

Reading Potential: The Oulipo and the Meaning of Algorithms

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Recent efforts to reconceptualize text analysis with computers in order to broaden the appeal of humanities computing have invoked the example of the Oulipo, a group of writers in France that invent 'potential' ways to create literature using rigorous formal constraints. Rejecting the practice of using computers as tools for objective, empirical research with texts, Stephen Ramsay envisions an algorithmic criticism that transforms texts for "the purpose of releasing what the Oulipians would call their 'potentialities'" (Ramsay 172). Stéfan Sinclair has developed HyperPo as a web-based tool for helping scholars read and play with texts using procedures inspired by the Oulipo. The idea of playing with texts using computers is pursued further by Geoffrey Rockwell who calls for the creation of web-based playpens where scholars can experiment with tools and discover the potentialities inherent in the practice of humanities computing.

Although there are similarities between the activities of the Oulipo and the new approach to computer-assisted literary analysis, the development of tools for the express purpose of encouraging scholars outside of humanities computing to play with texts does not follow the model of Oulipian research into potentialities. For the Oulipo, the invention of procedures for playing with texts is not necessarily a means to greater engagement with literature: it is its own end, an intellectual activity that invites application but does not require adoption by others as an indication of success. According to Raymond Queneau, one of the founding members of the Oulipo and author of the *Cent mille milliards de poèmes*,

The word 'potential' concerns the very nature of literature; that is, fundamentally it's less a question of literature strictly speaking than of supplying forms for the good use one can make of literature. We call potential literature the search for new forms and structures that may be used by writers in any way they see fit.

(Oulipo 1986, 38)

Queneau makes it clear that what the Oulipo does relates to but does not constitute literary creation. Writing is a derivative activity: the Oulipo pursue what we might call speculative or theoretical literature and leave the application of the constraints to practitioners who may (or may not) find their procedures useful. According to François Le Lionnais, another founding member, a method for writing literature need not produce an

actual text: "method is sufficient in and of itself. There are methods without textual examples. An example is an additional pleasure for the author and the reader" (Bens 81, my translation).

The Oulipo did not articulate a clear statement explaining potential methods for reading literature, but we can extrapolate a definition from how they described their efforts to invent methods for writing literature. *Potential text analysis is less a question of interpreting literature than of supplying algorithms for the good use one can make of reading. Producing exemplary interpretations with algorithms is a secondary consideration.* It follows that the interpretation of texts using a computer should not be in and of itself the objective of the new computer-assisted text analysis. The objective should be the invention of algorithms that scholars may (or may not) use, according to their own interests. The potentiality (as opposed to the reality) of computers as tools for text analysis implies that scholars engaged in the derivative activity of interpreting literature may not find such methods useful.

When the Oulipo formed in 1960, one of the first things they discussed was using computers to read and write literature. They communicated regularly with Dmitri Starynkevitch, a computer programmer who helped develop the IBM SEA CAB 500 computer. The relatively small size and low cost of the SEA CAB 500 along with its high-level programming language PAF (Programmation Automatique des Formules) provided the Oulipo with a precursor to the personal computer. Starynkevitch presented the Oulipo with an "imaginary" telephone directory composed of realistic names and numbers generated by his computer. He also programmed the machine to compose sonnets from Queneau's *Cent mille milliards de poèmes*. In both cases the Oulipo was impressed but did not believe these computer applications had 'potential'. What worried the Oulipo was the aleatory nature of computer-assisted artistic creation: they sought to avoid chance and automatism over which the computer user had no control (Bens 147-148). In 1981 the Oulipo published *Atlas de littérature potential* where they described some of the computer applications they devised for reading literature. Their early experiments included machine-assisted readings of the *Cent mille milliards de poèmes* and Queneau's *Un conte à votre façon*. The algorithms used to read these texts provided a certain degree of interaction between the user and the machine but did not reveal unforeseen potentialities. Some members of the Oulipo formed *ARTA (Atelier de Recherches et Techniques Avancées)* and *ALAMO (Atelier de Littérature Assistée par la Mathématique et les Ordinateurs)* to explore computer-assisted writing, but the Oulipo itself has not further pursued methods for reading texts with machines.

This is not to say the Oulipo abandoned the idea of potentialities in reading. There are at least two examples of original algorithms developed by Oulipians for reading texts. The first is Harry Mathews's Algorithm, which consists of combinatoric operations

over a set of structurally similar but thematically heterogeneous texts. These operations generalize the structure of the *Cent mille milliards de poèmes* and allow for the production of new texts. Mathews notes that the algorithm works not only with letters, words and phrases but with entire works, entire oeuvres, entire literatures, entire worlds. Creating a computer program based on this algorithm (<http://bumppo.hartwick.edu/Oulipo/Mathews.php>) is relatively simple, but its interest does not lie in its application. According to Mathews, the aim of the algorithm "is not to liberate potentiality but to coerce it" (Oulipo 1986, 139). A 'new' reading of a text (or a reading of a 'new' text) through the algorithm is not the objective. The use of the algorithm is meaningful in that the apparent unity of texts can be dismantled by the algorithm and give way to a multiplicity of meanings. Mathews invented a system of constraints that illustrates what deconstructionists have maintained for decades.

The second example is Raymond Queneau's matrix analysis of language, published in *Etudes de linguistique appliquée* and discussed at length during one of the Oulipo's early gatherings. Using principles of linear algebra, Queneau devised a mathematics of the French language that could describe the structure of texts and provide statistical "indices of an author's style that may be interesting, for they escape the conscious control of the writer and doubtless depend on several hidden parameters" (Queneau 319, my translation). Queneau himself provided analyses of a number of short sample texts. His ability to apply the algorithm to lengthy texts was limited, however, because he did his calculations 'by hand': he did not use a computer. With the availability of part-of-speech taggers such as Helmut Schmid's *TreeTagger*, it is easy to use a computer to perform a matrix analysis of any text written in French (<http://bumppo.hartwick.edu/Oulipo/Matrix.html>). Matrix analysis may prove useful for authorship attribution in combination with other techniques, such as the use of Markov chains proposed by Khmelev and Tweedie. Queneau, however, expressed greater interest in the algorithm's mathematical properties: he proved several theorems on the behavior of matrices and identified similarities between them and the Fibonacci series. The members of the Oulipo were intrigued by matrix analysis but looked forward to the creation of poems written in columns and rows rather than the transformation of existing poems into matrices (Bens 236-237).

Mathews and Queneau offer two algorithms we can operationalize with computers for literary analysis, but the interest of the algorithms lies not in what they help us see in a given text but in the way they invite us to play rigorously for play's sake. Oulipian constraints on reading are better understood as toys with no intended purpose rather than as tools we use with some objective in mind. These procedures for making sense of texts provide for their own interpretation: they are not instruments for meaning but reflections on meaning itself.

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