

Hack\_the\_Bells Competition 2014

Artist/Composer: Daniel Rothman

Title: **One<sup>61</sup>**

Concept: New Medi(ev)a(1)

A new media approach to a medieval instrument suggests not only its sonic characteristics but time, itself. Time that measures the duration of human events through its activities, its instruments, and its institutions; it suggests the dimension of human time. And while the longest existing continuous musical performance may be the Lieber Ususalis, sung daily by monastery monks, it has a parallel in the carillon's history and function.

My work **One<sup>61</sup>** for the 61-bell Sather Tower carillon at UC Berkeley (named in honor of John Cage's One<sup>6</sup>), honors universities as the foundation for perpetual human existence (e.g. Isaac Asimov's Foundation series). Thus, the number of possibilities of 61 bells, in all combinations from 2 to 61, to be performed, are:

1. 61
2. 1830
3. 35990
4. 521855
5. 5949147
6. 55525372
7. 436270780
8. 2944827765
9. 17341763505
10. 90177170226
11. 418094152866
12. 1742058970275
13. 6566222272575
14. 22512762077400
15. 70539987842520
16. 202802465047245
17. 536830054536825
18. 1312251244423350
19. 2969831763694950
20. 6236646703759395
21. 12176310231149295
22. 22138745874816900
23. 37539612570341700
24. 59437719903041025
25. 87967825456500717
26. 121801604478231762
27. 157890968768078210
28. 191724747789809255
29. 218169540588403635
30. 232714176627630544
31. 232714176627630544
32. 218169540588403635
33. 191724747789809255
34. 157890968768078210
35. 121801604478231762

36. 87967825456500717  
37. 59437719903041025  
38. 37539612570341700  
39. 22138745874816900  
40. 12176310231149295  
41. 6236646703759395  
42. 2969831763694950  
43. 1312251244423350  
44. 536830054536825  
45. 202802465047245  
46. 70539987842520  
47. 22512762077400  
48. 6566222272575  
49. 1742058970275  
50. 418094152866  
51. 90177170226  
52. 17341763505  
53. 2944827765  
54. 436270780  
55. 55525372  
56. 5949147  
57. 521855  
58. 35990  
59. 1830  
60. 61  
61. 1

Its performance reflects the nature of new media to automate, thereby control aspects of human activity which can be routine or ritualized. The very length of such a performance, projected long beyond human lifetimes, summons the sublime, its capacity for terror and awe. Therefore the dual nature of new media and its relevance to our medieval legacy resides in both mystery and the infinite.

Performance:

A cursory examination of the numbers above reveals a sequence that reverses itself after combinations of 30. If any compositional choices may be made at all, the algorithm can perform half the number of combinations during part 1 (1-30) and the remaining half during part 2 (31-61).

I propose that **One<sup>61</sup>** is performed in fragments: as softly as possible, one sequence at a time at the arbitrary hour of 13 minutes after noon, over a duration of 61 seconds (regardless of the number of tones in the sequence), until all the combinations are exhausted.

Its randomness (except for the aforementioned division of the list) symbolizes the unpredictability of world events, but its regularity hope and perseverance for all time.

Performances may be live by carillonneurs informed in advance of the computation indicating the combination to be played, or automated.

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