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Poetry as a Complex System

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Acknowledgements

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Introduction

Words, words, words.

This thesis is about complexity, and in particular, complexity as a standard by which we assess the quality of artistic endeavor. While I will not try to prove this point, it will be the working assumption that great artistic achievement requires the reader's or listener's or viewer's understanding or intuition of the complexity of the particular art-object. This is so whether that complexity is measured in strictly formal, technical terms, conceptual terms or even emotional terms. In short, works that last, works that matter, last and matter because of some sort of complexity embedded within their artistic design. In exploring this idea, my thesis will focus on examples of lyric poetry. I take as an axiom that successful lyric poetry is in one way or another *complex*. Conversely (though this will not be my main focus in this thesis) less successful poems are less complex and so elicit "less" from their readers: less emotional or critical response, less engagement, less meaning.

This thesis seeks to explore the apparent relationships between poetry and complexity, with a particular attempt to elucidate parallels between poetic studies and concepts of the recent mathematical discipline of Complex Systems. It details my progress and learning experience in reading work from both literary and complex-systems authors, as well as interdisciplinary texts from artistic and mathematical theorists. It offers both critiques and laudations, asks questions where there are obvious gaps in information, and seeks to answer whether or not Complex Systems research can offer poetics anything, or, conversely, if poetics can benefit Complex Systems in any way.

My intention to pursue this project has always had a rather pure origin: my dual love of poetry and mathematics. In my search to learn as much as I could about both, the

field of Complex Systems presented itself to me as a branch of mathematics that would be widely applicable to my other passion, poetry and literary analysis. Primarily, Complex Systems has offered me the most obvious bridge into complexity theory and mathematics at large because it is essentially non-reductive. Instead, the discipline originated with the intentions of study large-scale collective behavior (a branch of applied mathematics as opposed to pure mathematics).

The main components of a complex system I have found in my research— emergence, self-similarity, and chaotic and nonlinear behavior—lend themselves almost immediately to poetic analysis primarily because they are concepts that have already been used, usually in metaphorical or analogous ways, in literary fields. This thesis examines if the vocabulary occasionally borrowed from mathematics has benefitted poetic analysis (as literary scholars are always compiling concepts from other disciplines) or if the ideas as they are presented in theoretical mathematics can be used more effectively with more explicit definition.

But perhaps I do the Humanities an injustice here by implying that these disciplines need anything—they don't. There is no call for help from English departments or deep methodical self-questioning going on in Classics classrooms. But there *are* many calls for inter- and trans-disciplinary research from within the Humanities. These calls are due in part, no doubt, to the fact that the Humanities are already so broad: English professors habitually read texts by sociologists, psychologists, and political theorists; field studies in anthropology and religion often go hand in hand and can inform each other. Of course, Humanities disciplines do not want to be turned into outposts of the sciences, so the more modest question in this thesis is whether complex systems can offer any new way of understanding *poetic complexity*.[1] My underlying goal in this thesis is to appreciate the complexities of lyric poetry and understand how poetry functions aesthetically.

In essence, literary critics have always recognized and appreciated complexity in successful lyric poetry; otherwise, there would be no discussion, and many of those poems would be understandably forgotten. We do not have much to say about the poems

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[1] If there is no plea to disband the established disciplinary boundaries, and perhaps reevaluate the importance of complexity, why pursue it? My answer is that poetry as a complex system has not previously been explored; how can we write off the results we do not have? We don't know what we could be missing.

we "completely understand" upon first reading. But we continue to wrestle and re-wrestle with great poems like Keats' "Ode to a Nightingale" and Eliot's "The Love Song of J. Alfred Prufrock" and Blake's "The Tiger" because they offer endless interpretation, commentary, and depth of meaning. The Greats are great because they mean different things at different points in one's life and because there are myriad, at times competing or complicating, levels of meaning within a (sometimes very small) body of text. Exceptional poems contain surprise, intricacy, and even paradox, and they provoke powerful emotional and intellectual reactions in some readers. Individual poems achieve reactions through use of form, meter, diction, image, subject matter, metaphor, or some combination of techniques. This thesis explores all these characteristics in poetry and discusses how they exhibit and contain complexity.

It is worth digressing for a moment to identify the difference between 'complicated' and 'complex.' The distinguishing factor between the two notions is that if a system, "despite the fact that it may consist of a huge number of components," can be described in terms of its constituent parts, it is merely 'complicated.' By contrast, a complex system cannot be understood simply by analyzing the system's components; the interactions between the individual parts and between the parts and the environment are of a different nature. The interactions can result in what are referred to as "emergent" properties: any "unique property that emerges when component objects are joined together in constraining relations to construct a higher-level aggregate object, a novel property that unpredictably comes from a combination of multiple simpler constituents."[2] The term and concept of emergence will be useful for poetic analysis as this thesis progresses. Complex problems and systems require a synthetic methodology to study properly, from the top down, as opposed to the more traditionally scientific analytic approach. Complex Systems was "born out of a desire to understand collective behavior, which is a very mathematical endeavor," but, as is usually the case, understanding collective behavior (whether in a group, a traffic pattern, or an ecosystem) is messier in the real world than in a diagram or on a computer.[3] This "messiness" is found in poetry, too: the more one digs into both the small-scale and collective meaning of a poem (the

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[2] Adefinition from Dictionary.com, LLC.
[3] Interview with Chris Danforth (email). March 2014.

relation of parts to the whole within a single system), the greater the length—and depth—of the analysis, and the more reward from the attempt to understand the lyric.

Thus the very approaches to research in complex systems offer a parallel with poetic analysis; because individual words and phrases must be understood as small pieces of 'collective behavior' of the poem, critics must therefore pay close attention to both the miniscule techniques and the overarching effect of the poem. There are plenty of examples of messy, and complicated, poetry that's difficult to read—rather like untangling knots in thread—and does not reward the reader with an output expected from so much effort and input. There are also "simple" poems that are complex—many excellent ones, in fact, that offer huge depth of meaning—as well as complicated poetry that is also complex. These descriptions open the door to what one means by poetic *complexity*, for, if a poem can be complicated, but not complex, where does the complexity arise? Similarly, in what ways can a very simple (i.e. the opposite of complicated) poem be extremely complex, and where does *that* complexity arise? In this thesis, by way of examples of poems, I will investigate these questions.

As a discipline, Complex Systems has only recently gained popular attention and garnered institutional support. Most departments pull from a variety of other pre-established divisions—most commonly computer science, biology, and mathematics. The field—though still in the process of defining itself—is a hybrid of chaos theory, information theory, game theory, non-linear dynamics, and statistical physics. For me, the growth of Complex Systems research is extremely exciting because I've always found the most inspiring aspects of academia to be its interdisciplinary possibilities, the way research focuses one towards knowledge that is shared between fields, the ideas that parallel each other in traditionally disparate disciplines, and classes that, though separate, feed in to one another and inform each other. Some fields are naturally encouraging of multiple epistemologies, like cognitive science (a blending of biology and psychology) or political science (a dance of history, philosophy, and current events). Cross-disciplinary thinking provides opportunity for people to learn in new ways and for traversing the gap between the sciences and the humanities.

In this thesis, I do not attempt to answer whether or not individual lyric poems are complex systems, nor do I particularly *try* to bridge the aforementioned disciplinary gap.

I do not even attempt to explain what makes a poem good (to do so would force me into dialogue with aesthetic philosophy). For the purpose of this thesis, I accept the collective judgment of literary history; the poems I chose to discuss are great poems and have been recognized as such. I will work off the assumption that their enduring quality derives largely from their complexity, and then I will document how the use of complex systems can help us understand just where that lyric complexity derives from or how it is manifested in the poems I chose. What I intend to emphasize are the constant presences of certain types of complexity and properties of complex systems and point out the parallels between fields.

It's worth mentioning, finally, that this project began with rather different intentions. I set out expecting to be able to immediately define several organizing characteristics of complex systems and then analyze individual lyric poems using those characteristics. I hoped to isolate mathematical properties that could be directly melded with poetic analysis, and I hoped to have time (and resources) to investigate several poems by counting words, stresses, parts of speech, and so forth. I thought that the field of the literature of science would be a hotbed for topics similar to mine.

But all research comes, as I have learned, with as many strange curves as one can comprehend; for the purposes of an undergraduate thesis, I aimed too high, and far beyond the scope of a year-long project. What I now hope to show is the progress I have made in isolating (a) what was wrong with my initial intentions and (b) what sort of valuable insights complex systems philosophies and vocabulary *can* offer poetic analysis, both in terms of analogy and metaphor, and perhaps, in the future, for non-reductive but still quantitative analysis. This thesis follows, in part, an autobiographical journey through poetry, math, and my own reactions to the strong points and failings of what I read. I have made little attempt to "prove" that good poetry is complex, but that is undoubtedly the critical point upon which my interests stand.

Chapter One:

Background

Part One:

Complexity and Complex Systems

Before I use the terms 'complexity' and 'complex system' too many times, let me define them. In his clear and insightful textbook <u>Introduction to Complexity and Complex Systems</u>, Robert B. Northrop defines a system as "a group of interacting, interrelated, or interdependent elements (also agents, entities, parts, states) forming or regarded as forming a collective entity."[4] This definition is broad enough to encompass most examples we might immediately think of: the brain, a book, the internet, our own dear Milky Way galaxy. Systems can then be described in terms of their environment, their boundaries, their type (physical or abstract, open or closed, formal or informal), their behavior (linear, nonlinear; simple, complicated, complex), and so on. There are many systems that can be described both quantitatively and qualitatively.[5]

The next word to address in the definition of 'complex systems' is the adjective, which now more than ever is difficult to define. The word is charged with overuse in the media, and it would be easy to find many definitions that fit my purposes. But beginning with his evaluation of several definitions he encounters, Northrop broadly states that:

> Complexity is a subjective measure of the difficulty in describing and modeling a system (thing or process), and thus being able to predict its

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[4] Northrop, *Introduction to Complexity and Complex Systems*, 2.

[5] I learned this early on in my exploration of systems research: it struck me as phenomenally important then and strikes me now. For a comprehensive and ultimately *true* understanding of the world—natural and man-made—it seems to me necessary to incorporate both qual- and quantitave methodologies into one's comprehension of the universe. It is merely disciplinary boundaries that separate the types of knowledge so distinctly; in this thesis I try to move forwards with an inclusive tone.

behavior. Or we might view the complexity of a system or dynamic process as some increasing function of the degree to which its components engage in structured, organized interactions.[6]

Already this definition introduces the confusing idea of subjective versus objective complexity, and I would like to address the issue immediately. Due to the fact that 'complexity' is a very useful word, it is used in a wide variety of scenarios, and thus takes on many hues of definition. After all, most words—whether adjectives or nouns— are verbal constructs and connote mental images. Like the words 'red' or 'tree' or 'love,' complexity is a shorthand tool for thinking and communicating about various aspects of the phenomenal world. Here the obvious divide between subjectivity and objectivity arises. For, as Corning observes:

> although there may be some commonalities between a complex personality, a complex wine, a complex piece of music and a complex machine, the similarities are not obvious. Each is complex in a different way, and their complexities cannot be reduced to an all-purpose algorithm…the differences among them are at least as important as any common properties.[7]

Moreover, to aficionados and connoisseurs (whether of wine, jazz, mechanics, or sociology) things and processes that are highly confusing and seemingly "complex" to others are simple and easily understood to them. To me, Ornette Coleman is barely appreciable; to others he is a musical genius. There are many examples of 'subjective' complexity. We are not all experts in everything.[8]

So how does one distinguish between these categories of complexity, and how can we understand them as pragmatic and applicable ideas? For the sake of efficiency, I will not spend more time than necessary spiraling down the rabbit hole of defining complexity as a *single term*. Instead, I will proceed in the direction that nearly all complex systems researchers have done before me: rather than trying to define what

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[6] Northrop, *Introduction to Complexity and Complex Systems*, 2.

[7] Corning, "Complexity Is Just a Word!," ISCS, Web.

[8] This idea could certainly be expanded upon. The balance and the question between subjectively and objectively complexity is a curious one. When I perform harp in public—and I am rather unlike Ornette Coleman—I get swarms of comments about how complex it must be to use eight fingers and two feet; to me, it is second nature; but I also recognize the natural complexity of the instrument I am playing. Music and poetry are perhaps the most interesting topics in this discussion because masters of the arts can both claim ownership over their abilities (naming themselves masters of whatever complex art they do) while also realizing that what they do is only possible after years of study. It is thus complicated and complex.

complexity is, it is more useful "to identify the properties that are commonly associated with the term."[9]

Thus, I describe the most fundamental ideas that revolve in the genre of complex systems below, pulling from several different—though all accepted—definitions. Most descriptions and definitions of complex systems are aimed at answering three questions, which Seth Lloyd identifies as: (1) How hard is the system to describe? (2) How hard is it to create? And (3) what is its degree of organization?[10] The mathematics of complex systems becomes necessary when one is modeling the system (which, of course, is a way to understand the system), but it is not vital to answering the first two questions, or to qualitatively describing the surface of an abstract complex system. One can discuss the theoretical descriptors found in complex systems without using jargon; some concepts are down right simple (rather ironically). For these reasons, and due to my own background, the definitions are meant to be conceptually broad. Additionally, one of the barriers I have constantly encountered is that poetic analysis—for understandable reasons—lacks any vocabulary or conceptual frame that allow quantitative or objective distinctions about, for example 'how hard it is to describe.' Because of the current gap, then, I think identifying the characteristics of a complex system is much more useful than trying to immediately answer with objective standards or a ranking system how 'complex' a poem is.

In his 1998 text *Complexity and Postmodernism*, Paul Cilliers provides a lengthy (ten-part) description of the characteristics that manifest themselves in a complex system. Abbreviated slightly for the sake of length, they read:

    a. The system is comprised of a large amount of elements
    b. The elements or individuals interact, and their relationships change continually

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[9] Lloyd, "Measures of Complexity: A Nonexhaustive List. ," Web.

[10] Lloyd, "Measures of Complexity: A Nonexhaustive List," Web. Lloyd writes that the difficulty of description is typically measured in 'bits' (i.e. Entropy; Chernoff Information; Dimension; Fractal Dimension; Lempel-Ziv Complexity); that the difficulty of creation is typically measured in time, energy, dollars, etc., namely: Computational Complexity, Time Computational Complexity; Space Computational Complexity; Logical Depth; Thermodynamic Depth; Cost; and Crypticity, while the third question, degree of organization, may be divided up into two quantities: a) difficulty of describing organizational structure, whether corporate, chemical, cellular, etc.; and b) amount of information shared between the parts of a system as the result of this organizational structure.

c. Each element interacts with a large number of other elements; some elements are more active than others
d. The interaction between elements is non-linear
e. Elements primarily interact with other elements that are in their near vicinity (not necessarily in a spatial sense); however, they can act with other elements that are further away as well
f. The activity of an element may reflect back on itself (either positive or negative feedback)
g. The system is open; the borders cannot be drawn.
h. The system can never be in a state of equilibrium; instead it is dynamic
i. The system is greatly influenced by its history
j. Individual elements can only act on the available information

Lui Lam, in Science Matters, outlines three much broader concepts that he finds fundamental to understanding complex systems.[11] The concepts themselves are widely applicable and coherent; his attention rests on Fractals, Chaos, and 'Active Walks'. He summarizes their definitions:

a. Fractals: "A fractal is a self-similar (mathematical or real) object, possessing quite often a fractional dimension. Self-similar means that if you take a small part of an object and blow it up in proportion, it will look similar or identical to the original object". (20)
b. Chaos: "Chaos is the phenomenon observed in some nonlinear systems, wherein, the system's behavior depends sensitively on their initial conditions. (20)"
c. Active Walks: A 'generic origin of complexity in the real world', the concept of an Active Walk is a paradigm introduced specifically to describe complex behavior. "In an Active Walk, a particle (the walker) changes a deformable potential—the landscape—as it walks; its next step is influenced by the changed landscape (21)."

Lam provides a plethora of examples of each concept's applicability, describing how each has been useful to complex systems science in the past and how they will each continue to be integral ideas. But it is difficult to state something as broad as "fractals are everywhere in complex systems" and have it be corroborated in a realistic way. For my purposes what is much more useful—and accurate—is to discuss the *underlying* concepts in each of Lam's categories. The more fundamental concepts of self-similarity and nonlinearity will prove critical for an understanding of the parallels in literature. To clarify terms: the property of *self-similarity*, mentioned in Lam's first category of 'Fractals,' implies that the part resembles the whole. Self-similarity naturally necessitates

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[11] Burguete and Lam, *Science Matters: Humanities as Complex Systems.*, Print.

some symmetry because of the relationship between part and whole. There are not really any completely self-similar objects that occur naturally. The well-known examples of fractals in ferns and trees are approximate (not every branch on a tree exactly copies the shape of the tree itself); only in mathematical and computational models can 'true' self-similarity be modeled. However, approximate self-similarity is common in many systems, and in applying it to poetry, it allows us to pinpoint patterns. Similarly so with the idea of self-referential *behavior* in a system: this is when a part of the system—be it sentence, formula, or scene from a poem or a film or a computer program—resembles or references itself, either directly or through some encoding process. There are many examples of this behavior in mathematics, linguistics, and art, but it is not a ubiquitous property.[12] In discussing self-reference and self-similarity, I will be able to show how the complexity of a poem increases when the poem 'changes scale' by referencing itself, parts of itself, and ideas outside of itself.

Lam's second category, 'chaos,' depends on non-linear behavior in the system; briefly, non-linear means that in a physical system, the input is not directly proportional to the output. Many of the systems (of equations) that one deals with in high school math and early calculus classes in college are linear, and it takes several years of mathematics to reach a curriculum discussing nonlinear systems of equations. Defined in opposition to linear equations, nonlinear system of equations are sets of simultaneous equations in which the unknowns appear as variables of a polynomial of degree higher than one. In other words, the equations to be solved cannot be written as a linear combination of the unknown variables or functions that appear in them. In more mathematical terms, a nonlinear system is a system that does not satisfying the 'superposition principle.' In high school math lingo, $f(x) + f(y)$ does not, in a nonlinear system, equal $f(x+y)$. I will discuss ideas of nonlinearity and chaos in greater depth in the chapter about free verse poetry.

The third and most original aspect of Lam's work is the term and idea of 'Active Walks'; the phrase proves handy when discussing the idea of an open, dynamic system that changes over time. As Cilliers outlines in points (g), (h), and (i), these are all

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[12] See Gödel's incompleteness theorem; Douglas Hofstadter's lengthy works on strange loops and self-reference; Cervantes's Don Quixote, Dante's Divine Comedy; discussions of reflexive sentences like 'the man washes himself'; abbreviations like TLA for three-letter-abbreviation.

characteristics of a complex system. The term 'Active Walks' implies the aforementioned three points of Cillier's work and will be adapted as terminology in this thesis.

In a distilled list otherwise quite similar to Cillier's, Seth Lloyd of MIT suggests that complexity often (not always) implies the following attributes:

> a. A complex phenomenon consists of many parts (or items, or units, or individuals)
>
> b. There are many relationships/interactions among the parts
>
> c. The parts produce combined effects (synergies) that are not easily predicted and may often be novel, unexpected, even surprising.

It would not make an engaging thesis to merely impose these definitions or categorizations onto poems. Though they are doubtless immediately useful for mathematicians, I am a humanities student, and I wish to call attention to a more abstracted suggestion about these formalized explications about complexity. It would be boring to isolate characteristics of individual poems and show how, in general, poems are complex systems.[13] Instead, my approach is a little more roundabout. I proceed with relatively traditional poetic analysis and allow myself to discuss both concepts and bring in vocabulary from the above lists of characteristics of complex systems, in order to see if the discipline of complex systems can benefit poetic analysis at all.

