Lessness: Randomness, Consciousness and Meaning

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Abstract. *Lessness* is a prose piece by Samuel Beckett in which he used random permutation to order sentences. Like interactive artworks, the piece is experienced as a process that depends upon the participant's attempts to comprehend and create meaning. Although *Lessness* is linear prose, its orderly disorder sets up a non-linear reading process in which contradictory perspectives are viewed simultaneously. The piece comprises two of the approximately 8.3 $\times 10^{81}$ possible orderings of Beckett's 60 sentences. The authors have developed a web site that generates versions of *Lessness*, exploring the effects of the capabilities of computing in the creation and exploration of art.

Keywords: chaos, randomness, Samuel Beckett, postmodern fiction, permutation, consciousness

Introduction

Whether we are aware of it or not, a function of our minds is to take in chaotic sensory input and discern patterns in it from which meaning can be derived. Art takes place in the space between raw perception and automatic interpretation and wakes us to fresh ways of seeing. As beauty is in the eye of the beholder, meaning is produced by the one who perceives, although under the guidance of

clues embedded in the work (Iser 1989). The interaction between the reader and the literary work is prompted and maintained by successive gaps or incongruities in the narrative structure which make interpretation necessary and grant the space in which to interpret the relation of the elements in the work. Artworks constructed to reflect focus back on the role of the viewer in making meaning in the work and the world allow the reader to experience her non-conscious processes of understanding. Many of Samuel Beckett's literary artworks are engineered to make their readers aware of their own interpretive strategies and the extent to which all art is essentially interactive.

This paper is based on *Lessness*, an innovative piece of prose that Becke tt reportedly composed using an aleatoric method to arrange the sentences.[1] The sense of patterning in the chaotic sequence of sentences entices the reader to untangle the random arrangement and attempt to piece together an elusive storyline from a series of contradictory echoes. The complex contradictions prompt a need for reconciliation and direct focus away from the text itself towards the reader's efforts of forming a satisfactory interpretation. The fact that the published version of *Lessness* is one of the approximately 1.9×10^{176} possible versions of the text indicates the underlying complexity of this four-page text and implies that the actual is a simplified subset of the infinity of possibilities. The 'Variations on *Lessness*' web site in effect serves up all those possible versions in succession, actually manifesting what was possible.[2] Although one could rightly argue that the world does not need all of the versions of this obscure text, the fact that they can now be generated one at a time with a click of a mouse signifies the counterintuitive challenges imposed by the use of computational power in art.

Lessness and the Stream of Unconsciousness

Lessness depicts a small grey upright body standing among the ruins of a refuge in an endless grey expanse. There are memories of a past which are denied or effaced, and declarations of a future which are strongly asserted. The reader is presented with a series of sentences that – although highly resonant due to the dense repetition of phonemes, rhythms, words and phrases – have no logical relation that explains the progression from one sentence to the next. The following excerpt, the first paragraph of the piece, is given here to exemplify the sense of order in chaos in the piece:

> Ruins true refuge long last towards which so many false time out of
> mind. All sides endlessness earth sky as one no sound no stir. Grey

face two pale blue little body heart beating only upright. Blacked out fallen open four walls over backwards true refuge issueless (I).[3]

Lessness is a precisely calibrated expression of indeterminacy. Although some textual analyses have raised doubts about the extent to which the organisation of the composition relies upon pure chance, most critics accept that there is a limited element of chance in the composition method of this highly structured work. According to the account Beckett gave to Ruby Cohn as well as his 'key' to the work and the manuscript materials, the arrangement of the 60 sentences, 'first in one disorder, then in another,'[4] and their division into paragraphs of three to seven sentences appear to have been achieved by employing randomness.   By Ruby Cohn's account,

> He wrote his sixty different sentences in six families, each family arising from an image. Beckett wrote each of these sixty sentences on a separate piece of paper, mixed them all in a container, and then drew them out in random order twice. This became the order of the hundred twenty sentences in *Sans*. Beckett then wrote the number 3 on four separate pieces of paper, the number 4 on six pieces of paper, the number 5 on four pieces, the number 6 on six pieces, and the number 7 on four pieces of paper. Again drawing randomly, he ordered the sentences into paragraphs according to the number drawn, finally totalling one hundred twenty (Cohn 1973).

