	+ 13	13 +	July 20 1963	S342
H20	March 27 1964	+ 15	14 +	July 6 1963	S341
H21	April 11 1964	+ 13	15 +	June 21 1963	S340
H22	April 24 1964	+ 17	13 +	June 8 1963	S339
H23	May 11 1964	+ 15	17 +	May 22 1963	S338
H24	May 26 1964	+ 16	16 +	May 6 1963	S337
H25	June 11 1964	+ 17	17 +	April 19 1963	S336
H26	June 28 1964	+ 17	18 +	April 1 1963	S335
H27	July 15 1964	+ 20	14 +	March 18 1963	S334
H28	Aug 4 1964	+ 18	24 +	Feb 22 1963	S333
H29	Aug 22 1964	+ 19	20 +	Feb 2 1963	S332
H30	Sept 10 1964	+ 24	21 +	Jan 12 1963	S331
H31	Oct 4 1964	+ 19	20 +	Dec 23 1962	S330
H32	Oct 23 1964	+ 27	24 +	Nov 29 1962	S329
H33	Nov 19 1964	+ 18	32 +	Oct 28 1962	S328
H34	Dec 7 1964	+ 25	17 +	Oct 11 1962	S327
H35	Jan 1 1965	+ 25	17 +	Sept 24 1962	S326
H36	Jan 26 1965	+ 25	29 +	Aug 26 1962	S325
H37	Fev 20 1965	+ 24	25 +	Aug 1 1962	S324
H38	March 16 1965	+ 26	29 +	July 3 1962	S323
H39	April 11 1965	+ 27	30 +	June 3 1962	S322
H40	May 8 1965	+ 30	24 +	May 10 1962	S321
H41	June 7 1965	+ 31	31 +	April 9 1962	S320
H42	July 8 1965	+ 27	35 +	March 5 1962	S319
H43	Aug 4 1965	+ 28	29 +	Feb 4 1962	S318
H44	Sept 1 1965	+ 32	22 +	Jan 13 1962	S317
H45	Oct 3 1965	+ 30	29 +	Dec 15 1961	S316
H46	Nov 2 1965	+ 35	36 +	Nov 9 1961	S315
H47	Dec 7 1965	+ 30	31 +	Oct 9 1961	S314
H48	Jan 6 1966	+ 35	34 +	Sept 5 1961	S313
H49	Feb 10 1966	+ 33	35 +	Aug 1 1961	S312
H50	March 15 1966	+ 34	39 +	June 23 1961	S311
H51	April 18 1966	+ 37	34 +	May 20 1961	S310
H52	May 25 1966	+ 35	36 +	April 14 1961	S309
H53	June 29 1966	+ 38	35 +	March 12 1961	S308
H54	Aug 6 1966	+ 36	40 +	Jan 31 1961	S307
H55	Sept 11 1966	+ 38	29 +	Jan 2 1961	S306
H56	Oct 19 1966	+ 42	48 +	Nov 15 1960	S305
H57	Nov 30 1966	+ 39	39 +	Oct 7 1960	S304
H58	Jan 8 1967	+ 44	47 +	Aug 21 1960	S303
H59	Feb 21 1967	+ 40	37 +	Jul 15 1960	S302
H60	April 2 1967	+ 39	53 +	May 23 1960	S301
H61	May 11 1967	+ 43	34 +	April 19 1960	S300
H62	June 23 1967	+ 44	49 +	March 1 1960	S299
H63	Aug 6 1967	+ 43	32 +	[l.y.] Jan 29 1960	S298
H64	Sept 18 1967	+ 48	40 +	Dec 20 1959	S297
H65	Nov 5 1967	+ 45	60 +	Oct 21 1959	S296
H66	Dec 20 1967	+ 45	52 +	Sept 4 1959	S295
H67	Feb 3 1968 [l.y.]	+ 48	48 +	July 18 1959	S294
H68	March 22 1968	+ 45	37 +	June 11 1959	S293
H69	May 6 1968	+ 49	47 +	April 25 1959	S292
H70	June 24 1968	+ 49	52 +	March 4 1959	S291
H71	Aug 12 1968	+ 50	49 +	Jan 14 1959	S290
H72	Oct 1 1968	+ 53	51 +	Nov 24 1958	S289
H73	Nov 23 1968	+ 40	43 +	Oct 12 1958	S288
H74	Jan 2 1969	…	…	…	…
…	…	…	…	…	…
hH	**dates**	**numerical intervals between dates**		**dates**	**hS**
…	…	…	…	…	…
…	…	…	…	July 8 1871	S10
H352	April 27 2056 [l.y]	+ 307	+ 310	Sept 1 1870	S9
H353	Feb 28 2057	+ 307	+ 292	Nov 13 1869	S8
H354	Jan 1 2058	+ 308	+ 317	Jan 1 1869	S7
H355	Nov 4 2058	+ 307	+ 302	[l.y] March 5 1868	S6
H356	Sept 7 2059	+ 307	+ 330	April 9 1867	S5
H357	July 10 2060 [l.y]	+ 308	+ 306	June 7 1866	S4
H358	May 14 2061	+ 307	+ 299	Aug 12 1865	S3
H359	March 17 2062	+ 308	+ 319	[l.y] Sept 27 1864	S2
H360	Jan 19 2063	+ 0	+ 310	Nov 22 1863	S1

Table 9. Consecutive dates in the history column, listing numerical intervals between any two consecutive dates [pages hH1//hS360 to hH73//hS288, and hH352//hS9 to hH360//hS1].
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