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[13] It would be boring because it would be easy, and it would tells us nothing new about either a poem or a complex system. See Appendix XX for a brief comment.

Part Two:

Complexity in Poetic Analysis

The very first paragraphs of the <u>Norton Anthology of Poetry</u> (a text that may students use when learning about how to read and respond to poetry), explicitly mention complexity: "Texts may be complex and even unstable in some ways; they do not affect all readers the same way, and they work through language that has its own volatilities and complexities." Our reading of poetry is naturally guided and influenced by our life experiences; they inform our connection with images, words, events, and sounds from the text. As one reads more poetry, they naturally form expectations of pattern, repetition, association, or causalities. Reflecting on poetry, or re-reading individual poems, adds other layers of personal and intertextual understanding. I have found all these aspects— and more, which will be discussed—make a poem complex. As a side note, when techniques harmonize in their complexity, I have generally observed they make a poem *good*.

Both critics and poets themselves reflect on their work and laud its complexity. Critics are able to spend hours and hours (years and years!) over relatively few lines of verse, while poets take great pride in their technical poetic abilities, seeking always to cultivate the skill. For example, in his book *Romantic Complexity,* Jack Stillinger spends three hundred pages analyzing the complexity of works by Keats, Coleridge, and Wordsworth. As Paul Valery once wrote,

> Think, too, that of all the arts, [poetry] is perhaps that which coordinates the greatest number of independent parts of factors: sound, sense, the real and the imaginary, logic, syntax, and the double invention of content and form.

Form, meter, rhyme, sound sense: these poet's tools are of utmost importance to the poet, even if the audience overlooks them.[14] Indeed as Marianne Moore remarked, "If technique is of no interest to the writer, I doubt that the writer is an artist." The literary techniques that poets use to convey meaning and emotion are parts of a whole are valued highly when reading a poem, even if the reader cannot immediately identify all the aspects (i.e. techniques) affecting the meaning of the poem. When technique, message (i.e. what the poet is trying to say), and emotion (i.e. what feelings the poet is trying to communicate) are built together successfully, a complex poem results: one that cannot be reduced to any of the individual components (which is, as seen above, a critical aspect of a complex system). This processes of understanding meaning in poetry is ultimately why complexity is of any interest to poetic studies: good poetry is usually complex. We crave complexity, value it, and thus spend decades trying to understand all aspects of a single work; in some ways my work is done for me. In this thesis I build parallels between complex systems and poetry, but the connections already exist in the language and description.

Drawing on poems from many genres and time periods, from modern mathematical research and theories, and from my own readings of many poems, I will now discuss several main ideas from which poetic complexity results. As Henri Cole admits in his commentary essay, "On Complexity," "A poem can be metrically complex or syntactically complex. It can be thematically complex, psychologically complex or verbally complex." I have tried to clarify these 'types of complexity' and organized them into several sub-genres, found in six different parts in chapter two: Formal Structures and Meter, Free Verse, Phrasing and Diction, Metaphor, Unexpectedness, and Intertextuality and Layers of Complexity. Using poems—for poetry best represents itself—as well as occasional examples from mathematical papers and textbooks, I illustrate complexity in poetry in these four categories, employing the vocabulary and concepts from the above definitions of complex systems and complexity where useful and appropriate. The need for this is prompted by the fact that poetic complexity is not apparent to all readers nor is it clear what we mean by describing systems as complex, particularly systems of

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[14] Rhyme may not be overlooked as frequently as some other poetic techniques, but I have certainly mistaken it sometimes. Often if a poem is heavily enjambed and then read aloud, one can miss the rhyme scheme entirely.

language and literature. The more we can understand the sources and interactions of complexity in poems, the greater appreciation we can cultivate for these works. It will, I hope, be easier to teach difficult works when we have a better understanding of challenging and complex works, and it also will offer new ideas for how to analyze poetry in unconventional ways.

Chapter Two:

Poetic Complexity

Part One:

Form and Meter

The empirical study of poetry will convince us that meter is a prime physical and
emotional constituent of poetic meaning.

—*Paul Fussel,* Poetic Meaning and Poetic Form

In art, we strive to realize not only unity, permanence of law, likeness, but also, with it,
difference, variety, contrast: it is rhyme we like, not echo and not unison, but harmony.

—*Gerard Manley Hopkins*

In this part I will discuss the importance of form and meter in poetic complexity. I
am aware that my discussion of form does not lend itself immediately to much modern
poetry, as is it not currently popular or fashionable for contemporary poets to write in
traditional forms; free verse is the dominant style choice. Instead, my points focus on
poems that have been generally recognized as excellent in some regard. The poems I use
as examples are nearly all ones I like personally, but their significance is reflected in their
historic relevance and not my tastes. That is to say, all the poems I use as examples are

quite well known to most readers of poetry, and they are all frequently anthologized. I have not chosen obscure poems to illustrate obscure aspects of complexity; my point is rather the opposite: the poems the public has appreciated for years are often jam-packed with complexity. All criticism of poetry, as John Ciardi notes, "begins fundamentally with 'I like it' or 'I don't like it,'" but I mean to focus on more objective qualities that can be examined and measured in poetry: in this chapter, form and meter.[15]

Formal elements of lyric poetry are explicitly related to a poem's capacity for meaningful complexity. But in most of the time leading up to this project—when discussing this matter with contemporary poets and peers—I have felt pressure to defend formal verse further, for I feel the validity of structured lyrics has been attacked in the last 50 years by the overwhelming popularity of free verse. However, I am supported by nearly every successful poetic critic, whether Harold Bloom, Paul Fussell, or Steven Pinsky.

The thought that form is crucial to meaning in poetry is also supported by poets themselves. Often poets are the masters of playing with language; with different meters poets can force a condensing of meaning and a link between sound and sense. Writers of formal poetry are of course aware of the intricacies of their form or meter and the relevance of their choices. For example, W. H. Auden,

> asked by the editor of an anthology to choose two of his favorite poems and to give his reasons for choosing them, wrote: 'The first, 'In Due Season,' I choose because it this only English poem since Campion written in accentual asclepiads; the second, 'Prologue at Sixty', because I think the alliterative meter not badly handled.

Similarly, when Robert Frost read his work to some assembled writers at The Bread Loaf Writer's Conference, he asked them to identify the meter of his poem "The Hired Man." Nobody responded, so Frost informed them, probably with irritation, "It's hendeccasyllabic." Then, a woman (described in some accounts as 'fusty,' in others as 'a little old lady' and in still others as 'an English teacher') raised her hand and asked, "Surely when you are writing you don't pay attention to those sorts of technical tricks, Mr. Frost!" to which Frost responded, "Madam, I revel in them."

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[15] Ciardi and Williams, *How Does a Poem Mean?*, 27.

Poets also know of the dialogue they enter into with other poets and readers when they choose to write in form and meter. For example, in the preface of the first edition of *Lyrical Ballads,* William Wordsworth wrote,

> It is supposed, that by the act of writing in verse an Author makes a formal engagement that he will gratify certain known habits of association (…) This exponent or symbol held forth by metrical language must in different eras of literature have excited very different expectations: for example, in the age of Catullus, Terence, and Lucretius, and that of Statius or Claudian; and in our own country, in the age of Shakespeare and Beaumont and Fletcher, and that of Donne and Cowley, or Dryden, or Pope.[16]

Wordsworth describes here the implicit acknowledgement readers make when they take up a poem to read: the "formal engagement" is not a contract of a binding nature but one that allows a reader to recognize poetry over prose, verse over commentary. As Wordsworth implies, this recognition can occur thanks to the choice of a poet to write with attention to meter. His remark also illustrates that this is also the case with *form* more broadly: the structure of the poem, whether it be a sonnet, a haiku, a rondeau, or lines of rhyming couplets, instantly captures the reader, and imposes expectations upon them, fastening their attention to the structure of the poem. For a reader experiencing the poem for the first time this may be particularly powerful. In his essay *Science and Poetry* I. A. Richards shows insight into poetic composition, pointing out that:

> In nearly all poetry the sound and feel of the words, what is often called the form of the poem in opposition to its content, get to work first, and the senses in which the words are later more explicitly taken are subtly influenced by this fact.[17]

Indeed, over the years, various formal poetic structures have actually earned themselves associations and reputations. Ode and Ballad forms connote something different from Limericks and Pantoums—which, though obvious when the poems are read, cannot be taken lightly. The idea that a pre-set rhyme scheme or arrangement of ideas could (and does) affect and sometimes entirely alter the meaning of an individual poem is *riveting*. Can the sound of a word or phrase really alter meaning? Would 'Ode on a Grecian Urn' be a completely different poem if it wasn't called an Ode? Some questions like these parallel poetry with music, and ask questions about the phonetics of poetry (for example

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[16] Wordsworth, *Lyrical Ballads, with a Few Other Poems*, Preface.
[17] Richards, I.A. *Science and Poetry,* 32.

how a rhyme scheme might be compared to cadence patterns or rhythmic tendencies in music) but with poetry there is the entire other dimension of the meanings of the forms themselves; what does it mean for a poem to be a ballad? How does the property of ballad-ness change the interpretation of a poem? Though complicated, the link between form and meaning occurs frequently—all the time, in fact—and allows poems and poets to reference each other, engage with each other over the stretches of time, and to form arguments or break reader expectations when they change the form.

Additionally, some poetic forms are forever associated with individual poets, either because of their origin or because of a single poet's skill. As an example of the latter, it's practically impossible to write a villanelle without comparing it to Dylan Thomas' complete mastery of the form in his "Do Not Go Gentle Into That Good Night." Whenever a modern poet writes a villanelle, he or she recognizes the previous and nearly archetypical works from the past. The presence of history in all poetry reminds one of Paul Cilliers' list of aspects of complex systems: "the system is open; the borders cannot be drawn; the system is greatly influenced by its history." Poetry does not exist in a vacuum; the history of a form attaches influences poets whenever they employ that form. These ideas of poetic history and intertextuality will be discussed in greater depth in the last part of this chapter.

As an example of forms being attached to the poet who created them, sonnets are an excellent and obvious illustration. The changes of sonnet form from Petrarch and Shakespeare are the two most significant developments in terms of technical shifts (and, consequently, emotional expressiveness) and both writers cemented the sonnet's enduring appeal by demonstrating its flexibility and lyrical complexity. The Petrarchan (named, of course, for Petrarch, but now sometimes known as merely 'Italian') sonnet, in its fourteen lines, has two parts: a rhyming octave, abbaabba, and a rhyming sestet, cdcdcd. Below is Petrarch's Sonnet 159; a translation can be found in appendix XX.

In qual parte del ciel, in quale idea	A
era l'exempio, onde Natura tolse	B
quel bel viso leggiadro, in ch'ella volse	B
mostrar qua giú quanto lassú potea?	A
Qual nimpha in fonti, in selve mai qual dea,	A
chiome d'oro sí fino a l'aura sciolse?	B
quando un cor tante in sé vertuti accolse?	B

benché la somma è di mia morte rea.	A
Per divina bellezza indarno mira	*\<turn\>* C
chi gli occhi de costei già mai non vide	D
come soavemente ella gli gira;	C
non sa come Amor sana, et come ancide,	D
chi non sa come dolce ella sospira,	C
et come dolce parla, et dolce ride.	D

A famous example of a Petrarchan sonnet written in English is Keats' "On First Looking Into Chapman's Homer:"

Much have I travell'd in the realms of gold,	A
And many goodly states and kingdoms seen;	B
Round many western islands have I been	B
Which bards in fealty to Apollo hold.	A
Oft of one wide expanse had I been told	A
That deep-brow'd Homer ruled as his demesne;	B
Yet did I never breathe its pure serene	B
Till I heard Chapman speak out loud and bold:	A
Then felt I like some watcher of the skies	*\<turn\>*C
When a new planet swims into his ken;	D
Or like stout Cortez when with eagle eyes	C
He star'd at the Pacific—and all his men	D
Look'd at each other with a wild surmise—	C
Silent, upon a peak in Darien.	D

In his *Poetic Meter and Poetic Form,* Paul Fussell identifies the difficulty in composing Petrarchan sonnets to be the 'imbalance' in the 'unbalanced bipartite shape' of octave and sestet (115). He writes, "the poet who understands the sonnet form is the one who has developed an instinct for exploiting the principle of imbalance" (115). He goes on to explain the importance of the 'turn' (usually noted around the first line of the sestet) in a rather mathematical way:

> If the two parts of the [Petrarchan] sonnet, although quantitatively unequal, can be said to resemble the two sides of an equation, then the turn is something like the equals sign: it sets into action the relationship between two things, and triggers a total statement (116).

But the Petrarchan sonnet, extremely popular in the Elizabethan era, became an object of apparent disdain for Shakespeare, and he re-vamped the sonnet structure, consequently altering poetic form for the rest of the English language; now, Shakespearean sonnets are by far one of the most popular poetic forms (historically speaking; I do not think this is

the case in the vast volume of poetry being written today).[18] In contrast to the Petrarchan sonnet, the first twelve lines are divided into three quatrains with four lines each. In the three quatrains the poet establishes a theme or problem and then resolves it in the final two lines, called the couplet. The rhyme scheme of the quatrains is 'abab cdcd efef,' and the couplet ends with 'gg.' Sonnet 73, one of Shakespeare's best-known sonnets, demonstrates this below:

That time of year thou mayst in me behold	A
When yellow leaves, or none, or few, do hang	B
Upon those boughs which shake against the cold,	A
Bare ruined choirs, where late the sweet birds sang.	B
In me thou see'st the twilight of such day	C
As after sunset fadeth in the west;	D
Which by and by black night doth take away,	C
Death's second self, that seals up all in rest.	D
In me thou see'st the glowing of such fire,	E
That on the ashes of his youth doth lie,	F
As the death-bed, whereon it must expire,	E
Consumed with that which it was nourish'd by.	F
This thou perceiv'st, which makes thy love more strong,	G
To love that well, which thou must leave ere long.	G

Though brothers, these two types of a single poetic form *provide different expressive capacities* and they tell the reader to expect something different out of the poem—even though all I have taken heed of is the rhyme scheme (which is not all sonnet structure implies). For example, how does the mere re-arrangement of anticipated cadence, prompted by the placement of the turn, force a reader's thoughts to change? Is it the heard and expected pattern of rhyme? How does a reader's ear hang on to the pattern in different ways? These questions, explored by many critics and lovers of the sonnet, get at the power of a poetic form. The complexity of the sonnet lies partially in the very structure of the poem. Fussell observes that: "the rhyming of two contiguous lines demands a tighter logical unity between them than between two noncontiguous lines which rhyme. We expect the relation of the two lines of a couplet to be logically very close, whereas the relation of two rhyming lines in an abab quatrain does not arouse such rigorous expectation." This analysis of caused expectation due to the type of sonnet reminds us that the form provides history, context, and guidance, for poet and reader, in

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[18] Fussell, *Poetic Meter and Poetic Form*, 118.

their auditory and visual experience of the poem and in a deeper critical sense. Thus the form of a poem might engage with many other aspects of reality outside of itself—one might even say that the 'borders' of the poem cannot be drawn; the 'system' is open. This is one of the characteristics of a complex system that Cilliers identifies.

Before we answer this first set of questions, I ask that we move one step deeper: what is the root of the form? Above, I showed with 'As' and 'Bs' the rhyme scheme, but there is a more complex and more profound underlying technique at work that guides sonnet form. This is of course *meter*.

The first thing to mention about meter is that "we know almost nothing about it, especially how much of it is 'in' the pattern of written words before us and how much 'in' the reader's mind and musculature."[19] And yet, it is the absolute backbone of all poetry; every poet functions primarily as a metricist, whether or not they know it. Because meter relies on words themselves, it is the "most fundamental technique of order available to the poet," and, according to Fussell, all other ordering poetic techniques (rhyme, euphony, assonance, stanzaic form) are "projections and magnifications of the kind of formalizing repetition which meter embodies. They are meter writ large." Many poetic techniques that exist within a poem are thus reliant on the meter, which happens on a smaller scale. Meter is both innate in the pronunciation of words as well as their relation to words directly next to them, and techniques like rhyme or euphony rely on words around them, as well, though sometimes further away in a line or stanza. One can identify the 'formalizing repetition' of meter in many aspects of formal poetry and see how it is indeed as aspect of complexity in poetry.

The etymology of the word 'meter' is the ancient Greek 'measure.' Poems use meter to measure a line, by counting it out in various ways. We use emphasis and stress and duration of syllables when we speak, but no one *thinks* in meter; instead it is a stylized way of understanding lines of written work. Thus discussing meter in lyric verse is a way of pinpointing rhythmical patterns (in poetic language especially) that can then be unpacked and formulated. Meter relies on spoken language but should not be confused with it.[20] As Fussell writes, "Meter is what results when the natural rhythmical

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[19] Ibid., 4.

[20] Caplan, *Poetic Form: An Introduction*, 11.

movements of colloquial speech are heightened, organized, and regulated so that pattern–
which means repetition–emerges from the relative phonetic haphazard of ordinary
utterance." Though here Fussell is clearly not thinking of complex systems, the idea of
'emergence' of meter from natural speech patterns is one source of poetic complexity.
The musical patterns one feels when reading a poem are reliant on the smaller aspects
that sometimes go unnoticed. Few readers of poetry immediately identify spondees and
feminine endings, but they do hear musical qualities and elegance of sounds. But as
Fussell implies these musical qualities, present in poems when read or heard holistically,
arise out of simple metrical rules. Formal poems have many interacting parts which
behave according to simple, individual rules (for example, in a sonnet, the lines must be
in iambic pentameter) and this results in emergent properties of heard pattern; thus meter
is a source of complexity in poetry.

There are several types of meter: accentual-syllabic meter (the most common in
English poetry), accentual meter (the oldest type of meter in English), syllabic meter
(more common in Romance languages and in Japanese), and quantitative meter.[21] It is
worth mentioning that to the English speaker's ear, we often push stress onto purely
syllabic meter, even when the intention of syllables is the only guiding 'meter' in the
poem. The forcefulness of scansion into our ear illustrates that meter, no matter what
type, is a challenging and important way of 'measuring' a line of verse. It is challenging
in that it requires a musical ear or at least one attuned to poetic patterns, because scansion
is an art and requires practice like all others.

Theorists of metrical studies have suggested many hypotheses for why meter is a
source of complexity, and why it is pleasurable to encounter, in poetry. Several ideas
point generally towards a history of music, foot-tapping, and memory devices; others
suggest that meter draws a reader's attention in an encourages her to focus; still others
imply the whole pleasure base of temporal pattern in language is essentially physical
(whether this means that the 'beat' of a poem speeds up the heart rate or that the
patterning attracts us sexually).[22] Some hypotheses stretch to the absurd but most share
the concept that pleasure garnered from meter has some relation to the ordered patterns

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[21] Fussell, *Poetic Meter and Poetic Form*, 6; Caplan, *Poetic Form: And Introduction,* 12, 17, 34. For a longer explanation and examples of these four types of meter, please see appendix XX.
[22] Ibid., 5.

we experience breathing, walking, singing, and so forth. As Robert Frost said, "There are only three things that a poem must reach: the eye, the ear, and what we may call the heart or the mind. It is the most important of all to reach the heart of the reader. And the surest way to reach the heart is through the ear." No matter what the theory of the biology of metrics states, we can discuss scansion and syllabic emphasis as a source of poetic complexity by means of example.