Beckett told Cohn that this aleatory method was 'the only honest thing to do' (Cohn 1973). Indeed, whether Beckett shaped the flow of the work or whether the ordering of the sentences is actually random is less significant than the appearance of randomness. The absence of an obvious determinism guiding the flow provides a gap in understanding that spurs the reader's interaction with the piece. According to Wolfgang Iser, 'the blank in the fictional text induces and guides the reader's constitutive activity. As a suspension of connectability between textual perspective and perspective segments, it marks the need for an equivalence' (1974).

Like Beckett's 1972 play *Not I*, *Lessness* works on the nerves rather than the intellect of its readers (Beckett 1986). It is a piece that seems on many counts to fulfil Samuel Beckett's ideal of 'accommodating the chaos' of consciousness in linguistic form. Random numbers are irreducible to simpler forms. They are rich in information because it requires many bits in order to communicate them. The succession of sentences in *Lessness* is rich in information because as far as anyone is aware, it is not possible to predict the next sentence in the sequence.

(Irreducibility in the piece is also reflected in the interesting fact that each half of the piece contains exactly 769 words. 769 is a prime number.[5]) There are certain rules that seem to govern the arrangement of phrases within sentences. For example, in sentence family 4, 'all gone from mind' appears at the end of each sentence. Furthermore, the pronounced aural patterning alludes to an ordering principle within the aleatory sequence of sentences. Meaning emerges in the perceived space between order and randomness, and is derived from the work the reader does in sorting through the randomness and patterns in the text: 'Complexity or meaning is a measure of the production process rather than the product, the work time rather than the work result. The information discarded rather than the information remaining' (Nørretranders 1998). Of course Beckett also put work into creating the complexity of *Lessness*, but his work is only half the story. Like many works in new media, *Lessness,* when constituted by the reader's attempts to unravel it, represents an art process rather than an art object. Beckett composed it to be 'decomposed' by the reader's activity of creating meaning, and the piece only really comes into play in the process of decomposition.

The structure of the piece works like a prism, refracting consciousness into six perspectives that the reader perceives simultaneously as the narrating voice struggles with internal contradictions created by multiple angles of perception.

> Never but dream the days and nights made of dreams of other nights
> better days. He will live again the space of a step it will be day and
> night again over him the endlessness (VII).

In this passage the denial that diurnal cycles every existed is juxtaposed with the assertion that they will exist again as they once did. This contradiction sets stasis, or degeneration against continual regeneration, a conflict based upon thermodynamic irreversibility versus Newtonian balance. 'But then thermodynamics ends in the heat death of the universe: Everything is heading for gray on gray and a huge mass of entropy' (Nørretranders 1998). There is an obvious correlation between this description and the setting of *Lessness*, but at the same time as the scene is heading irrevocably toward sameness and stasis, there is the promise that life will emerge again, that 'unhappiness will reign again.'

The attention of a reader confronting *Lessness* is frequently drawn away from the text to his own attempts to comprehend it. Through interacting with this text, the reader becomes consciously aware of the usually unconscious processes of perception, pattern recognition and interpretation. Hugh Culik (1993) links the challenge posed by irrational numbers to the Pythagorean paradigm to Beckett's

attempt to express the unconscious elements of the self in literary form: 'the self exists only as a series of discrete moments, its continuity interrupted as surely as the flow of rational numbers seemed interrupted by irrational numbers.'

Beckett's formula generates practically endless variations from a very limited set of inputs; the vocabulary of the 1538-word piece is limited to '166 distinct lexical items' (Coetzee 1973). Some critics infer that Beckett's compositional method implies that any of the possible re-orderings of the text are equally valid as the published version. There is an important distinction to make however, between all the possible Lessnesses and the one that Beckett released: the published version relates to the actual, while the others remained (until recently) beyond realization. This is not to say that the published version is somehow more valuable than the potential ones, for as Beckett himself once put it, 'Two birds in the bush are of infinitely greater value than one in the hand' (1931). Gabriel Motzkin explains this curious value placed on the potential over the actual in Heideggerian terms:

> The realization of the possible is, as thing-in-itself, a restriction of the universe of the possible. Each determination is a negation, but a negation not of the actual, but rather of the totality of the possible. Each entity is thus revealed as being by its very nature insufficient or deficient. It is deficient, however, not in relation to a plenitude of being, but rather in relation to a surplus of possibilities (Motzkin 1989).