In terms of analysis, metrical discussion is imperative to discussing and perhaps even measuring poetic complexity. Several methodologies can be employed that serve different purposes, the results of which reveal different aspects of poetic complexity and meaning. I will first demonstrate a rapidly reductive model of analysis, eliminating attention to the form, the diction, the rhyme scheme, and the author's biography. Referencing the brief discussions of sonnets, above, here is another variation of the sonnet form, Gerard Manly Hopkins "Pied Beauty:"

> Glory be to God for dappled things—
> For skies of couple-color as a brindled cow;
> For rose-moles all in stipple upon trout that swim;
> Fresh-firecoal chestnut-falls; finches' wings,
> Landscape plotted and pieces—fold, fallow, and plow;
> And all trades, their gear and tackle and trim.
>
> All things counter, original, spare, strange;
> Whatever is fickle, freckled (who knows how?)
> With swift, slow; sweet, sour; adazzle, dim;
> He fathers-forth whose beauty is past change:
> Praise him.

Pied Beauty is a variation on the sonnet called a 'curtailed' or 'curtal' sonnet, which "retains the proportions of the two Petrarchan parts but reduces their size." In Hopkin's restructuring of the form to the abbreviated rhyme scheme of abcabc, dbcdc, he half-invokes the history of the sonnet, but departs from it enough that it is hardly recognizable as a sonnet, most obviously because the turn is not dramatically present in "Pied Beauty" as it is in Keats' "On First Looking Into Chapman's Homer." This alteration of the sonnet form is quite fitting for a poem advocating originality and contrariness.

When asked what the *subject* or perhaps, thinking hyper-reductively, what the *content* of this poem is, one might come up with:

> Thank God for pretty, spotted stuff.

Or,

> Praise God for all these examples of dappled things.

But it does not take an educated reader of poetry to scoff at this elimination of *actual meaning* from the poem; one prose sentence obviously does not capture what Hopkins communicates in eleven lines of poetry.[23] The poem is *irreducible* because the meaning relies on properties separate from, and greater than, the exact definitions of the words. Indeed, as many critics have pointed out, 'paraphrase can only open the discussion' of a poem, particularly in the case of "Pied Beauty," where the subject matter remains conventional but the treatment of it via form is more extraordinary, and more complex. Given this, how does the linguistic experimentation of the poetry interact with traditional themes? Hopkins offers the reader his vision of the vigorous fusing together of divine spirit, matter, and beauty, with hyphenated words and active language. The urgency in his language (note the noun phrases and adjectives listed without conjunctions) invites us "to imagine the creative powers of God as more urgent than measured, more clash-filled than controlled, more unexpected than planned."[24] His language implies something almost haphazard, arbitrary, chaotic, leading the reader to the verge of the idea that that universe might be random, but then to assure them that this is not the case, he chooses to fit the poem into a strict form—an abbreviated sonnet, as we've seen. The form of the poem is extremely relevant for Hopkins' work because his subject (God's grandeur) has been rather overdone, in more trite ways, by many poets before. The rather traditional subject matter Hopkins uses is magnified, warped, and changed by the form and meter in "Pied Beauty." Consequently this is where the complexity of the poem arises: instead of the definitions of the words creating the most important ideas, it is the arrangement of the words together that create the *emergent property* of meaning that makes the poem

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[23] Helen Vendler mentions this in an off-hand way, as if the fact was completely obvious both to Hopkins himself and to his audience: "…the choice of subject (which may, of course, and often does, follow on the inchoate choice of rhythm, about which both Hopkins and Valery have given testimony (The Odes of John Keats, 5)".

[24] Ross, "Beauty--How Hopkins Pied It," Web.

complex. Words like 'complexity' and 'emergence' will prove immediately useful in an analysis of Hopkins' lyric. For the "real meaning" of the lyric is not just a praise of God or of the natural word. It is about a variety of changing items, contrasted in the ending with the praise of God's immutability and unity. Obviously, the power of a poem like "Pied Beauty" does not exist *in* its subject matter but in its way of *transcending* its subject matter.

But what are these 'transcendent' qualities of poetry, the qualities that push it beyond reductionism? They are all the ideas that exist apart from the subject matter—i.e. the form, the tone, the context, the performance, and many more (though these word in conjunction with the subject matter, of course). The emergent properties are qualities that answer the questions of not 'what a poem means' but, in the words of John Ciardi, *how* a poem means. These are the imperative observations that, consequently, begin to answer what lyric complexity is; for if there is nothing else in a poem besides subject matter, it never prompts the question *how does this poem mean,* and the reader is left rather unsatisfied and uninterested in the poem. But for Hopkins' poem, the experience of auditory 'dappling' and the tripping, spotting rhythm—both of which are separate from, but integrated with, the *content* of the poem—cannot be reduced to or explained fully by the content of the piece.

The *form* and *meter* of the poem are crucial—they are the sources, the primary keys—to the *complexity* and the *meaning* of the poem. First, apart from being a curtailed sonnet, the form of the poem is important not only because it is a rather abbreviated sonnet, but because the form plays off the content. The poem is in a very basic way a praise of God; in form, it is also this, but in more complex way, because it is framed as a prayer. The first line begins, 'Glory be to God;' the poem proceeds to list all the things for which God should be praised and thanked; the last line in the poem—"Praise him."— is indented differently from the rest of the poem, as if the poet was saying 'Amen' at the end of a prayer. Thus the arrangement of the ideas in the poem—that is to say, the form—contribute on a 'higher' level to the meaning; there is meaning contained in aspects of the poem that is not found in the definitions of the words used.

The content is also mirrored in the *meter*. The meter itself is 'dappled'; it harmonizes with the subject matter. The characteristically emphatic meter is Hopkins'

trademark 'sprung rhythm,' which is essentially a system of overstressing syllables so that even monosyllabic words can count as feet. In this case, the meter reveals the most important part of the poem. The forceful effect of sprung rhythm lies in approximating but dramatizing the cadences of natural speech. The hyper–emphasis on natural rhythms creates a sense of intense passion because of the propinquity to 'regular' speech patterns. It projects a tone of sincerity and seriousness, and "intimate emotional involvement… and it transmits an illusion of a total, if one-dimensional, commitment to the seriousness for the subject."[25]

I—and many other critics—can make many statements about meter, and hypothesize about why meter creates attitudes or tendencies in the mind of the reader, but there is not 'proof', nor explanation enough. We also are without a biological/cognitive understanding of how or why rhythms and meter cause certain emotions within a reader. Consequently, in seeking a way to describe what this complex emotive ability of metrical technique as something entirely separate from the content of a lyric poem—as we have seen, the simplicity of a paraphrased verse does not carry the complexity or emotive quality of the full formal poem—I've found complex systems vocabulary helpful in explaining an emotion or emotional development. If we call the understanding and emotion or sense, triggered in a reader by the metric and formal structures of poem and not the subject, *emergent properties* of an individual poem, a space for discussion appears. The term 'emergent property' allows for the idea that the effect of the poem (i.e. intense passion or a tone of sincerity expressed in "Pied Beauty") cannot be reduced to the constituents making it up (content, meter, form, and more we haven't explored), but it does mean that the parts produce combined effects or synergies that cannot be predicted from a single line or single paraphrase, and may often be quite novel.

For example: Hopkins' packing-in of various alliterative syllables serves as an aural example of the visual variety Hopkins describes in the subject matter of the poem. The very title of the poem implies that the beauty Hopkins is so enamored with is a beauty that is patchy in color, splotched, and piebald; beauty that arises through juxtaposition. Hopkins tells the reader that God's glory and the world's beauty are in the joining of dissimilars, "in the jostling, the cheek-by-jowling, of the infinitude of

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[25] Fussell, *Poetic Meter and Poetic Form*, 60-61.

differents. There is beauty in the joining of white cloud and blue sky, there is beauty in the contrast of the brindled ("tawny or grayish with streaks or spots of a darker color") cow."[26] This is expressed in the subject matter but more so in the form, as Hopkins juxtaposes and jostles opposites and adjectives next to each other. In his essay "Beauty— The Way Hopkins Pied It," Ross Haj points out the relevance of this beauty (italics mine):

> Hopkins sets this kind of beauty as central, at least among those beauties which are transitory, which are not "past change." (…) The [key] in is nothing less *than the ability not only to perceive the beauty of this necessity (and vice versa), but also to contribute to it, by making a pied poem.*

In short, this beautiful jumble of "piednesses" that Hopkins wishes to discuss, is identifiable and effective because it is presented through the poem itself, in a multiplicity of structures, all "rubbing up against each other, vying with each other, contrapuntally, polyphonically, multifacetedly."[27] Similarly, many of the natural scenes/things in the poem—skies, cows, trout, landscapes, etc.—rely on sunshine to be dappled, brindled, and couple-colored (etc.), creating images of light and dark within the poem. Hopkins' grouping of sets of stressed and unstressed syllables (i.e. his use of sprung rhythm) mirrors this pattern of sunlight and shadow. The use of alliterative words also contributes to the unique, strongly accented sound of the poem.[28] In this brief look at the implication of meter in a single lyric, we begin perhaps to intuit how rich and complex a structure a word is, due to its metrical implications. Diction and phrasing will be discussed further in the next part of this thesis, but we begin to understand, through the gateway of meter, that a word's:

> initial consonants will link it by alliterative games not only to other words in its line, but to all similar words throughout the poem, as will its vowels link it to similar vowels. Its voiced consonants may link it to words

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[26] Ross, Haj. *Beauty—How Hopkins Pied It.* Web.
[27] Ross, ibid.
[28] Though Haj's language itself is a bit ambiguous, he later points out several more sources of complexity in *Pied Beauty*. He asks why the last word of the poem is 'him' and not 'Him.' He argues that the reader might, unthinkingly, assume that since the poem is a praise of God, that last pronoun must refer to the Divine; he states that it would unambiguously do so if Hopkins had capitalized it. Instead, it functions to produce an emergent property back over the poem, as "there can be only one explanation for his decision to leave it in lower case: to make sure that the reader takes it to include us (humans) in the Divine."

containing corresponding voiceless consonants, or corresponding nasals, and on and on.

These sorts of sound patterning relate to the complexity of meter but are different, too. Ross Haj points out many other sources of complexity of the grammar and linguistic structures in "Pied Beauty," but there is one that I had never encountered before that is worth mentioning for its novelty is nothing else. Haj observes that "Pied Beauty is extremely heavily fived." He says that a "poet 'integers' a poem (threes it, sixes it, or in the present case, fives it) when *there is a significant number of sets of the cardinality in question*." In Pied Beauty, Haj notes that there are many things that occur in sets of five, and proceeds to give a list of fifteen different instances of 'fiving'—which is rather amazing, given that the poem is 11 lines long. Some of the items on his list include five tensed verbs, five hyphenated words, five occurrences of 'and' all in the last two lines of the first sentence, 'five occurrences of [m],' 'five occurrences of [h] in monosyllabic pronominals (who, how, He, whose, him),' and 'five words which begin with [p] (Pied, plotted, pieced, plough, Praise.)' Raj's list is lengthy, but at issue for my purposes here is whether or not "integering" is thematically connected to the poem, and if it is a source of a complex pattern within the form.[29] Raj answers that five is the

> *symbol of man* (with outspread arms, man appears arrayed in five parts in the form of a cross: the two arms, the chest, the center – the shelter for the heart – the head, the two legs). Equally, it is a *symbol of the universe*: two axes, one vertical, the other horizontal –both pass through the same center. It is a symbol of order and of perfection. Finally, it is a *symbol of divine will*, whose only wish is for order and perfection.

Unfortunately we can't be sure if Hopkins himself believed in this symbolism or if he intended it in his poem; regardless, it is interesting and adds a new symbolic layer to the poem. Clearly within a poem that might originally seem to be little other than a simple praise of God, there is plenty to unpack linguistically and formally. As I have shown the complexity in the poem does not arise particularly from the sentiment of the poem—a prayer, really—but from the interaction of parts in the lyric, be they stressed and

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[29] Raj instead asks is the question as to whether the "fiving of Pied Beauty is linked to the poem's great ascent of the cline of person, culminating in the revelation of the inseparability of our terrestriality/divinity."

unstressed syllables, the symbol of the number five, or the similarity of sprung rhythm to the dancing of sunlight on the natural world. All of these happen within the poem itself, within a single system. Hopkins' poem fulfills the three necessary characteristics of a complex system found in the first chapters: it is a system that consists of many parts; there are many relationships/interactions among the parts; and the parts produce combined effects that are not easily predicted and may often be novel, unexpected, even surprising. In a poem like Hopkins', that has a formal structural background, a rhyme scheme, a unique metrical structure, lots of internal alliteration and assonance, all these characteristics can be discussed in order to understand poetic complexity. However, what about poems without such overt characteristics? Is free verse poetry also complex, even it employs other expressive resources other than set rhythms or forms?

Part Two:

Phrasing and Diction

The poet makes his selections with more acute attention to the various forces
within the word. For the person who is language sensitive,
every word has its own personality.
—John Ciardi

I do not think it is too contentious these days to say that most English words do not have single definitions. In reality, they have far-reaching connotations that are inseparable from their definitions. Their connotative value is heightened even more in lyric poetry, when forms, rhyme, meter, and subject matter also force a poet to be concise and exact, while also balancing the need for elegant (or meaningful) sound of words. Diction and phrasing are thus aspects of a poem that poets usually spend enormous amounts of time considering.

When we change a single word or omit a term in a poem, we make that choice quite intentionally for a specific reason. In poetry, the complexity of words lies in the fact when we change one of the smallest aspects of a poem, one of the smallest parts, it might change the entire meaning. American meteorologist Edward N. Lorenz (1917-2008) termed this 'the butterfly effect,' which is now used regularly in chaos theory. The Butterfly Effect is a concept invented the to highlight the possibility that small causes may have momentous effects. Initially enunciated in connection with the problems of weather prediction, it eventually became a metaphor used in very diverse contexts, many of them outside the realm of science.

In many non-physical fields, "the butterfly effect constitutes a powerful analogy that can be used fruitfully to raise questions and to transpose techniques that would

otherwise be impossible to imagine."[30] In poetic analysis, the phrase is useful for understanding the crucial importance of every word in a lyric poem. Words in poetry may be chosen for multiple reasons—balancing sound and sense, and balancing connotation and denotation. In this way diction in lyric poetry is a different process from prose writing. As I. A. Richards writes in his essay *Science and Poetry*,

> In its use of words most poetry is the reverse of science. Very definite thoughts do occur, but not because the words are so chosen as logically to bar out all possibilities but one. They are not; but the manner, the tone of voice, the cadence and the rhythm play upon our interests and make them pick out from among an indefinite number of possibilities the precise particular thought which they need. This is why poetical descriptions often seem so much more accurate than prose descriptions.[31]

Ciardi outlines four qualities that all words have outside of their dictionary definitions. He states a word is "a feeling," "a history," and "a picture, and that a word "involves the whole body."[32] His outline is similar to the ideas that Helen Vendler describes in her dual introduction and anthology, *Poems, Poets, Poetry*. Vendler, too, points out the importance of words in relation to each other in a poem:

> The meaning of a word in a poem is determined less by its dictionary definition than by the words around it. Every word in a poem enters into relation with the other words in that poem. These relations can be of several kinds: (1) *thematic* (or meaning) relation, (2) phonetic relation, (3) grammatical relation, and (4) syntactic relation.[33]

Of course these relations occur simultaneously in lyric poetry, and immediately, too, as the reader processes the poem. One is reminded of the clear presentation of these ideas made by Seth Lloyd when describing the characteristics of a complex system:

> a. A complex phenomenon consists of many parts (or items, or units, or individuals)
> b. There are many relationships/interactions among the parts
> c. The parts produce combined effects (synergies) that are not easily predicted and may often be novel, unexpected, even surprising.

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[30] Catherine Rouvas-Nicolis and Gregoire Nicolis (2009) Butterfly effect. Scholarpedia, 4(5):1720.
[31] Richards, *Science and Poetry*, 33.
[32] Ciardi, *How Does a Poem Mean?* 101-106.
[33] Quoted and paraphrased from Vendler, Helen. *Poems, Poets, Poetry*. 153.

So far these parallels support the working hypothesis that an individual poem can be a complex system. It is clear that the phrasing and diction commonly found in lyric poems prompts poetic complexity; the tendency of lyric diction to be complex is mentioned frequently in both commentary analysis and theory of poetry. The quality of "lyric language to generally deviate from ordinary, everyday language and discursive conventions in a particularly salient way, so that extra meaning is created[34]" is quite remarkable. In this part of the chapter I wish to discuss diction and phrasing as subsets of forms in poetry, because, as Ciardi writes,

> Words are, in one sense, distinct units. In another, however, they are forever shaping themselves into rhythmic phrases in which the words themselves become parts of a large unit.[35]

Distinguishing *phrases* as opposed to *sentences* as opposed to *lines* is somewhat of a delicate task in lyric analysis, so I wish to explain the cornerstones of 'word pairing' as a formal part of poetry without getting too semantic about it. Broadly speaking, the pairing of words in lyric poetry matters a great deal. Ciardi goes so far as to assert that such interactions between parts 'are the meaning':

> The point cannot be made often enough that it is exactly such interplays [between words] that determine the poem as a poem, and that such interplays, far from being merely ornamental, are inseparable from the poem's 'meaning'. The *are* the meaning, and if they are not there is no defense for poetry, nor any meaningful way of preferring it to embroidery, crossword puzzles, or the day's prose from Washington[36].

T. S. Eliot also has commented upon "that perpetual slight alteration of language, words perpetually juxtaposed in new and sudden combinations," which occurs in poetry. In his 1947 essay "The Language of Paradox," Cleanth Brooks writes in a related context that: "terms are continually modifying each other, and thus violating their dictionary meanings."

What is the relevance of all these observations of poetic language? Clearly there is a *complex interaction between individual words* that creates some sort of capacity of lyric poetry that differentiates it from prose writing. Ciardi's opinions tend most towards

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[34] Muller-Zettelman, Eva and Margarete Rubik, *Theory into Poetry: new approaches to the lyric.* 2005. 25.
[35] Ciardi and Williams, *How Does a Poem Mean?*, 113.
[36] Ibid., 109.

the history and etymology of phrases and to the 'muscularity' of phrasing. Words, taken together as phrases, involve "the whole body in its muscular spasm. And that muscular spasm is far more important than the precise meaning of the statement" (113). These units of phrasing, in their 'muscularity,' are aspects of complex interactions in sentences that are not usually found in prose writing. A lyric poem with important poetic phrasing is more complex than a prose piece because the reader can dissect the poem in many, many different ways, dividing the text up by words, phrases, lines, stanza, or any other denotative and meaningful slicing up of the poem. Phrases in particular are meaningful to us because we *feel* and *remember* them (Ciardi 110-115). Additionally, the language of such 'muscular phrases' is, Ciardi writes, *irreducible:* "One cannot find an excess word in them" (114).

Edna St. Vincent Millay's poem "First Fig" serves as a concise example:

My candle burns at both ends;
It will not last the night;
But ah, my foes, and oh, my friends—
It gives a lovely light.

Millay's poem illustrates, in term of poetic language, the idea that in a lyric, each word is crucial to the absolute meaning of the poem; each word, in its interaction with the ones around it, forms the lyric quality poets strive for. How many "prose" words would one need to write in order to explain everything these lines mean, and what is the difference between the two? The essence of Millay's success in this poem is exactly "that it says so much in so little. Every word counts: remove any one and the meaning is lost."[37]

Looking at a poem by Ezra Pound may also elucidate this quality of the lyric:

In A Station Of The Metro

The apparition of these faces in the crowd:
Petals on a wet, black bough.

This example is a unique one, as it is a 'free verse' poem, a category of the lyric discussed previously. But both the above examples show that lyric poets strive for some quality of complexity in a poem (I chose the two short poems as the idea is even more

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[37] Ibid., 114.

condensed than usual in them) where the very shift or removal of a single word would change the greater meaning of the verse.

How else do phrasing and diction impact the meaning of the poem? Firstly, due to the line break and the punctuation, the entire poem is essentially a single metaphor. Pound *could* have said "The apparition of these faces in the crowd: / *are like* petals on a wet, black bough" and the poem would have been a simile. Instead, the poem brings the two images into direct comparison by placing side by side, without any words between them that make the phrases an obvious metaphor or simile.

Pound achieves immediacy in the poem by omitting some key diction in the poem. Both lines in the poem are fragments (i.e. they are both dependent clauses); *there is no verb connecting the images* not even 'are' or some other form of the verb 'to be'. Pound thus doesn't even connect the phrases grammatically; he *merely places the two images side by side*. As Mark Doty observes, the lack of a clear metaphoric linking verb "reveals an axiom about figures of speech: the further apart the elements within a figure are, the greater the tension and the greater the energy the metaphor has."[38] The more different things are—at least on the surface—the greater the level of tension between them: the industrial image of faces in a crowded metro station contrast greatly with the natural beauty of wet petals. Pound's placement of the two phrases promotes the sense of cognitive dissonance for the reader, but because they are *so* close, without the assistance of a verb or 'like' or 'as', the reader *feels something happen* that instantaneously yoke the images of faces and petals. Doty notes "the presence of a "like" would make the metaphor seem little less crucial," as would any other change in the phrasing of Pound's poem.

"In A Station Of The Metro" is complex because it juxtaposes striking images without any additions and forces the reader to make a cognitive leap without any phrasal help. The effect is like placing two parallel lines, which (by definition) will never meet, and saying "far off, these lines meet," and having the reader believe it. Paul Fussell calls the property in successful poetry that causes that cognitive leap the "closest possible approximation of absolute density" and goes on to say:

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[38] Doty, "On "in a Station of the Metro," Web.

> Density of texture is attained by an interweaving of poetic elements—predications, metaphors, rhythm—so firmly and tightly that, once interwoven, the separate strands resist unraveling, and, as it were, transform themselves into each other.[39]

This idea of density is quite like the quality of a complex system for all the parts to necessarily rely on one another for the system to function in the way that it does. Additionally, it implies parts of the language of effective lyric poetry *transform themselves into each other*; thus the poem *echoes itself* in complex ways. As Ciardi writes, in a successful poem, "the thing itself echoes the word (122)." But neither the phrase nor the idea of density is sufficient in explaining this idea. 'Density' describes the trait of the lyric to be compact in substance but does not adequately explain how the 'interweaving of poetic elements' might be manifested in a poem. Leigh Hunt's "Rondeau" illustrates an extremely tight interweaving of surprisingly simple words and poetic phrases:

> Jenny kissed me when we met,
>   Jumping from the chair she sat in;
> Time, you thief, who love to get
>   Sweets into your list, put that in:
> Say I'm weary, say I'm sad,
>   Say that health and wealth have missed me,
> Say I'm growing old, but add,
>   Jenny kissed me.

This playful poem, though not a common form, itself is quite playful, and provides a good example of how the poem 'echoes itself.' I. A. Richards succinctly describes how poets understand the relationships between words: "It is not the quantity of words a writer has at his disposal, but the way in which he disposes them... His sense of how they modify one another, how their separate effects in the mind combine, how they fit into the whole response, is what matters."[40] Clearly there are many relationships to describe in poetic diction. How can we unpack them more fully?

I've found the concept of self-similarity and self-referentiality to be helpful in exploring this idea. In their textbook *Theory into Poetry: new approaches to the lyric* editors Eva Muller-Zettelmann and Margarete Rubik collect several essays that discuss auto- and meta-reflexivity in lyric poetry. In her essay 'A Frenzied Oscillation: auto-

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[39] Fussell, *Poetic Meter and Poetic Form*, 90-91.
[40] Richards, *Science and Poetry*, 48.

reflexivity in the lyric,' Eva Muller-Zettelmann states that "the metalyric," (a term used to identify lyric poetry that is self-referential or 'metareflexive') "constitutes a strikingly large part of the lyric textual corpus, and it is high time that it was accorded an adequate place in literary critical debate (128)."[41] While this statement is encouraging, I have a certain amount of hesitancy towards employing the phrases 'metalyric' and 'meta-reflexivity' in my own work because they are quite jargon-y and I wish to be as clear as possible in my identification of patterns within lyrics. There have, regardless of the terms used, been several interesting adventures into self-similarity and self-referentiality in poetry, though, and are worthy of mention.

In poetry, the activity of elements in a poem *reflecting* back on themselves (through rhyme, theme, meter, etc.) is a persistent one, but not exactly a self-similar one. Sometimes self-reflection occurs when poets write about writing about poetry, or when they overtly comment on the form they are writing in: for example, Eugene Lee Hamilton's "What the Sonnet Is:"

> Fourteen small broidered berries on the hem
> Of Circe's mantle, each of magic gold;
> Fourteen of lone Calypso's tears that rolled
> Into the sea, for pearls to come of them;
> Fourteen clear signs of omen in the gem
> With which Medea human fate foretold;
> Fourteen small drops, which Faustus, growing old,
> Craved of the Fiend, to water Life's dry stem.
> It is the pure white diamond Dante brought
> To Beatrice; the sapphire Laura wore
> When Petrarch cut it sparkling out of thought;
> The ruby Shakespeare hewed from his heart's core;
> The dark, deep emerald that Rossetti wrought
> For his own soul, to wear for evermore.

What I mean to examine with this example, and in this part more broadly, is the small-scale self-reference that is often a source of poetry complexity: when a poem comments on itself in some way, the reader is often brought into a new layer of meaning within the poem, or an alternate awareness that the poet is commenting on some aspect or writing or

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[41] Muller-Zettelmann states that auto-referentiality and self-begetting would be likely candidates if we were to decide which ideas had been the most influential on philosophy and scholarship in the 20th century. Her essay outlines a history of attention paid to these ideas, showing how the concept morphed and framing it in the context of the lack of criticism.

reading poetry itself. Generally speaking, sometimes poetic language, through the use of allusions and quotations, creates internal reference, as poets refer to each other or to their own work. Some poets use favorite lines (Dylan Thomas uses "once below a time" as a line in "Fern Hill" but again as the title to another poem) or images (e.g. Yeats' gyres) over and over again, or pull inspiration directly from a peer's work (Keats is guilty of pulling material almost directly from several of Coleridge's poems). Sometimes within single poems, single images are recollected and repeated; still other times a poem can contain a metaphor within itself, but expand that metaphor to the entirety of the poem, as if it was 'zooming out' (see the next part of this chapter about Metaphor). All these types of self-reflection and self-reference have not yet been clearly identified or described as altogether different from one another; they sit lumped under the obscuring tags of meta-lyric and meta-poetry.

Some of these abstract examples of internal reference strike me as more than just *reference* though; in some cases, I have seen more of a self-*similarity* in the meaning and form of the poem than Muller-Zettelmann describes. In trying to avoid the opaqueness of jargon, however, let us jump to an example (for as I have said, poetry best explains itself) and consider Ben Jonson's (1572-1637) "To Heaven:"

> Good and great God, can I not think of Thee,
> But it must, straight, my melancholy be?
> Is it interpreted in me disease,
> That, laden with my sins, I seek for ease?
> O be Thou witness, that the reins dost know
> And hearts of all, if I be sad for show;
> And judge me after: if I dare pretend
> To aught but grace, or aim at other end.
> As Thou art all, so be Thou all to me,
> First, midst, and last, converted One and Three,
> My faith, my hope, my love; and in this state,
> My judge, my jury, and my advocate.
> Where have I been this while exiled from Thee,
> And whither rapt, now Thou but stoop'st to me?
> Dwell, dwell here still! O, being everywhere,
> How can I doubt to find Thee ever here?
> I know my state, both full of shame and scorn,
> Conceived in sin, and unto labor born,
> Standing with fear, and must with horror fall,
> And destined unto judgment after all.
> I feel my griefs too, and there scarce is ground

Upon my flesh t'inflict another wound.
Yet dare I not complain or wish for death,
With holy Paul, lest it be thought the breath
Of discontent; or that these prayers be
For weariness of life, not love of Thee.

We find self-similarity in one major aspect of this lyric. First, thematically speaking: it contains, upon examination, several prayers and apologies within itself. It asks several questions but also retreats from them. Jonson longs for death while simultaneously rejecting his longing intellectually (and spiritually). His poem, as a whole, is thus both a pleading prayer and an apology to God, while *containing* smaller-scale prayers, petitions, and apologies. This apology-within-apology and prayer-within-prayer is where I think the complexity of "To Heaven" arises: the uncertainty of the prayer/question/apology tones within individual sentences within the poem are reflected in the purpose of the poem as a whole. The prayers and apologies are self-similar elements seen in both lines and the theme of the poem as a whole. [42]

Secondly, there is a type of self-reference (perhaps not self-*similarity*, however) found in the structure. Here, it should be noted that only *mathematical* fractals can be "truly" self-similar, but the term 'self-similar' can still refer to *parts* of a shape, fractal, or poem that are identical to the whole: "fractal-like structures in nature are best described as scale-invariant structures where, for example, the branch of a tree may resemble the larger tree itself in all of its detail, although the two are not identical."[43] Let's identify this idea in Jonson's lyric. "To Heaven" is written in heroic couplets (i.e. with an a,a, b,b, c, c, etc. rhyme structure). The 26 lines form a single stanza and are not divided into any structural parts besides the rhyming couplets. Every line ends with a full meaningful pause except for a few cases of enjambment in the last three lines (but the poem still progresses and its "movement escapes Pope's monotony because the argument moves forward and the syntactic unit varies").[44] There are nine sentences (counting the ejaculatory clauses in line 15 as a subordinate); in line count they run two, two, four, four, two, two, four, two, and four.[45] The subject of the first sixteen lines is mainly God,

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[42] Haspel, "The Fractal Geometry of a Poem," Web.
[43] Stanley, "Complexity and the Phenomenological Structure of 'Surprise',"
[44] Haspel, Web.
[45] Ibid.,

and the subject of the following ten lines mainly Man. The crux of this structural analysis is that both sections, organized by subject, are *syntactically symmetrical*. The first opens with two questions of two lines apiece and closes the same way; the second reverses the procedure, surrounding the short sentence with the two longer ones.[46] The symmetry of the poem references the balance between God and Man, relating one to the other and seeking to reveal the difficult, yet perfectly balanced and unquestionable, relationship between the two. In this case the structure and meaning reference each other.

Despite a theme that may not resonate with most modern readers (as the poem relies on a 17th century Christian viewpoint), "To Heaven" remains one of the most beautiful poems in the language. Following his analysis of "To Heaven," Aaron Haspel concludes: "Can there be any doubt that it is largely the structure — the fractal — that we respond to?" But his evidence is weak and his example is singular. There can of *course* be doubt that that it is the "fractal structure" of this poem we respond to; Haspel never clarifies what exactly is fractal-like about the poem.[47] Not all occurrences of self-reference, no matter what a critic means by the term, will be self-*similar,* or have resemblance to fractals; nor is it ever so simple as to pin the strength or effectiveness on one single characteristic of a poem. "To Heaven" is powerful for many reasons; among them may be the self-referential trait. Haspel reaches for the pop-science relevancy in his analysis but does not explain the complexity of Jonson's poem great enough depth to warrant the use of the concept of fractals. I don't mean to undercut my own observations of self-similarity in "To Heaven" but I found Haspel's notion of the fractal forms in Jonson's poem to be rather forced. The occurrence of self-reference is common in poetry, and self-similarity is possibly one of the sources of additional complexity in a poem, but we do not have sufficient evidence to draw conclusions about the origin of artistic merit based on a single example.

This is not meant to say that all poems—or all complex systems—reference themselves. However, some do, in one way or another, as Muller-Zettelmann shows quite

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[46] Ibid.,

[47] This does not surprise me, however; fractals have become popular in the last years and people seem to like talking about them as if they contained magical powers. Some poems may demonstrate 'fractal dimensions' but this idea needs much more discussion if it is to pretend to have relevancy to poetry (see appendix IV for more). Additionally, the relationship between complexity and fractals is not clear to me, but I have found many texts that mention both, usually in the context of chaotic behavior of a system or chaos theory, which is why I mention it here.

effectively in her essay, mentioned earlier. Because the term 'self-reference' has already been used, for many years, to describe literary and linguistic patterns, pulling more information from the discipline of complex systems seems inessential. However, it is worth examining another example of what poetic *self-similarity* might look like in order to isolate the difference in terminology. In the next part of this chapter, I discuss metaphor as meaning and illustrate a slightly higher order of the self-similarity that occurs in poetry.

Part Three:

Metaphor

Poetry begins in trivial metaphors, pretty metaphors, 'grace' metaphors, and goes on to the profoundest thinking that we have. Poetry provides the one permissible way of saying one thing and meaning another.
—*Robert Frost*

Metaphors have a long-standing importance in the lyric, and fortunately have not been lost from classrooms as a key concept for understanding poetry. Students usually learn the difference between simile and metaphor and are usually able to regurgitate that 'metaphors are comparisons that assert something is another thing', and 'similes are comparisons that use 'like' or 'as.'' But metaphor is much more than a comparison. It is a verbal trick that causes a leap in concept, reflecting the words seen upon the page to themes contained within the readers mind.[48] In this section I discuss the property of emergence as a result of complex uses of metaphors in several lyrics and involving the larger scale of the reader's mental capacity based on the conceptual jump prompted by a metaphor, and the process of reading the poem as the unfolding of a complex system.

As the neurobiologist and cognitive linguist David Rail writes, "metaphor involves double scope blending where structures emerge from the interaction between incongruent conceptual frames." Indeed, in a thoughtful metaphor, two or more objects/actions/things *are* (figuratively) other things; they are the same because they are compared without a word of comparison.[49] Metaphors can be built between many object or actions and can even span the course of a whole poem. They can be short ("Time, you thief") or lengthy; they can be cliché (love is a rose or a gemstone) or strike us as unique. Many other poems I have used in examples thus far contain metaphors or *are* metaphors:

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[48] An original and successful metaphor does this without the reader expecting it.
[49] Paraphrased from Ciardi.

and this latter case is what I would like to focus on in terms of the complexity. Complex metaphors are common in lyric poems because "when the poet comes to verbalize [his] consciousness, as distinct from his original experience of it, he tends inevitably to metaphor. That is to say, he offers pictures to represent thoughts."[50] Metaphors can be created in single lines and words as well over the course of the poem; one image, placed a line or two away from another, "will impose a mutual relevance upon the two: the poet will ask us to 'rhyme' these images visually, and then to blend into a growing network of relevance all of the other visual material that occurs in the poem."[51] Let us look at an example of a lyric that engages itself in an extended metaphor, "The Road Not Taken" by Robert Frost:

> Two roads diverged in a yellow wood,
> And sorry I could not travel both
> And be one traveler, long I stood
> And looked down one as far as I could
> To where it bent in the undergrowth;
>
> Then took the other, as just as fair,
> And having perhaps the better claim,
> Because it was grassy and wanted wear;
> Though as for that the passing there
> Had worn them really about the same,
>
> And both that morning equally lay
> In leaves no step had trodden black.
> Oh, I kept the first for another day!
> Yet knowing how way leads on to way,
> I doubted if I should ever come back.
>
> I shall be telling this with a sigh
> Somewhere ages and ages hence:
> Two roads diverged in a wood, and I—
> I took the one less traveled by,
> And that has made all the difference.

Practically every reader—lover of poetry or not—has found this poem applicable to their life and has known it to be about something much larger and more important than the fork in a road. "Everything in the poem pretends, on one level, to be part of the incident

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[50] Ciardi and Williams, *How Does a Poem Mean?*, 238.
[51] Ross, Haj. Beauty—How Hopkin's Pied It. Web.

narrated. Yet one cannot miss the feeling that by the end of the poem, Frost has referred to something much more far-reaching" than two paths in the woods. [52]

Ciardi writes,

> Literal minded readers…are forever in difficulty with the metaphoric sense of poetic language. They want to know 'what the poem is about,' and they resist the essential duplicity whereby the poem is never entirely about what is seems to be about. … The essential doubleness of what is happening in this poem involves the nature of the metaphoric contract. All metaphor is basically a way of speaking of the unknown in terms of the known.[53]

This appears true, but it neither answers *how* Frost's poem creates meaning that is not mentioned in the poem nor does it *label* this property (i.e. the ability of extended metaphors to conjure up 'doubleness' by way of discussing knowns and unknowns).[54] But we can understand this 'doubleness' (though it is much, much more than doubleness—Frost's work contains infinite meanings!) of meaning as an *emergent property* of the poem; the meaning relies on what is written in the lyric but cannot but pulled from any specific line or stanza; it is not contained inside the verse but it is a property outside of it. The 'doubleness'—I lack a better word—due to the length and underlying pull of the metaphor increases the poems complexity, essentially adding more dimensions to it, which are separate but reliant on what is written; they are emergent.

A second illustration comes from a much more humble source. I wrote the following poem.[55] Read the following poem without seeing its title, and then read it again after the title is revealed (below):

> After many Summers scorched the sides,
> ripped harsh sunburns on a spot-patched roof,
> and cracked the nearby earth until it cried;
>
> After Autumn's whipping wind and hail
> revealed the rotting wood across the walls,
> they tried to patch it up with plastic nails.

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[52] Ciardi, *How Does a Poem Mean?,* 7.

[53] Ciardi 341.

[54] It has always seemed to me that the pause at the end of the third to last line, prompted by the m dash, forms a sigh, a brief pause in which the poet shrugs his shoulders and raises his eyebrows gently, resigning himself to the decision he has already made—a neutral feeling but a recognition that one path was chosen and not the other.

[55] And I am only confident enough to share it because it recently won second place in *The Lyric* formal poetry magazine's collegiate contest; but I'm still squeamish placing my own work so close to Frost's.

After Winter bowed the windows wide
and broke the floorboards in a snap of cold,
they saw the weakness of the space inside.

And when Spring sprung? A final squall,
that grew to torrents, then a flooding swirl—
they found that homes without foundations fall.

After finishing the poem, I looked up and realized what I was really writing about; I called it "The Marriage." Most of my images are simple, most of my meter regular, most of my patterning expected. The main success in this poem is, I think, the relationship I built between poem and title; by revealing what I was "really writing about" I created the space in a readers mind to re-evaluate every image as a new metaphor for the breakdown of a marriage. The title took the simplicity of the poem and twisted it; by turning the entirety of the work into a metaphor, the complexity increased because each image and each smaller phrase immediately contained another. In this way each image was 'doubled' (using Ciardi's term again) but, additionally, in viewing the poem holistically, the entirety of the lyric was shifted into an alternate dimension of meaning.

It is possible to diagram this shift in meaning, or 'doubleness' with example of a few single images. Here is Dylan Thomas's "A Refusal to Mourn the Death, by Fire, of a Child in London:"

Never until the mankind making
Bird beast and flower
Fathering and all humbling darkness
Tells with silence the last light breaking
And the still hour
Is come of the sea tumbling in harness

And I must enter again the round
Zion of the water bead
And the synagogue of the ear of corn
Shall I let pray the shadow of a sound
Or sow my salt seed
In the least valley of sackcloth to mourn

The majesty and burning of the child's death.
I shall not murder
The mankind of her going with a grave truth
Nor blaspheme down the stations of the breath

With any further
Elegy of innocence and youth.

Deep with the first dead lies London's daughter,
Robed in the long friends,
The grains beyond age, the dark veins of her mother,
Secret by the unmourning water
Of the riding Thames.
After the first death, there is no other.