In *Lessness*, the 'totality of the possible' provides the context for the actual piece. The piece as it exists id set against all the other potential versions of the work.

Variations on *Lessness*

The 'Variations on *Lessness*' project, a web site developed by Mads Haahr, links *Lessness* to his true random number service www.random.org to render other possible orderings according to Beckett's rules.[6] The random numbers used in most computer programs are produced deterministically via algorithms called pseudo-random number generators (PRNGs). Another type of random number generator is true random number generators (TRNGs) which rely on a physical source of entropy outside the computer, such as atmospheric noise or radioactive decay. What separates the two approaches is determinacy. Whereas the best PRNGs produce numbers that are virtually indistinguishable from those generated by TRNGs, any string of numbers produced by the former is essentially

predetermined and can be replayed given the starting conditions. The randomness generated by TRNGs originate in physical processes and are akin to physically rolling a dice, spinning a roulette wheel or drawing tickets out of a hat. A string of numbers generated by such processes cannot be reconstructed because it depends on physical processes that we cannot simulate. Whether this is because the physical processes themselves are non-deterministic or because the full set of starting conditions is unknown is a philosophical question beyond the scope of this paper.

The random numbers used in the 'Variations on *Lessness*' project are generated with atmospheric noise. A radio receiver is tuned into a frequency where nobody is broadcasting and the signal fed into a computer. A computer program analyses the signal and extracts little variations in the signal's amplitude. These variations are gathered to form an endless stream of bits: 0110001010110011... Next, the stream is processed in order to correct for any skew towards 0 or 1 in the data, i.e., to insure an approximately even distribution of 0s and 1s. The skew-corrected bit stream forms a basic form of randomness that can be processed into more useful forms, such as randomised sequences or random integers within configurable intervals.

A randomised sequence consists of all integers in a given interval arranged in a random order. As opposed to a list of random integers, each integer in a randomised sequence occurs only once. Generating a randomised sequence is comparable to drawing lottery tickets out of a hat. A randomised sequence can be generated using a list of random integers by assigning a random integer to each number in the sequence (forming a set of key-value pairs) and then sorting the pairs according to the assigned random values. In case duplicate random integers were picked, the procedure has to be repeated for those pairs, because the order in which they would occur would otherwise depend on the semantics of the sorting algorithm.

The computer program that implements 'Variations on *Lessness'* uses a random sequence of size 60 to simulate the process used by Beckett to determine the order of the sentences. Each sentence composed by Beckett is assigned a number between 1-60, and a randomised sequence is produced using the method described above. This determines the order of the sentences. Next, a sequence of size 12 is constructed and the values 3, 3, 4, 4, 4, 5, 5, 6, 6, 6, 7, 7 (corresponding to the lengths of the paragraphs as decided by Beckett) are associated with the numbers in the sequence. This sequence is then randomised, yielding the paragraph boundaries for the first half (12 paragraphs, 60 sentences) of the piece. The entire procedure is repeated to yield the latter half.

This system is designed as a research tool to allow researchers to trace the shifts in the patterns of the text in alternative orderings of Beckett's sentences. The site also calls into play in a palpable way the human orientation towards possibilities over the actual.

Notes

[1] Beckett published the French original *Sans* in 1969. His English translation of the piece, *Lessness*, appeared in 1970.

[2] 'Variations on *Lessness*' is not currently available over the Internet due to copywrite considerations.

[3] Quotations from *Lessness* are referenced parenthetically by paragraph.

[4] Beckett on the dustcover of the 1970 Calder & Boyars edition of *Lessness* according to Pilling (1979).

[5] This observation was made by computer scientist and mathematician Mícheál Mac an Airchinnigh in 2001.

[6] The random number service described here is generally available free of charge at www.random.org

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