This poem is a rather short (24 line) poem of four stanzas of six lines each. The rhyme scheme is quite regular (abcabc) with the short lines in each stanza rhyming bb. In the first stanza, all the rhyme words are feminine, and in the second, masculine.[56] The general theme of the poem is Thomas's elaboration that

> he will not mourn needlessly the death of those who are absorbed into the mystery of Nature. In particular, he will not make an elegy for the innocent youth who died in a London fire, for she has escaped the deaths-in-life which the long-lived experience; she will die only the one time.[57]

The closing line is memorable for two reasons. First, it is a succinct statement complete within one line of the lyric, not unlike Seneca's famous 'sententiae.'[58] The compressed nature of this line is enhanced by its contrast to the rest of the work, which is composed of long, rhetorical units spanning as much as thirteen lines. Secondly, the line is memorable because, as Louise Murdy notes, "the literal clarity of the line veils an ambiguous implication. Specifically, does 'after the first death, there is no other' imply a pessimistic philosophy of mortality, or a Christian philosophy of immortality?"[59]

By inserting this ambiguity into the very last line of the poem (which is, strangely, also the most clear statement in the whole lyric) and by not just 'coming out and saying' something definite about death, Thomas "makes it necessary and possible for the reader to take part in the realization of the metaphoric statement and thereby to become an

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[56] Louise Murdy notes that Thomas pronounces 'flower' and 'hour' each as two syllables on page 70 of 'Sound and Sense'.

[57] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 71-72.

[58] A Sententia is a figure of argument in which a wise, witty, or pithy aphorism is used to sum up the preceding material.

[59] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 72.

actual participant in the poem."[60] Additionally, Thomas involves the reader in the lyric by creating metaphors that demand realization.

In the second stanza of "Refusal to Mourn," Thomas writes, "and I must enter again the round/ zion of the water bead/ and the synagogue of the ear of corn". This is an especially rich pair of metaphors, and is more complex than the simple "x=y equation of a regular metaphor, [though] the reader still makes use of the given information to 'solve' for the unknown or the thing suggested."[61] What Thomas has given us in each metaphor is a ratio with three known parts, diagramed by Ciardi below:

Man, water bead (raindrop), round Zion
And
man, ear of corn, synagogue
OR:

$$\frac{raindrop}{X} \quad :: \quad \frac{the\ man}{X}$$

And

$$\frac{ear\ of\ corn}{X} \quad :: \quad \frac{the\ man}{synagogue}$$

As Ciardi concludes: "X in each case, of course, is the earth, which is equated with Zion (the place of origin and return) for the drop of rain, and the synagogue (source of sustenance and roots) for the corn plant, as the earth is the source of roots and sustenance, and place of return also for the poet (242)." But the elaborateness of this metaphor relies on the images engaging the reader enough so that she understands almost immediately what X signifies; otherwise the metaphor is too complex and is a stumbling block. The poet counts on the reader to intuit the unmentioned. The metaphor reaches out from the page and hooks the mind of the reader, 'proving' that the individual lyrics, though static on a page, do not exist as 'closed systems;' rather they are open, without boundaries.

In his *Explorations in Poetics,* Benjamin Harshav, points out that metaphors cannot be limited to single words, to the boundaries of a sentence, or to really any discrete, static prefabricated 'unit' with limited boundaries (as we have seen in the examples above).[62] He writes:

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[60] Ciardi and Williams, *How Does a Poem Mean?*, 242.

[61] Ibid., 242.

[62] I found Harshav's work extremely late in my research, and wish I had found him earlier. In many ways, I feel that Harshav validates much of the points I have hesitantly made in this thesis, about the usefulness of using terms like emergence, nonlinearity, and dynamical behavior to describe aspects of poetry.

> If a metaphor is a two-term relation, any of its terms may cover much more than a word in a text. It is often an open-ended relation rather than a fixed unit. A whole sentence may be literal when read independently and become metaphorical in its wider context. A metaphor in poetry may begin with a connotation of a word and grow into a central object in the fictional situation of a poem.[63]

'Non-linear,' another term from complex systems science, is extremely useful in understanding these tendencies of metaphor. As Harshav explains,

> The point is that metaphor is not a linguistic unit but a text-semantic pattern, and semantic patterns in texts *are not segments of the linear text* and cannot be identified with units of syntax. *Isolating metaphor as a linguistic unit would mean separation the processing of language from a reader's processing of texts*, including the construction of fictional characters, settings and 'worlds,' as projected in the works of literature. (…) In short, we must observe *metaphors in literature not as static, discrete units, but as context-sensitive, dynamic patterns,* changing in the text continuum, relating to specific (fictional or real) frames of reference and dependent on interpretations.[64]

Harshav's statement immediately prompts both parallels between poetry and complex systems and more questions about the nature of metaphor. The term 'non-linear' and the idea of a non-linear system is key. Recalling Lui Lam's work, non-linearity in a system means that the input is not directly proportional to the output. To me it seems like this is simply another way of describing the complexity of a metaphor found in a poem. But it does prompt questions, which, though I may not have time to explore them in depth here, are rich with curious implications. What would it look like, or mean, to examine metaphors mathematically or model their behavior? Through his chapter on 'Metaphor and Frames of Reference,' Harshav postulates some ideas of the physical and linguistic relationship between frames of reference (literal vs. fictional). By employing many terms pulled from mathematics and science, Harshav is able to describe properties of metaphor but also to observe, and communicate, the *gaps* in metaphors; the 'empty space' of Ciardi's 'unknown' is equally as important as the words upon the page when it comes to metaphor, and using words from physical science may be helpful.

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[63] Harshav, *Explorations in Poetics*, 34.
[64] Ibid., 34. Italics mine.

Taken together, Harshav's and Ciardi's comments certainly remind one of some of Cillier's list of characteristics of a complex system, presented in chapter one, specifically:

    a.   The system is open; the borders cannot be drawn.
    b.   The system can never be in a state of equilibrium; instead it is dynamic.
    c.   The system is greatly influenced by its history.

In terms of patterning, as we have seen, the properties of nonlinearity and self-similarity are present in several ideas connected to metaphor. The continuity of metaphor—the comparison or theme in one line is often echoed throughout the whole poem—and the feeling and mental processing of the metaphor—reliant on the order in which the images are presented—are inseparable from the formal elements of the poem. Additionally, in a successful poem, the complexity of the work increases when it illustrates self-similarity between the feeling and theme gleaned from the poem as an entire holistic unit. Metaphors that are universal also allow poems to reach over their immediate theme to extensive historical timeframes: a poem about looking at a single rose might become a poem about all love in the history of the world. This expansion of thought from a single line (or metaphor or rhyme) to a universal concept is a display of the process of self-similarity in an abstract sense; one idea is reflected in another on a different scale.

The complexity of metaphor is also relevant to the discussion of complex systems because of the way in which reading a poem unravels the meaning over the course of the poem. In many ways the performativity of lyrics makes them systems that develop over time. Ciardi writes, "Line by line and passage by passage the poem comes… like a piece of music, it exists as a self-entering, self-generating, self-complicating, self-resolving form."[65] His description is a bit over the top here but he is right that large-scale metaphors rely on the reader's process of reading the poem and progressing through the series of images and/or other sensory ideas to be effective. The complexity enters when we realize that not only must the images be compared in a an extended metaphor, but they must be communicated in such an *order* that the reader is able to assemble them into a single, greater image, that can then be related to the first. In Frost's poem, as we have seen, the description of two roads grows, eventually, into such a grand (and ultimately

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[65] Ciardi and Williams, *How Does a Poem Mean?*, 108.

complex) theme that it is nearly impossible for the reader not to see the divergence of paths as a metaphor for something greater (e.g. life, choices, free will, a decision that matters, or a decision that doesn't matter). "The communication of a poem is an involvement," as Ciardi writes, and the observation is astute, particularly when considering the act of reading a poem (either silently or aloud) for the first time.

Part Four:

Unexpectedness

Well, that's the trick: the sudden unexpectedness inside the overknown.
—Heather McHugh

In Poetry I have a few Axioms, and you will see how far I am from their Centre. 1st I think Poetry should surprise by a fine excess and not by Singularity—it should strike the Reader as a wording of his own highest thoughts, and appear almost a Remembrance—
—John Keats (in a letter to John Taylor, 1818)

As a poem is read, it both immediately (from the first line) and gradually (over the course of several lines or stanzas) arranges expectations. Expectations might be built on the structure of the poem, the rhyme scheme, the connotation of individual words or phrases, the title of the poem, the etymology of certain words, and reader's memories. In this section I show that the unexpected-ness of a lyric poem can make it complex; the title can do this, the turn at the end of the sonnet, the unexpected return to a rhyme scheme that seems to immediately tie everything together; and so on. I also draw a parallel with the idea of unexpected results and the difficulty of predictability in complex systems.

It is useful to first engage with the phenomenological explanation, or lived experience, of surprise and unexpectedness. In his paper *Complexity and the phenomenological structure of 'surprise,'* Darren Stanley writes:

> Unexpectedness as a lived human experience is not some phenomenon limited to one particular type of experience. (…) Surely, the experience of surprise might be taken to be a rare event—perhaps even something special. (…) It is an unexpected event or happening for which we might be unprepared. Yet, this is paradoxical since we must be prepared,

neurologically, to be surprised! Nonetheless, there is still a sense that surprise can be by design. That is, surprises can be deliberately planned events to catch someone else "off guard."[66]

In poetry (at least in my critical understanding) there is, absolutely, design; the poet plans the points of surprise and builds up to them, creating expectation and then delivering in an unexpected way, much in the way humor is effective. Stanley notes that the lived experience of surprise is an emergent phenomenon, and he identifies the difficulty in understanding how and why it works:

> A self-organized critical view of surprise then has this to say: "surprise" is an emergent phenomenon that manifests itself at a level different from the interactions of (at least two) different systems, as well as the systems themselves. Through the interactions, the possibility of surprise is brought forth through some "push" into novelty. At some perceptual threshold, the experience of "unexpectedness" is felt: below that threshold, surprises of "all sizes" or "measures" continue to happen, although they remain outside of the narrow bandwidth of human consciousness.

Some poetry produces surprise, or lifts itself into novelty, because of the subject matter; others because of the metrical variation, and still others because of the dialogue between different images in the poem itself. In many cases the property of unexpectedness—and thus the moment of surprise—is reliant on the reader having never read the poem before.[67] Keats captures this moment in poetry in the latter half of one of his most famous sonnets, "On First Looking Into Chapman's Homer:"

> …Then felt I like some watcher of the skies
> When a new planet swims into his ken;
> Or like stout Cortez when with eagle eyes
> He star'd at the Pacific—and all his men
> Look'd at each other with a wild surmise—
> Silent, upon a peak in Darien.

This intake of breath, which Keats' compares to what discovering a new planet would feel like, is the marker of unexpectedness in poetry. Even given all the "rules" about exploration of the world or of the night skies, moments of realization or of discovery are practically impossible to predict, just like emergent properties in complex systems. Even

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[66] Stanley, *Surprise.* Web.

[67] Because this is so frequently the case, I request that, if the reader of this thesis is familiar with the poems that follow in this section, they attempt to remove their preconceived notions and experience the poem 'for the first time' again….though I know this is quite impossible.

if we could know all the constituent parts of the poet's intention, the connotations of every single word, and each individual reader's personal history, we would hardly be able to predict how or when a poem surprises us. Moments of unexpectedness are moments of emergence.

I would like to use Dorothy Parker's poem *One Perfect Rose* to illustrate one type of unexpectedness in poetry:

> One Perfect Rose
>
> A single flow'r he sent me, since we met.
> All tenderly his messenger he chose;
> Deep-hearted, pure, with scented dew still wet -
> One perfect rose.
>
> I knew the language of the floweret;
> 'My fragile leaves,' it said, 'his heart enclose.'
> Love long has taken for his amulet
> One perfect rose.
>
> Why is it no one ever sent me yet
> One perfect limousine, do you suppose?
> Ah no, it's always just my luck to get
> One perfect rose.

Parker's usual dry hilarity here is used to surprise the audience in the last stanza. This poem's success lies in the fact Parker has chosen a cliché image and metaphor—the rose as a symbol of love—and essentially pretended, for the first two stanzas, to submit to the cliché, pointing it out ("Love long has taken for his amulet/One perfect rose) and playing with it. But the last stanza reveals the speakers dismissal (in Parker's characteristic calm pithiness) of the symbol in favor of a nice car. If a reader were to look solely at the first two stanzas, having never read *One Perfect Rose* before, they would be not able to predict that Parker was going to twist the image of a rose into one of material need, punning on the symbol itself. Conversely the emergent properties (which I see as the sarcastic tone and the pithiness) are only heard, and seen, after the poem has been read through completely. Additionally, once the reader has finished the poem and laughed, the last stanza can never again surprise them.

Stanley's exploration of surprise as an emergent property in a complex system is useful once again:

> Emergence is about a novel phenomenon that arises from the interactions of parts of a system and is not found in the parts themselves. Emergent phenomena, thus, are inherently unpredictable. Moreover, emergence cannot be understood by attending to the parts of a larger system nor their interactions. Emergence is something more. That is, emergence is not readily understood from the self-organizing interacting parts of a system that give rise to a new phenomenon. In other words, *the level of observation is important to understanding emergence.*[68]

This last point is crucial. The role of the reader is thus an integral part of the poetic system; in fact, so integral, that we can understand the function of the reader as the 'activator' of a static poem on a page. The emergent properties of the poem exist, after they are 'activated' by the reader, in the reader's mind itself.

Does this imply that print poetry is a simple system until it is read, and complex once it is 'activated' by a reader? In my interview with her, I asked N. Katherine Hayles what she thought of this this question. She responded affirmatively, confirming that "the emergent properties if any are going to happen in the mind of the reader, so for a complex system you should understand the poem, the context, and the reader all together."[69] Perhaps this is true, but it's similar to the question 'If a tree falls in the forest and there is no one to hear it, does it make a sound?' and it doesn't strike me as an immediately useful way to discuss lyric poetry. Of course, this seems to be the trickiest part about explaining predictability, unexpectedness, and emergence: they are slippery to define because they frequently seem reliant on the knowledge of the observer.[70]

A unique example of a lyric that allows us to come into dialogue with this idea is Robert Frost's "Stopping by Woods on a Snowy Evening:"

> Whose woods these are I think I know.
> His house is in the village though;
> He will not see me stopping here
> To watch his woods fill up with snow.

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[68] Stanley, Web. My italics.
[69] Hayles, N. K. 2013 interview.
[70] In the same interview, Hayles confirmed my confusion, saying that in some of the early artificial life journals this was discussed, as theorists searched for a "satisfactory explanation of emergence in particular and it turns out to be really slippery to define because it's usually defined as something emerging from the system that can't be predicted in advance, but putting it that way makes it seem dependent on the knowledge of the observer, and so it gets tricky."

My little horse must think it queer
To stop without a farmhouse near
Between the woods and frozen lake
The darkest evening of the year.

He gives his harness bells a shake
To ask if there is some mistake.
The only other sound's the sweep
Of easy wind and downy flake.

The woods are lovely, dark and deep,
But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep.

Here, the key is that the last line surprises us because we have an expectation that there will be a different word used to rhyme with 'sleep'. Then, there is a second level of surprise because, although the line is repeated word for word, the reader intuits it to mean something different from the preceding line. This is not something that a reader would have been able to predict (imagine asking a reader if a line, repeated, could mean something different). Ciardi writes:

> The first time Frost writes 'and miles to go before I sleep' there can be little doubt that he means 'I have a long way to go yet before I can get to bed tonight.' The second time he says it, however, 'miles to go' and 'sleep' are suddenly transformed into symbols.[71]

Ciardi's point here cannot be taken lightly. How did the repetition of the last line turn it into a symbol? When the line line recurs, "it recurs with a difference, and part of that difference is the measure and shaping of time itself."[72] The symbol, or metaphor, of the repeated line, comes into being because of the lived experience of the poem and the performance that goes on within it. Ciardi asks the interesting question of whether or not Frost knew what he was going to do when he began writing the poem:

> Considering the poem simply as a piece of juggling one cannot fail to respond to the magnificent turn at the end, where, with one flip, seven of the simplest words in the language suddenly dazzle full of never-ending waves of thought and feeling; or—more precisely—of felt thought.[73]

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[71] Ciardi and Williams, *How Does a Poem Mean?*, 9.
[72] McLane, "Twisting and Turning," Web.
[73] Ciardi and Williams, *How Does a Poem Mean?*, 10.

From the beginning of the poem, having only been introduced to a man in a snowy forest, one would not predict that poem is going to become a metaphor for human life, the exhaustion of man, and the perplexed relationship of humans to nature. It is an obvious example of a poem becoming more complex over time as it is read. Ciardi writes:

> There can be little doubt, in fact, that part of Frost's own pleasure in this poem was making the larger intent *grow out* of the poem rather than in tacking it on. It is in the poem's own performance of itself that the larger meaning is made to emerge form the specific incident.[74]

The repetition of the last line is the moment that prompts this unexpected shift in meaning, and it transforms the whole rest of the poem; suddenly, the "real" meaning of the poem emerges, and the reader understands that the man standing alone in the snow is much more than a character in a tiny personal drama. The term 'tipping point,' popularized by Malcolm Gladwell's book about crossing thresholds in complex behavioral systems, is useful in pinpointing the shift from narration to metaphor in the last line. Identifying the 'tipping point' is quite easy, particularly because the rules that Frost used to govern his composition were extremely simple. He chose an aaba, four line stanza, and committed to his scheme. By repeating a line and thus repeating a rhyme—a very small change, seemingly—he morphed the poem into different meaning.

These characteristics—of unexpectedness unpredictability, a tipping point and emergent properties—in Frost's poem are the sources of its poetic complexity, and the reader is able to experience the shifts along with the speaker in the poem. As Ciardi notes, "by not just 'coming out and saying' [whatever the meaning of the poem is] the poet makes it necessary (and possible) for the reader to take part in the realization of the metaphoric statement and thereby to become an actual participant in the poem."[75] Active participation allows the reader to experience a 'tipping point' and resultant meaning along with the speaker. The metaphor is complex and far-reaching, but Frost's topic in itself is quite simple.

So let's return to the subject matter of a poem. Some lyrics may present themselves in unexpected and complex ways when it comes to actual content. Emotional topics (like love, death, or grief) certainly have taken their place in the great annals of

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[74] Ibid., 6.
[75] Ibid., 242.

poetry; these subjects, as universal experiences, gratify most writers and readers. However, poetry is not usually successful if it merely—and simply—states that the speaker, for example, 'is in love' or 'is grieving.' Instead, readers look for poems in which the speaker/poet says something innovative, additional, or unexpected about the topic. I hypothesize that this type of unexpectedness can immediately make a poem more complex because it plays on multiple levels of expectation. Shakespeare's Sonnet 130 jars the reader immediately by dashing their expectations about a love sonnet from the first line:

> My mistress' eyes are nothing like the sun;
> Coral is far more red than her lips' red;
> If snow be white, why then her breasts are dun;
> If hairs be wires, black wires grow on her head.
> I have seen roses damasked, red and white,
> But no such roses see I in her cheeks;
> And in some perfumes is there more delight
> Than in the breath that from my mistress reeks.
> I love to hear her speak, yet well I know
> That music hath a far more pleasing sound;
> I grant I never saw a goddess go;
> My mistress when she walks treads on the ground.
>   And yet, by heaven, I think my love as rare
>   As any she belied with false compare.

Every image in this poem sets up an expectation and destroys it in either the same or the adjacent line. The reader is repeatedly surprised, because sonnet 130 stands in opposition to the more common sentiment of praise and over-praise in many other sonnets. After Shakespeare has spent twelve lines re-imposing expectations on the reader, he is then able to re-surprise the reader with the couplet, in which he redeems his own anti-praise of the subject of the poem.

If one has read this poem before, however, much of the unexpectedness is lost, and some readers lose appreciation for the complexity of the task Shakespeare sets for himself by re-evaluating the expectations within a single sonnet. For the bard's sake and also to illustrate a poem that does *not* contain any type of unexpectedness, I ask that the reader try to imagine that they have never read the following poem before. Here is Langston Hughes' *Dreams*:

> Hold fast to dreams
> For if dreams die

> Life is a broken-winged bird
> That cannot fly.
> Hold fast to dreams
> For when dreams go
> Life is a barren field
> Frozen with snow.

This poem has no moment that interrupts expectations. Instead, it fulfills, with each rhyme and each image, the reader's every expectation. For this reason there is no moment of unexpectedness and little resulting complexity. The reader can very nearly predict the images because the diction is simple and because Hughes presents the same idea in the two images (the first image of a bird in the first four lines, and the second of a field in the second four); the expectations built in the first part are merely repeated and the metaphors do not shift. There is little meaningful movement, and little development of complex ideas, throughout the poem. A paraphrase (perhaps "without dreams, life is drab") actually does capture most of what Hughes communicates in the poem.

Gerard Manley Hopkins' "Spring and Fall, to a young child" is an example of a poem that does illustrate complexity of subject matter as the reader moves through the poem. Hopkins' sets up an expectation of tone in the first few lines but drastically changes it as the lyric moves forward, making the ending quite unexpected:

> Margaret, are you grieving
>   Over Goldengrove unleaving?
>   Leaves, like the things of man, you
>   With your fresh thoughts care for, can you?
>   Ah! as the heart grows older
>   It will come to such sights colder
>   By and by, nor spare a sigh
>   Though worlds of wanwood leafmeal lie;
>   And yet you will weep and know why.
>   Now no matter, child, the name:
>   Sorrow's springs are the same.
>   Nor mouth had, no nor mind, expressed
>   What héart héard of, ghóst guéssed:
>   It is the blight man was born for,
>   It is Margaret you mourn for.

In Hopkin's short poem,
>   an adult, who knows suffering well, comes upon a young girl who is
>   crying because the leaves are falling from the trees in the wood called
>   'Goldengrove.' The adult thinks her grief trivial and childish, and rebukes
>   her for wasting her tears on trees, prophesying that life soon will give her

more serious things to cry about. But she continues nevertheless to cry, asking *why* the leaves have to fall. The poem turns on the adult's response to the child's 'Why?'[76]

And by the end the poem, the speaker is ashamed at first rebuking Margaret's tears, and the tone of the poem has shifted. The speaker seems to look out with window with Margaret and recognize that that adult grief and child grief are one, though only an adult might know *why* the tears come. Vendler analyzes the shift in tone further, identifying that both the speaker and Margaret "lament the consequences of the fall of man—the temporality and mortality of all things. (185)"

The movement in tone is what allows the meaning of this poem to emerge, however, and Vendler astutely identifies the movement from 'bantering disbelief' in lines one and two all the way to the tone of 'regret and impatience' in the middle of the poem, to 'self-reproach, universal despair, and grief in the last three lines.[77] The poem is complex because during the space of 15 lines the speaker has realized and developed an emotional state. Lui Lam's description of an 'active walk' is handy in labeling this process of being changed by the poem as the poem proceeds, which is a source of the complexity of Hopkins' lyric. Lam writes, "in an Active Walk, a particle (the walker) changes a deformable potential—the landscape—as it walks; its next step is influenced by the changed landscape."[78] As the reader progresses through the tones present in the poem, they develop along with the speaker and are able (even forced) to feel the shift from playfulness to sadness. If a reader were to only read the first four lines of the poem, they would not be able to predict such a shift. But because the reader essentially takes on the role of the speaker in the beginning of the poem, it engages the reader forces her (the reader) to become an 'active walker' in the lyric. Hopkins, in pressing the role of the speaker, and of Margaret, onto the reader, makes the reader experience the change from laughing and bantering to gentle, deep sadness; the rather somber ending is quite unpredictable from the beginning of the poem, but is successfully because the reader has moved through the system being changed by each line, each step, and each shift in tone.

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[76] Vendler, *Poems, Poets, Poetry: An Introduction and Anthology*, 184.
[77] Ibid., 184.
[78] Burguete and Lam, *Science Matters: Humanities as Complex Systems.*, 21.

Rather like Frosts' poem, too, the last lines of this poem seem to act as a rather unpredictable but critically important 'tipping point.' When we read the last lines, the repeated rhyme ('for,' at the end of both lines) and the repetition of the name Margaret instantly sends us back to the beginning of the poem, where Hopkins' repeated the word 'you' in lines three and four, and started off with Margaret's name in line one. We, as first-time readers, are given all the points throughout the poem, but the last lines allow us to connect the dots, and see the emergent shape of the poem. We see the shape present in the poem because Margaret, and the speaker, also realize it; the moment of unexpectedness happens for all parties. Margaret's grief is potent because it signals a phase in the development of a human being's understanding about death and loss; only because Margaret has already reached a certain level of maturity can she feel sorrow at the onset of autumn. But still, the speaker knows what she does not (namely, that as she grows older she will continue to experience the same grief, but with more self-consciousness about its meaning) and thus Hopkins' can provide the tipping point in which knowledge is revealed. What is so remarkable about this stage is that Hopkin's even sets up the moment of unexpectedness explicitly and also told the reader they, too, already know what he is going to say: "Nor mouth had, no nor mind, expressed/ What héart héard of, ghóst guessed;" while the "mouth" cannot say why the tears come, nor the mind even articulate it, a kind of understanding nevertheless materializes for Margaret, the speaker, and the reader. It is a whisper to the heart and ghost, an intuitive notion of the fact that the grief of autumn reflects one's own mortality.

What strikes us as so unexpected about the last few lines is also the immediate revealing of this philosophical truth; the last line is a 'sententia' and it expresses a profound truth in a simple and immediate way, instantly summarizing the "point" of the poem and providing it with a format in which to go back and reevaluate all the other images.

Part Five:

'Layers' of Complexity and Intertextuality

"No man is an island, entire of itself; every man is a piece of the continent, a part of the main. If a clod be washed away by the sea, Europe is the less, as well as if a promontory were, as well as if a manor of thy friend's or of thine own were..."
—*John Donne*, "Meditation XVII"[79]

"The essential peculiarity of poetry (…) is that the full appropriate situation is not present."[80]
—I. A. Richards, *Science and Poetry*

This section will not have time to explore theories of intertextuality or literary influence in as great a depth as they deserve: that work has been left to texts like Jay Clayton's *Influence and Intertextuality in Literary History* and Harold Bloom's *The Anxiety of Influence*. Instead I will take on a much more humble task and try to point out via example that poets 'talk' to other poets over time, via reference and allusion (i.e. demonstrate some examples of intertextuality). Interactions occur between parts of a single text (as we've seen in several examples of lyrics previously) as well as over/through time. There are some poems that *overtly* talk to other poems as well as ones that more subtly allude or reference previous works. Though there are many academic and literary texts about this topic, and it is rather quite clear to scholars, and to most lovers of literature, that many lyric poets frequently read their predecessors and are able to reference and 'talk to' the poetry that came before them.

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[79] See http://www.online-literature.com/donne/409/ for the complete text.
[80] Richards, *Science and Poetry*, 29.

I wish to point these avenues of intertextuality out in order to illustrate the similarities to several properties of a complex system that have not yet been discussed. I am referring to the points that Paul Cilliers made that

a. Elements primarily interact with other elements that are in their near vicinity (not necessarily in a spatial sense); however, they can act with other elements that are further away as well
b. The system can never be in a state of equilibrium; instead it is dynamic
c. The system is greatly influenced by its history

Thus lyric poetry is complex because of its rich tradition and thousands of years of history. Interesting, in contemplating the idea that the 'system' of a lyric poem might 'never be in a state of equilibrium,' we also come to understand that intertextuality is not something that will ever stop; history will only ever be added to. What will also change, and complicate intertextuality even further, is a modern reader's obvious distance from whatever poetry came before. The period and spirit of the times, and the cultural/religious underpinnings of the poem, can affect how it is read and understood; thus appreciation and understanding of the poem may change as we move forward. Some poetry, is seems, does have a universal power, but in other cases because of the specificity or proximity to a certain cultural or linguistic tradition, the audience is limited. Certainly, too, the very meaning of poetry can change over time, based on how the lyric is read: perhaps the rhyme is no longer a rhyme in colloquial American English; perhaps the connotation of certain words and their implication has changed.

All these layers of intertextuality are available for a poet and a reader to rely upon. In this section, I point out that intertextuality make a poem more complex by adding multiple levels of meaning to a single lyric, extending a static poem on a page through dimensions of time. This is easily understood if we consider a single lyric poem an open system, which is affected by its environment and outside influences. For example, a poem in the New Yorker, is placed in one frame of reference (itself on the page) but the reader also makes assumptions about it because the reputation—whatever it may be to an individual reader—of the magazine itself influences the poem. Additionally, if the poem is placed, physically, next to an article about the same subject, a reading of it might be influenced by the content or style of the article. Harshav writes:

> Frames of reference, or information obtaining in them, may be constructed and deconstructed as a reading unfolds, or inconsecutive readings….But the same frame of reference may receive additional material in other segments or outside the text. Thus, a passage describing a character or an event may be supplemented or contradicted in later passages of the same text. Or a newspaper passage referring to a blast in Beirut may be supplemented or contradicted in previous, later, or outside information.[81]

Harshav notes here, and later, the idea that a poem is *not* simply something printed on the page: a poem is an event, and "it happens when a poet and a reader meet inside the form in such a way that the reader makes real for himself those connections between thing that the poet saw as real in the construct of his own world and as able to be communicated."[82] The reader enters the complex system of the poem by using her intellect, imagination, and memory, just as the poet has used all these in composition of the poem. Reading a poem is an act of participation in the poem that engages the reader with the whole history of poetry that she has read before, that the poet has read before, and that the poet is referencing. Taking the natural occurrence of intertextuality along with all the other types of interaction within a text that have already been discussed, Harshav summarizes the sorts of textual connection:

> there may be simultaneously a global relation between two frames of reference (two brothers in a novel or two terms of a metaphor) as well as local relations between their parts in different contexts as well as any other kind of patterning: of stylistic, semantic, syntactic, morphological, or sounds aspects of the language used. Such relations may include metaphorical transfer as well as other kinds of semantic and non-semantic interactions. And they may include a 'dynamic' aspect, employing the sequential nature of a text for the sake of changing relations (and changing the reader's experience and expectations).[83]

Harshav's use of the word dynamic here is very similar to the way in which we can understand poetry to be a dynamic system. Harold Bloom is the forerunner in this discussion; he investigates how poetry stretches across time and how poets 'talk' to one another, reference each other, and are subliminally influenced by each other. Both Bloom and Harshav make it obvious that poetry does not exist in a vacuum but also demonstrate that the relationship between poems can vary widely. To illustrate just some of the

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[81] Harshav, *Explorations in Poetics*, 42.
[82] Ibid., 12.
[83] Ibid., 43.

variety, below are a few poems that overtly 'talk' to one another. Here is William Carlos

Williams' 1934 poem "This Is Just To Say:"

> I have eaten
> the plums
> that were in
> the icebox
>
> and which
> you were probably
> saving
> for breakfast
>
> Forgive me
> they were delicious
> so sweet
> and so cold

Kenneth Koch responded to this poem in 1962 with his own work, "Variations on a
Theme by William Carlos Williams:"

> 1
> I chopped down the house that you had been saving to live in next
> summer.
> I am sorry, but it was morning, and I had nothing to do
> and its wooden beams were so inviting.
>
> 2
> We laughed at the hollyhocks together
> and then I sprayed them with lye.
> Forgive me. I simply do not know what I am doing.
>
> 3
> I gave away the money that you had been saving to live on for the next ten
> years.
> The man who asked for it was shabby
> and the firm March wind on the porch was so juicy and cold.
>
> 4
> Last evening we went dancing and I broke your leg.
> Forgive me. I was clumsy and
> I wanted you here in the wards, where I am the doctor!

Koch's sardonic but playful poem responds directly, and explicitly (from title onwards)

to William's poem, in its style and phrasing, but this is only one type of intertextuality,

when there are multiple types found in many other formats. The Williams-Koch type of intertextuality reveals they way a poem might *completely rely* on work before it. Imagine reading Koch's poem without having read Williams': it wouldn't be effective or clever. Koch's lyric adopts the syntactical patterns of Williams' poem as well as implying the title, making it seem like Koch is almost quoting Williams' work. In his essay "Intertextuality and the Discourse Community," James Porter writes:

> We can distinguish between two types of intertextuality: iterability and presupposition. Iterability refers to the 'repeatability' of certain textual fragments, to citation in its broadest sense to include not only explicit allusions, references, and quotations within a discourse, but also unannounced sources and influences, clichés, phrases in the air, and traditions. That is to say, every discourse is composed of 'traces,' pieces of other texts that help constitute its meaning. . . . Presupposition refers to assumptions a text makes about its referent, its readers, and its context—to portions of the text which are read, but which are not explicitly 'there.' . . . 'Once upon a time' is a trace rich in rhetorical presupposition, signaling to even the youngest reader the opening of a fictional narrative. Texts not only refer to but in fact contain other texts.[84]

Porter's distinction between types of intertextuality allows us to see that Koch's poetry engages in multiple ways with Williams'. There is both iterability—Koch uses the same "I have…" sentence structure, and even quotes by saying "forgive me"—and presupposition—Koch is obviously counting on his reader's to have read "This Is Just To Say."

A similar example of explicit intertextuality can be found when we compare John Donne's "Holy Sonnet XIV" and Mark Jarman's "Unholy Sonnet 1:"

Holy Sonnet XIV

Batter my heart, three-person'd God, for you
As yet but knock, breathe, shine, and seek to mend;
That I may rise and stand, o'erthrow me, and bend
Your force to break, blow, burn, and make me new.
I, like an usurp'd town to another due,
Labor to admit you, but oh, to no end;
Reason, your viceroy in me, me should defend,
But is captiv'd, and proves weak or untrue.
Yet dearly I love you, and would be lov'd fain,

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[84] Porter, "Intertextuality and the Discourse Community," Web.

But am betroth'd unto your enemy;
Divorce me, untie or break that knot again,
Take me to you, imprison me, for I,
Except you enthrall me, never shall be free,
Nor ever chaste, except you ravish me.

Jarman's response:

Unholy Sonnet 1

Dear God, Our Heavenly Father, Gracious Lord,
Mother Love and Maker, Light Divine,
Atomic Fingertip, Cosmic Design,
First Letter of the Alphabet, Last Word,
Mutual Satisfaction, Cash Award,
Auditor Who Approves Our Bottom Line,
Examiner Who Says That We Are Fine,
Oasis That All Sands Are Running Toward.

I can say almost anything about you,
O Big Idea, and with each epithet,
Create new reasons to believe or doubt you,
Black Hole, White Hole, Presidential Jet.
But what's the anything I must leave out? You
Solve nothing but the problems that I set.

Here, Jarman's work, formed in pithy jest like Koch's, responds to Donne's poem on multiple intertextual levels, too. Both poems are sonnets, of course, and both contain forceful repetition of phrases. In terms of content, both portray a struggle with the idea of God; Jarman's is a modern twist while Donne's is of course a religious 16th century commentary on his own relationship with God. Changing perceptions of religion provide material on which Jarman riffs on Donne's battle between sex and chastity, reason and passion, and the problems that God simultaneously presents and solves.

T.S. Eliot's comments in his cornerstone essay 'Tradition and the Individual Talent' essay are immediately applicable to our understanding of multiple types of intertextuality, too:

No poet, no artist of any art, has his complete meaning alone. His significance, his appreciation is the appreciation of his relation to the dead poets and artists. You cannot value him alone; you must set him, for contrast and comparison, among the dead. I mean this as a principle of aesthetic, not merely historical, criticism.

Eliot's own work is illustrative of his intense awareness of his role and placement in the canon of poetry. In his lengthy lyric poem *The Wasteland*, Eliot samples Wagner, Shakespeare, Greek mythology, and everything in between; his poem is *so* intertextual and reliant on knowledge of other words that it requires footnotes for obscure and important allusions. Eliot's appreciation of all that came before him then force the reader to research the levels of meaning replete within *The Wasteland* because otherwise, they miss out on some layers of complexity.

But as Bloom points out in many of his works, even when a poet is *not intentionally* referencing a different lyric (or epic, or myth, or any other type of work) she is naturally anxious about her place within the times and how to create original work within the massive pool of poets behind her. Poetry, once written, exists in relation to all other poems; similarly, a reader always responds to new poetry with all other poems she has read in mind, either consciously or not. Many of the poems used as examples in other sections are brimming with allusion and history. For example, Robert Frost's "Stopping By Woods On A Snowy Evening" alludes to Dante's *Divine Comedy*, specifically the *Inferno*, in form and in content. Dante's Comedy is written in terza rima (a rhyme pattern of aba bcb cdc, etc.) and it's not difficult to recognize Frost's quatrains as a variation of this form, and, recalling the dark woods of Frost's poem, the similarity to the opening lines of the *Inferno* is quite obvious:

> Midway upon the journey of our life
> I found myself within a forest dark,
> For the straightforward pathway had been lost.[85]

In the case of Frost's poem, the allusion to Dante is less overt than the other examples of reference I have provided. However it is equally as effective in demonstrating that intertextuality can inform a lyric and increase the complexity of a poem. A reader familiar with Dante might understand Frost's poem differently than an individual who had never read the *Inferno*. Dante's lines refer not only to his biographical/metaphorical but also his character's physical placement within the poem; he situates himself in a forest on the edges of Hell but also establishes the idea of 'dark night of the soul,' and point at which he despairs of finding God. These themes consequently inform Frost's

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[85] This English translation is borrowed from http://tinablue.homestead.com/literaryallusion.html and loses the rhyme scheme.

poem. "Stopping By Woods On A Snowy Evening," already imbued with several levels of meaning, takes on an even more depressive sense of emotional isolation.

Some instances of complexity arising from intertextual relationships are even more far-reaching. There are many images that have become commonplace but originated from individual poems. For example, the creepiness and solemnity of images of owls, yew trees, and graveyards come from Tomas Gray's "Elegy Written in a Country Churchyard;" the phrase "gone with the wind" is straight from Ernest Dowson's "Cynara." These two poems are less well known than, say, Dante's *Inferno*, but can appear in intertextual relationships just as frequently. However, if a poet was to use the phrase "gone with the wind" these days, few people would think of Dowson; instead they would think of Margaret Mitchell, or, even more likely, of Vivien Leigh and Leslie Howard. This confirms that complexity in poetry can arise from its history, and demonstrates that 'the system can never be in a state of equilibrium; instead it is dynamic:' the poetic meaning changes as the incorporated allusions themselves change.

No matter what the scale of intertextuality—local or global, overt or subtle—it is clear that relationships between texts produce multiple layers of meaning and can influence the complexity of individual lyrics. All together, the poetry of the world forms a massive web of meaning, where poets and poems connect, gloss, and interact with one another.

In the next chapter, I employ all the techniques and observations I have made over the last sections in an extended analysis of several of Dylan Thomas's poems. I attempt to explicate the sources of poetic complexity in his work by comparing three different poems and identifying similarities and differences in everything from metrical choices to intertextual reaches of each of the lyrics.

Chapter Three:

Applications:

Some Poems of Dylan Thomas

Dylan Thomas was drunk with melody.
—Robert Graves

In this chapter, I analyze three poems by Dylan Thomas, "Fern Hill," "And Death Shall Have No Dominion," and "Do Not Go Gentle Into That Good Night." These poems are recognized as great and, more to the point, complex—many articles and books have been written seeking to understand Thomas on a deeper level. I wanted to provide analyses of several poems by a single author to show continuities within a single poet's work as well as tendencies in their language choices. Additionally, I felt some biographical information assisted in a 'complex systems' analysis of these poems, as the openness of each system to all the poems before it is quite obvious in some circumstances.

In these analyses I try to incorporate all aspects of what I've learned about meter, form, rhyme, rhythm, and poetic interpretation, as well as emergent properties, self-reference, and behavior of a system as a whole. I will follow the general order of the previous sections and move up in scale, discussing the complexity of individual words, verbal phrasing, the structure/form of the poem, and the layers of intertextuality. I have made an effort to answer the questions about how difficult the poetry is to describe, how difficult it may have been to create, and what 'degree' of difficulty it might be. Whether or not this synthesis of vocabulary and concepts is beneficial and/or useful to the understanding of these poems will be commented on in concluding chapter.

Fern Hill

Now as I was young and easy under the apple boughs
About the lilting house and happy as the grass was green,
        The night above the dingle starry,
                Time let me hail and climb
        Golden in the heydays of his eyes,
And honoured among wagons I was prince of the apple towns
And once below a time I lordly had the trees and leaves
        Trail with daisies and barley
    Down the rivers of the windfall light.

And as I was green and carefree, famous among the barns
About the happy yard and singing as the farm was home,
        In the sun that is young once only,
                Time let me play and be
        Golden in the mercy of his means,
And green and golden I was huntsman and herdsman, the calves
Sang to my horn, the foxes on the hills barked clear and cold,
        And the sabbath rang slowly
    In the pebbles of the holy streams.

All the sun long it was running, it was lovely, the hay
Fields high as the house, the tunes from the chimneys, it was air
        And playing, lovely and watery
                And fire green as grass.
        And nightly under the simple stars
As I rode to sleep the owls were bearing the farm away,
All the moon long I heard, blessed among stables, the nightjars
        Flying with the ricks, and the horses
                Flashing into the dark.

And then to awake, and the farm, like a wanderer white
With the dew, come back, the cock on his shoulder: it was all
        Shining, it was Adam and maiden,
                The sky gathered again
        And the sun grew round that very day.
So it must have been after the birth of the simple light
In the first, spinning place, the spellbound horses walking warm
        Out of the whinnying green stable
                On to the fields of praise.

And honoured among foxes and pheasants by the gay house
Under the new made clouds and happy as the heart was long,
        In the sun born over and over,

> I ran my heedless ways,
> My wishes raced through the house high hay
> And nothing I cared, at my sky blue trades, that time allows
> In all his tuneful turning so few and such morning songs
> Before the children green and golden
> Follow him out of grace.
>
> Nothing I cared, in the lamb white days, that time would take me
> Up to the swallow thronged loft by the shadow of my hand,
> In the moon that is always rising,
> Nor that riding to sleep
> I should hear him fly with the high fields
> And wake to the farm forever fled from the childless land.
> Oh as I was young and easy in the mercy of his means,
> Time held me green and dying
> Though I sang in my chains like the sea.

"Fern Hill" has always been a favorite poem of mine, and I have always puzzled over how it made me feel both joyous and deeply melancholy at the same time. For me the poem invokes all the best aspects of innocence, play, childhood, freedom, and pure happiness, while also preserving the constancy of the 'dark passenger' of mortality. How does Thomas communicate such breadth of emotion in a single lyric and what are? The complexity of feeling that the reader experiences relies on the many aspects of poetic complexity. The multiplicity of emotions is an emergent property of the poem. The poem is in itself quite self-referential, as well as being an 'open system' that alludes to many other texts, particularly biblical passages. Additionally, this poem relies a great deal on the lived experience and performance of the poem: the auditory effects contribute to and provide additional insight into the meaning of "Fern Hill."

Louise Murdy's superb analysis of 28 of Thomas' poems focuses on both sound and sense (the title of her book) as crucial aspects of meaning. She focuses on prosodic structure (syllabic patterns, speech-stress patterns, paragraph or stanza formation, line-end word patterns, and distribution of pauses) as well as auditory repetition and links (in vowel and consonantal sounds, using the international phonetic alphabet). I will draw on her comments, but strangely enough, Murdy herself notes the presence of emergent properties in Thomas' work, and recognizes that not every aspect of the meaning of the poem can be explained through a full technological analysis. She writes, "a complete

study would probably be so complex as to break down under its own machinery."[86] Her comment reminds one of the paradox in complex behavioral modeling that necessitates a modeling system as equally as complex as the data itself to be effective.

Thomas himself knew intimately, and described—though he is much more poetic in his explanation—the emergent properties that his poetry produced:

> You can tear a poem apart to see what makes it technically tick, and say to yourself when the works are laid out before you, the vowels, the consonants, the rhymes and rhythms, Yes, this is it, this is why the poem moves me so. It is because of the craftsmanship. But you're back again where you began. The best craftsmanship always leaves holes and gaps in the works of the poem so that something that is not in the poem can creep, crawl, flash, or thunder in.[87]

So, beginning with knowledge that this poem exhibits emergence, there are plenty of aspects of complex craftsmanship to examine to understand how the poem may produce emergent properties. Let us first describe some of the 'technical' aspects and then delve into the complexity of meaning.

In its form, "Fern Hill" is a structured poem of six stanzas. A rhyme scheme is present in every stanza but sometimes sounds rather subtle, as almost all the rhymes are 'half-rhymes' and sometimes 'slant-rhymes,' or words which nearly rhyme but don't quite. In most stanzas, with a few irregularities, the approximate rhyme scheme is a,b, c, d, d, a, b, c, d. For example, the last words in the lines of the first stanza are: *boughs, green, starry, climb, eyes, towns, leaves, barley, light*. 'Boughs' pararhymes with 'towns,' 'green' with 'leaves,' 'starry' with 'barley,' and 'climb' with both 'eyes' and 'light.' There is also a vast amount of internal rhyme, alliteration, and assonance to be found within each stanza.

Metrically speaking, "Fern Hill" is a syllabic poem, meaning that each line is governed not by the number of stresses but by the number of syllables. In the first two stanzas, the number of syllables in each of the nine lines goes: 14, 14, 9, 6, 9, 14, 14, 7, 9. In the next three stanzas, the syllable count is the same up until the last two lines in each stanza, which instead contain nine and then six syllables. The last stanza has several more

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[86] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 19.
[87] Murdy 19, quoting "Dylan Thomas on Reading his Poetry: introduction to a poetry reading" pages 37.

irregularities. Because of the syllabic structure, the metrical scansion (i.e. the marks of stressed and unstressed syllables) of Fern Hill is intriguing, but also relatively easy. First of all, there is a strong flow in each line and each stanza, and the stresses syllables tend to be quite obvious in comparison to the unstressed syllables. Secondly, several recordings of Dylan Thomas reading his own poem aloud exist and can be used to guide metrical interpretation. Using the poet's own spoken emphasis as a guide for scansion, the job is easily completed and confirmed. Having a recording also helps to understand the syllable count for some lines, as a strong accent can cause elision and/or change in enunciation.

In terms of a metrical pattern, there is not a consistent one throughout the poem. Thomas does use many small patterns within the poem, usually sticking with a similar number of stressed syllables in each corresponding line (i.e. 5 or 6 stresses in the first line of each stanza, three stressed syllables in each fourth line, etc.). Some lines feel iambic because small words tend to elide together when the poem is read melodically, but in terms of scansion, anapests and dactyl trisyllables (opposites of each other) are more frequently found in every stanza. Thomas is also unafraid of putting three or more unstressed syllables right next to each other, and this technique serves to emphasize the stressed syllables, when they do come, much more intensely. His frequent flip-flopping between iambic feet, trochaic inversions, pyrrhics, and anapests (there are relatively few spondees) encourages a certain free-for-all, galloping feeling as one reads the poem. Thus there is not a consistent pattern of meter one can pick up on while reading "Fern Hill" (whether silently or out loud) but a general melody. The use of enjambment from line to line and the beating out of anapests and iambic feet here and there provides the poem with a certain irregular pulse.

Thomas' syntax is quiet 'poetic,' as sentences and lines blur in to one another and mix themselves up. The lack of discriminating punctuation causes even more enjambment and verbal phrases spill-over from line to line. Thomas frequently jumbles conventional use of various parts of speech, but upon inspection his sentences are generally grammatically correct. What this causes in the poem is a feeling of carelessness and joyfulness, as the words are tossed gleefully and heedlessly around. This diction in "Fern Hill" is relatively simple (most of the words do not send the average reader reeling

for a dictionary) but there is some exciting and unusual verb use. Thomas frequently mentions colors (the word 'green' is used seven times, and 'golden,' four), animals (calves, foxes, owls, nightjars, horses, pheasants, swallows, and more), and plants (apple boughs, grass, trees, leaves, daisies, barley, hay, and fields). Thomas's unconventional use of adjectives, and of participles as adjectives, is frequent; he uses "lilting house", "it was air and playing," "spinning place," "spellbound horses," "whinnying green stables," and "tuneful turning" to great effect.

And what is the effect? Overall, Thomas's poem contains a semi-traditional theme of paradise lost, a movement to experienced adulthood and a recognition of one's eternal progression away from the ideal freedom of childhood. Giving stanzas very similar, but altered, rhyme and syllabic schemes creates the feeling of an adult attempting to remember childhood, filling in the forgotten details, and trying desperately to reclaim childhood joy and innocence. Thomas captures that Time is a friend in childhood; we exist in an untouchable realm where the days seem endless and the joy eternal. This is the 'golden'-ness of time—which disappears by the last stanza, after which point time has become an inevitable enemy to us in adulthood. The overall auditory experience of the poem is a melodic one due to Thomas's use of cheerful cadences; the song-like quality of the poem reminds the reader/listener of nursery rhymes and sing-a-long tunes.

When the poem is first heard aloud, it sounds pleasant, sing-songy, and cheerful—even carefree, or heedless, as Thomas says—when in the 'technical reality' it is carefully organized into syllabic patterns. But "Fern Hill" is a particularly successful poem because the complexity of both form and content harmonize so intricately. Murdy writes, "The lyric "Fern Hill" laments the loss of childhood joy and innocence by recreating childhood spontaneity and implying both its transience and its contrast with the poet's adult existence. (77)" Thomas 'recreates' childhood spontaneity through the musicality of the poem.

In the first stanza, there are many parallel and repeated vowel sounds. The similar sounds link together without being overt (they are usually within the lines) and create an underlying buoyancy to the poem. For example: 'young,' 'under,' and 'boughs' are all sonically related; 'night,' 'dingle,' 'time,' and 'climb' all ring at similar frequencies.

When reading silently to oneself it is difficult to pick out the exact sonic parallels, but it's practically impossible not to hear the melody in the verses. It seems similar to playing a piece of music where the same root notes are repeated again and again. As Murdy writes, "throughout the stanza[s] the alliteration, assonance, and internal rhyme or near-rhyme create a euphony which aptly reinforces the emotional meaning of the harmony between the child and nature."[88] There is a pattern in some of the alliteration, too. Harvey Gross notes:

> Although Thomas truculently denied any knowledge of Welsh and its highly formal metrical systems, his lines chime with internal consonantal correspondence, or *cynghanedd*, a prescribed feature of Welsh versification… The correspondence in [the lines below] form *cynghanedd croes*: a pattern of alliterated syllables in symmetrical arrangement:[89]
>
> > About the lilting **h**ouse and **h**appy as the **g**rass was **g**reen…
> > …And once below a **t**ime I **l**ordly had the **t**rees and **l**eaves…

And Gross goes on to point out, too, that there is plenty of internal rhyme in the first stanza, even from the middle of one line to the middle of the next, or from the middle to the end:

> Now as I was young and *easy* under the apple boughs
> About the lilting house and *happy* as the grass was green,
> The night above the dingle *starry*…

These poetic techniques sew the harmony into the lyric, infusing it with subtle pattern that the reader can hear but not immediately identify. Thus the melody of the poem emerges from the it rather unexpectedly and sounds like a child's song. In the first stanza, the child's sovereignty (he is 'prince of the apple towns' who 'lordly had the trees,') is charged with irony, but only as the reader moves through the poem. Time is in fact the ominous ruler of a child's—and an adult's—life, but early in the poem, the reader only feels like confidence and immortality that children feel they have.[90]

The first and second stanzas are almost entirely parallel. They have the same syllabic structure and almost identical metrical patters (more so than in comparison to

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[88] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 78.
[89] Gaston, *Critical Essays on Dylan Thomas*, 67.
[90] Ibid.

any other stanza). Many of the lines in stanza two echo the sentiment in the corresponding line of stanza one ("Time let me hail and climb/ Golden in the heydays of his eyes"… "Time let me play and be/ Golden in the mercy of his means"). The feelings of happiness, youth, freedom, and eternal childhood are doubled to emphasize the blissfully ignorant idea children/the narrator has of time. The use of repetition helps provide the poem with a sense of structure, even though Thomas does not follow a pre-established form.

In the third stanza Thomas begins to break away from the glory of childhood found in the first two stanzas: there are nine and then six syllables in the last two lines of the third stanza instead of seven and nine as in the first two. In terms of content the shift, from day-time happiness to sleep, is a gentle step down in mood and meaning, particularly here because the narrator's brief experiences sleeping are not passive. Instead they involve animals, birds, and motion: the farm is an integral part of the narrators existence. The slow, gentle motion of the last few lines of the third stanza serve to create tension, though; a small dip before the second leap into the endless childish joy that appears again stanza four. The lines about sleeping seem to be merely an inhale before the next exhalation of joy. But, they also serve to tint the poem a slightly different color: not everything is awake, golden, and shining all the time. This is achieved only because the preceding two stanzas set up such an ideal standard of childhood beauty.

The next stanza seems to be a merging of the description of the landscape in with the narrator's feelings about the farm. Instead of using biblical imagery and allusions, here the tone switches to a direct identification of Fern Hill as Eden/a paradise garden. The mentions of Adam and Maiden (Eve) are unmistakable and unavoidable, even if the rest of the poem could be explained in other ways; here the labels are too clear. Biblical imagery is present in many of Thomas's other works, as we will see, but as in "Fern Hill" Thomas tends to conflate the biblical Eden with a very natural and pastoral image of paradise. Nature and God play a similar role for Thomas throughout his works.

What is key about the religious imagery in "Fern Hill" is the poem, as a whole, is actually not very biblical poem. The pronouns 'him' and 'he' that are mentioned in a slightly ambiguous fashion (in stanzas one, two, and six) can be identified, grammatically

and intuitively, as personified Time, not as God. For Thomas, the power in the universe, no matter what one believes religiously, is the ever-moving force of Time; this makes the poem immediately universal, as it transcends boundaries of religion. The pastoral scenes and rural imagery Thomas has used throughout the poem are also disparate from any precise biblical imagery.

The cadences in the beginning of stanza five are happy, racing along, and as quick as the other very joyous stanzas in the poem. But the last lines seem to wind down, slowing in pace as the themes of regret and age enter. The difficult mix of close consonants forcefully slows the reader (time/tuneful/turning/so/few/such/songs) with a mix of assonances (a mix of t, f, and s). The innocent, vowel-heavy beauty that's been established in the previous five stanzas has suddenly and sorrowfully disappeared. The poems cheerful tone has turned to one of regret and wistful, wasted youth. The knowledge that the glory of blissful childhood ignorance is forever fled seems to haunt the narrator as he begins to conclude.

In the last stanza, Thomas changes his diction from peppy to mellow, employing words like 'nothing,' 'shadow,' 'forever fled,' and 'childless.' But the movement of the poem is not so linear; Thomas constantly branches back to his purity and joy he captures most obviously in the first two stanzas, calling the days 'lamb white' and repeating the phrase "young and easy," and seems to bring the poem full circle. Some of the images shift, though: most of the poem has glossed trees, grass, apples, and other land-bound and earthly items, the last two lines catch us unawares, partially because Thomas introduces the sea for the first time, and partially because the word 'green,' used to mean 'fresh' and 'young' in all previous stanzas, is now paired with 'dying,' implying that even when young out lives are ending:

> Time held me green and dying
> Though I sang in my chains like the sea.

These lines—some of the most powerful and confusing in the English language—are engraved onto Dylan Thomas's commemoration stone in the Poet's Corner in Westminster Abbey. To me they are exceedingly complex and prompt many 'technical' questions: how can Thomas be at once green and dying, and does this imply that he only

now is aware of how blissfully ignorant his early life was? By linking the clauses together with 'though' Thomas seems to imply that 'singing in ones chains' would prevent, or perhaps halt, the hold of Time; this doesn't make immediate sense, and makes one question whether or not this is one place that Thomas is compromising sense for sound. The last line is a good example of the meeting of sound and sense: with its three anapests in a row and with the repeated vowel sounds of 'I' and 'a' and 'e,' ("though I *sang* in my *chains* like the *sea"*) it captures both a song-like pulse and the feeling of an ocean's pound. But it begs questions aplenty, too: what chains does the sea sing in? Or is Thomas saying that he, regardless of being chained, sang like the sea? And what does singing like the sea sound like?

The vowel sounds—even those in the last lines—form assonance with many other patterns of vowel throughout the poem, and harken back to the cadences in the first and second stanzas (both replete with vowel sounds). By weaving assonance into the poem Thomas forces the individual components of the poem to interact—line to line and stanza to stanza—and creates euphony throughout "Fern Hill."

Dylan Thomas was, from early on, dedicated to the lyrical potential of his work, and was committed to the poetic task from an early age.[91] He committed himself to learning from those before him—in "Fern Hill" Thomas pulls on Blake's favorite theme (the movement from Innocence to Experience), on Keats' tendency to play with dreams and reality and time, and on Hopkins' use of rhythm—as well as to locating and defining his own poetic voice. Thomas's work was well received during his own life, both in Wales and in American (where him emigrated for his last years), and many biographies have been written identifying Thomas's place as a man and as a poet within the Western Canon.

"Fern Hill" is a poem that gains something from learning a bit about Thomas's personal biography. It was written in 1945, eight years before Thomas's death, and in the throws of his alcoholism. The poem went through many drafts, and contains a real nostalgia for his childhood days: he spent many happy holidays on Fernhill Farm in

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[91] Gaston, Georg. *Critical Essays on Dylan Thomas.* Introduction.

Llangain, Wales, with his Uncle Jack and Aunt Annie, which he immortalized in this eponymous poem.[92]

These are all details that allow us to understand how "Fern Hill" is a complex system. In terms of fulfilling all the 'requisite characteristics' I think "Fern Hill" does satisfy them: the poem is comprised of a "large amount of elements" (i.e. stanzas, lines, words, characters); these elements interact, and out of the interaction emergent properties appear (rhyme, emphasis, meter, assonance); the relationships between elements may change continually as the reader progresses through the poem and puts syntax together that is spread over the course of many lines or as she hears the assonance in different stanzas; each element interacts with a large number of other elements (the sound 'ing' at the end of the line may be rhymed with or para-rhymed with in a different line quite far away); some elements are more active than others (some sounds are more frequently used than others); the interaction between elements is 'non-linear' (in that one cannot predict what the emotional value of a poem might be without reading it); the activity of an element may reflect back on itself (by referring to images presented earlier in the lyric); the system is open (Thomas draws on poets before him, and the intertextual relationships are always present; additionally, the lyric must be read to be 'activated'); the system can never be in a state of equilibrium (because words change their meaning and connotation); and lastly, the system is greatly influenced by its history (Thomas named this poem based on his childhood experiences at a specific farm called Fernhill).

So—we have, theoretically, a complex system: but what does this analysis afford us? We know, by reading the poem, that Thomas creates the feeling of lost youth and a nearness to mortality; he wraps his own experience of a beautiful childhood into a half playful and half mournful poem. Has identifying the lyric as a complex system told us anything new? Louise Murdy, were she to read the above categories of technical interplay, would say no; she writes, "the undeniable magic in "Fern Hill" can never be even partially analyzed. Only Thomas's intricate craft can be. For poetic magic is elusive..."

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[92] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, "Fern Hill."

Surely, though, we can do better than call the quality of Thomas's work 'magic.' His craftsmanship as a poet is not a supernatural illusion: it is talent and command of language. Thomas's poetry is extremely difficult to summarize and even more difficult to describe, because it contains so much within itself. "Fern Hill," then, is a challenging poem to *read*, but all the technical patterns in the poetry itself, and knowledge of Thomas's own complete dedicated to drafting and re-drafting his work, also lead me to think that it was probably an even more difficult poem to *write.* We have many copies of "Fern Hill" in different stages that show progression in patterns and a meticulous building of detail and image in the poem over several years.

There are many more things to say about "Fern Hill" but for now let us 'zoom' one step out, and examine "Fern Hill" as a single element in the Thomas's corpus, and see how it interacts with other lyrics, in order to discuss Thomas's intricate craft.

And Death Shall Have No Dominion

And death shall have no dominion.
Dead man naked they shall be one
With the man in the wind and the west moon;
When their bones are picked clean and the clean bones gone,
They shall have stars at elbow and foot;
Though they go mad they shall be sane,
Though they sink through the sea they shall rise again;
Though lovers be lost love shall not;
And death shall have no dominion.

And death shall have no dominion.
Under the windings of the sea
They lying long shall not die windily;
Twisting on racks when sinews give way,
Strapped to a wheel, yet they shall not break;
Faith in their hands shall snap in two,
And the unicorn evils run them through;
Split all ends up they shan't crack;
And death shall have no dominion.

And death shall have no dominion.
No more may gulls cry at their ears
Or waves break loud on the seashores;
Where blew a flower may a flower no more
Lift its head to the blows of the rain;
Though they be mad and dead as nails,
Heads of the characters hammer through daisies;
Break in the sun till the sun breaks down,
And death shall have no dominion.

"And Death Shall Have No Dominion" is a poem in three nine-line stanzas. The main issue with analysis is that there is so much to say; it is an excellent example of a complex system primarily because *the meaning seems obvious when the poem is first read*, but the way in which the meaning is constructed is *extraordinarily intricate*. When the lyric is analyzed image by image it contains many paradoxical aspects and many points of suspense; additionally, when the metrical and lyrical characteristics are identified, one finds that the poem has little *exact* rhyme or metrical structure, but massive amounts of pararhyme, assonance, and consonance, rendering it spell- and incantation-like.

Each of the stanzas begins and ends with the title line, which is a reference to *Romans* 6:9 from the King James translation of the New Testament: "Knowing that

Christ being raised from the dead dieth no more; death hath no more dominion over him."
Thomas shifts the quote a little, inserting the word 'shall' and removing the word 'more.'
He repeats the line a total of seven times, including the title. The line provides the theme
of the poem (resurrection, indomitability) and also introduces its irregular rhythm and
solemn tone. But Thomas's line—easily mistaken for a mere quotation—is pointed in its
alterations. For Thomas, it is not a matter of death ceasing to have power because of the
salvation of Christ; if this were true for Thomas, he would not have introduced the future
tense by using the word "shall." "Shall" shifts the poem into the future and confuses the
biblical interpretation of the poem, as it implies that death still, currently, has dominion,
but it *will* not. "And death shall have no dominion" is also a coordinate clause, implying
perhaps that something had happened before and *therefore* death will have no dominion
in the future. Presumably the biblical antecedent is the resurrection of Christ, but
Thomas's is the integration of the body into the forces of nature; he is convinced of this.
The word "shall" is used a total of fifteen times (seven times in the first stanza, six in the
second, and two in the last) and, besides establishing the future tense, asserts a strength of
intention; Thomas is *sure* that death won't have dominion. The repetition of the title line
drives the feeling of defiance of death, while also sounding like a part of a prayer or
litany.

The rest of "And Death Shall Have No Dominion" is built on repetition as well.
Many consecutive lines in the first stanza of the poem begin with "they," and "though
they," forming syntactical repetition. There are also many lines with both anapests and
iambs, sometimes in very similar patterns. Thomas's characteristic lyricism also
manifests itself in his use of assonance and consonance and augments the meaning of the
poem. Take Louise Murdy's example:

> Occasional consecutive stressed syllables stand out clearly and underscore
> heavily the meaning of the word, as in the staccato phrases 'Dead men
> naked,' 'clean bones gone,' and 'split all ends up.' …Yet not only do most
> of the line-end words end in a punctuated pause, but they also end in an *n*
> sound. Thereby the thematically important word 'dominion' is
> emphasized.[93]

Murdy's observation here is an example of one of the properties of a complex system that
Paul Cilliers outlines. Cilliers writes that in a complex system, "elements primarily

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[93] Ibid., 36.

interact with other elements that are in their near vicinity (not necessarily in a spatial sense); however, they can act with other elements that are further away as well." In terms of poetry, as we have seen in many examples, patterns in one respect of the poem can affect other rather separate parts. Here, in her identification of how the 'n' sound in several lines of this lyric emphasizes a thematically important word elsewhere, Murdy is in fact identifying one of the main sources of complexity within the poem. The poem is successful because it is incantation-esque, and it is incantation-like because of the elaborate—but subtle—interplay between elements.

Murdy also notes even more intricate auditory patterns that pull from phrases outside the poem. She notes that the well-known phrases "the man in the moon" and "the west wind" are transposed into Thomas's line, "With the man in the wind and the west moon" to create new, melodious patterns. She writes:

> "Wind" and "west" are linked by alliteration, and "wind" is further related to three unstressed words, to "with" by alliteration and assonance, to "in" by assonance, and to "and" by final consonance. "Man and "moon" are linked by both initial and final consonance. [94]

Murdy also comments on the 'vowel tone' and asserts that such patterns make the lines "ring with conviction." Even as Thomas brings us face to face with the physical reality of death, he repeatedly disarms it with assured faith.

In the first stanza of the poem, Thomas shows that, in death, all are one. He uses "they" ambiguously, never identifying quite who "they" are; this serves to unify the group he refers to instead of isolating one group: "they" includes the reader. After death, few things differentiate "them:" the body is united with nature; in fact, it is *only* after death that "they" can become the stuff of myth or be immortalized as constellations, "with stars at elbow and foot." The 'clean bones' in line four refer to the biblical passage of Ezekiel 37 where the prophet is sent to prophesy to the dry bones of the valley and to make them live again. But though Thomas references a biblical passage, it does not seem like he is talking about the Christian concept of resurrection. He is using the image of clean bones to suggest that the individual survives through nature, in nature; the ambiguous 'they' will be remembered in the stars, not in heaven or hell. However, the image of the sea returning its dead also has a biblical origin: the prophecy of Revelation

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[94] Ibid., 36.

20:13—" And the sea gave up the dead which were in it; and death and hell delivered up the dead which were in them: and they were judged every man according to their works."[95] Instead of going on to imply that man will be *judged*, however, Thomas continues the image of the sea from this point onwards. The sea (as in the last line of "Fern Hill") is imbued with a mysterious and deep power for Thomas, but it is vague as to what the reference actually means from the first stanza. The concept of resurrection is certainly present; the first stanza also presents the idea that the essence of 'love' shall not disappear, even if "lovers be lost," and each stanza starts and finishes with the same refusal of death's sovereignty.

In the second stanza, Thomas shifts the reader to a tortuous scene on the sea floor, and the reader hears internal rhyme of several stressed syllables that highlight the pain and tension of the scene itself:

> Twisting on *racks* when sinews give way,
> *Strapped* to a wheel, yet they shall not break;
> Faith in their hands shall *snap* in two, (…)
> Split all ends up they shan't *crack*…

The rhymed short 'a' vowel sound is paired repeatedly with a hard consonantal sound so the words sound like cries of pain. When this stanza is heard, it is difficult to identify the italicized words above as rhymes, because they are not all put at the end of lines; for this reason, "And Death Shall Have No Dominion" is sometimes categorized as free verse by readers who cannot identify enough pattern to call the poem 'structured' in any way. But there are many bridges between what Thomas is saying and how he says it. Murdy points out that in the line "twisting on rack when sinews give way:"

> all the stressed vowels are short and high (reflecting the fitfulness and intensity of the pain of the damned) till the swift tempo and increasing pressure are relieved by the long *e* sound (reflecting the contrast in meaning here, the physical giving way of the tortured sinews).[96]

This is an obvious example of the harmony (though a rather dark harmony) between sound and sense. The rest of the lines illustrate similar power. The line "split all ends up they shan't crack" contains at least heavily stressed syllables out of the seven in the line; the staunch power of the line seems as if Thomas is digging his heels in and gritting his teeth, saying that despite the torture of death, life will not be dominated. That these

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[95] *Revelation* 20:13. (KJV)
[96] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 37.

affirmations of meter and sense take place in a stanza that seems to depict hell, or something similar, is also emphatic of the surety of life.

The controversial lines 'faith in their hands shall snap in two/ and the unicorn evils run them through' of the second stanza have been interpreted as "a hint on the poet's refusal to any consolation from faith, as an affirmation of the destruction of faith by this death in torture, and the negation of any deliverance from death through religious faith."[97] The unicorn is a very old and symbolic motif sometimes used to symbolize Christ or God; why would this figure 'run them through?' Has God or religion let these souls down? Or do the two confusing lines rely on the one following, as if Thomas means to say, "faith will snap/ unicorn will run them through/ *but* split all ends up, they *still* won't crack?" This sense would align more closely with the refrain, but clearly beg more questions than a reader might originally see from reading the poem through once. There are obviously other layers at work. The poem cannot be understood from title alone, despite the fact that it repeats so frequently and guides the theme so obviously.

In the third and final stanza, the poem wraps up on land, by the seashore. Thomas draws out the fact that the dead are no longer aware of the physical elements that once made up their home with the words: "no more may gulls cry at their ears/ or waves break loud on the seashores." There are many instances of paralleled sound and sense. "Waves break loud" is a phrase of three stressed syllables, and seems to pound with the force of the ocean; 'lift its head to the blows of the rain' scans as three anapests and captures the lifting and re-lifting of a flower tossed in the wind. There is internal rhyme in many of the lines (e.g. 'head' and 'dead') as well as several pararhymes at the end of lines (e.g. 'rain,' 'nails,' 'daisies').

However 'dead' and 'mad' the ambiguous 'they' of the poem are, however, in this stanza Thomas makes it explicit that their innocence shall burst through like daisies. This innocence ultimately wins over *even the sun*, breaking it down. The line 'heads of the characters hammer through daisies" is grammatically off-putting, but seems to imply that the characters of those dead will, no matter what, hammer through the pain of death to either become daisies or have their life recollected in the beauty of the natural world. However, the line, in partnership with the phrase 'dead as nails' right before it, also

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[97] Cabral, "Poema 'and Death Shall Have No Dominion' De Dylan Thomas," 4.

reminds one of the actions involved with sealing a coffin. The line itself is quite rapid, because no heavy syllables slow down the rhythm.[98] The strong, pulsating dactylic meter suggests the motion of flowers renewing themselves and popping up, which in turn reflects the meaning of the entire poem—the corollary of 'death shall have no dominion'—life is triumphant.[99]

The connection between sense and sound in many lines of Thomas's poem is obvious, but our ability to explain it is flawed. The term emergent property elucidates, if nothing else, the fact that there is a jump in scale and a jump in meaning. Though we understand the parts of the system (vowel sounds, pararhymes, meter), and even how they interact (emphasizing the literal meaning of a certain line), we cannot explain the meaning of the poem *solely* based on the minutia. The poem stands for itself, with all its paradoxes and provocative, half-biblical images, as a rebuttal against death, suspended within images of bones, madness and torture. Yet one walks away with a firm belief that, indeed, death shall have no dominion over any life.

Thematically, "And Death Shall Have No Dominion" is both similar to and opposite to "Fern Hill." Both poems communicate the painful proximity and inescapability of death while also asserting—through the beauty of the lyric and explicitly in the content—the eternal life of the human spirit. This thematic paradox carries over into the next poem I will analyze of Thomas's, "Do Not Go Gentle Into That Good Night."

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[98] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 38.
[99] Ibid., 38.

Do Not Go Gentle Into That Good Night

Do not go gentle into that good night,
Old age should burn and rave at close of day;
Rage, rage against the dying of the light.

Though wise men at their end know dark is right,
Because their words had forked no lightning they
Do not go gentle into that good night.

Good men, the last wave by, crying how bright
Their frail deeds might have danced in a green bay,
Rage, rage against the dying of the light.

Wild men who caught and sang the sun in flight,
And learn, too late, they grieved it on its way,
Do not go gentle into that good night.

Grave men, near death, who see with blinding sight
Blind eyes could blaze like meteors and be gay,
Rage, rage against the dying of the light.

And you, my father, there on that sad height,
Curse, bless, me now with your fierce tears, I pray.
Do not go gentle into that good night.
Rage, rage against the dying of the light.

"Do Not Go Gentle Into That Good Night" is a traditional 19 line villanelle, with five three-line stanzas followed by one four line stanza. Only two rhyme sounds end all the lines (in this case, '—ight' and '—ay'). In addition, the first line and third line, the refrains ("Rage, rage against the dying of the light," and "Do not go gentle into that good night"), are repeated four times each. The first refrain appears at the end of stanzas two and four and as the second-to-last line in stanza six. The poem's second refrain appears again at the end of stanzas three, five, and six. Simplifying this by calling the first refrain A and the second refrain A', and any line that rhymes with them a, then the rhyme scheme is: AbA' abA abA' abA abA' abAA'.

The structure often seems extremely rigid for English—which makes sense, because the villanelle form wasn't designed for the English language; villanelles originated in France and only became popular in English as a late 19th and early 20th century import. Thomas's successful following of this strict and complicated form, which

tends to work *against* the language he's using by forcing rhymes and limiting diction, makes his villanelle the most definitive successful attempt in English poetry. The opening stanza introduces the two refrains, which are imperatives directed at an unidentified person. In the next four stanzas one or the other of these repeated phrases forms the predicate to statements about, respectively, wise men, good men, wild men, and grave men. In the concluding stanza, the speaker directly addresses his father, and the repeated lines thus become significant imperatives—first the negative command to his father, "Do not go gentle into that good night;" then the positive command to him to assert his individuality, "rage, rage against the dying of the light."[100] What is so effective about Thomas's command of the refrain lines is different from their use in most English villanelles; the refrain lines of unsuccessful villanelles bear scant relationship to the poetic argument and their function is usually decorative or forced. But Thomas molds his syntax to be applicable in many situations and "the repetition of the refrains couples with the grammatical sense of each tercet."[101]

Numerous other poetic devices contribute to the subtle variations within the pattern of the villanelle. The meter is steadily iambic pentameter (each line rigidly contains ten syllables), with some variations, and "the vocabulary contains seven times as many monosyllables as polysyllables" which normally would lead such a formally structured poem to sound extremely forced. But, as Louise Murdy notes, "the speech stresses in a line vary from five to eight and help save the poem from a monotonous 'sing-song' rhythm."[102] Murdy goes on to observe that the 'full, resonant effect' of the poem is intensified by the fact that the two rhyme-bases involve long vowels (*e* and *ai*). Especially in stanzas three and five, the rhymes are emphasized by a concentration of internal assonance of *e* and *ai*:

> Good men, the last w**a**ve by, cr**y**ing how br**i**ght
> Their fr**ai**l deeds m**i**ght have danced in a green b**ay**,
> R**a**ge, r**a**ge ag**ai**nst the d**y**ing of the l**i**ght. (…)
>
> Gr**a**ve men, near death, who see with bl**i**nding s**i**ght
> Blind **ey**es could bl**a**ze l**i**ke meteors and be g**ay**,
> R**a**ge, r**a**ge ag**ai**nst the d**y**ing of the l**i**ght.

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[100] Ibid., 96.
[101] Gaston, *Critical Essays on Dylan Thomas*, 68
[102] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 96.

Both stanzas have at least four uses of each of the rhyme vowels (*e* and *ai*), excluding the rhyme words themselves. The repetition of vowel sounds focuses attention upon the meaningful words of these stanzas; Murdy writes, "it helps to indicate an important theme underlying the poem—the discrepancy between what the good and grave men have done in life (frail deeds) and what they *might* have done in (blazing, meteoric deeds)."[103]

Thomas creates four different perspectives in his poem to show the universal relevance of his theme, and then moves to the intimate and personal by addressing his own father in the final stanza. The speaker in the poem, presumably Thomas himself, seems to think it is not honorable or befitting for man to die quietly in old age; these men were, and are, wise, good, and wild! Thomas seems to encourage the men he addresses, and the reader, to fight against death rather than mutely accept it. The realizations that come with old age should not destroy a man, but invigorate him to strive all the more.

"Do Not Go Gentle Into That Good Night" can be divided into three parts. The first stanza functions as an introduction to the speaker's message. The middle four stanzas are essentially examples of men who either do or should do one of the refrains. The last stanza functions, on its own, as the third part, for in it the tone of the whole poem immediately shifts, to a very unexpected and personal tone, as the speaker addresses his father. It as if Thomas suddenly is at his father's hospital bedside, speaking to him as he dies. He addresses his father: "And you, my father, there on that sad height,/ Curse, bless me now with your fierce tears, I pray." Thomas seems to beg his to burn with feeling and emotion while he still can, even if he curses his son—so long as he does not die without putting up a fight.

While the poem addresses many types of men, the fact that it ends with his father shows that the speaker thinks of his father not as the grave, wild, or good men discussed previously, but that he is a category by himself. The fact that the speaker is not concerned with whether or not his father curses or blesses him shows that he is not necessarily concerned with what his father had to say, but only that he did not fade quietly into death. Why would Thomas extend such a passionate sentiment? Why is it important that his father, or anyone else not 'go gentle' into death?

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[103] Ibid., 96-97.

The poem prompts these questions, particularly for the case of Thomas's father, but also answers them; to 'go gentle' is submission, it is admittance of death. Thomas's rock-solid faith permeates this lyric as it does "Fern Hill" and "And Death Shall Have No Dominion." The conviction is present within the very sound of the poem. "Do Not Go Gentle Into That Good Night" is harsh but lyrical, jarring but hypnotic. As contrast to the frequently repeated lines and the assonance, Thomas also uses harsh consonant sounds, often alliterated, to infuse the lyric with a determined feeling. He omits unstressed endings on words wherever he can – notice that his choice of "gentle" instead of the more grammatically correct "gently." The poem also has as few linking words and conjunctions as possible; connections happen through commas instead, as in "Rage, rage" and "Curse, bless." This causes there to be more stressed words in the poem, which creates a strong, pulsing rhythm.

As in several other of Thomas's poems we have examined, the last lines are of critical importance and can shift the meaning of the poem as they are read. The last stanza of "Do Not Go Gentle Into That Good Night" is no exception. Through the poem, the metrical expectation has been built that most lines will be regularly iambic. But in the last two non-refrain lines, Thomas varies the rhythm with contiguous heavy stressing. The meter in this case forces a crucial semantic choice for the reader. Consider the scansion of the line:

"Curse, bléss | me nów | with yóur | fierce téars, | I práy…"

If the reader "resists the temptation to read the first and fourth feet as emphatic accentual spondees, we understand that blessing outweighs the cursing and the ferocity."[104] This is the crux of the poem; the meaning of the entire lyric seems to rely on the last stanza and whether or not Thomas's philosophical and emotional comments on continuing to struggle against death will have an effect. The three most important words in the last stanza end in the sound 's'—'curse,' 'bless,' and 'fierce'—and 'tears' end in the closely related 'z' sound. Murdy notes that "indeed the oxymoronic effect of 'curse, bless' reflects the dichotomy and poignancy of Thomas's plea to his father. The poet prays his

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[104] Gaston, *Critical Essays on Dylan Thomas*, 69.

father will, with fierce tears, curse and bless him—as his final and ultimate protest against death."[105]

       Like the other two poems of Thomas's I have examined, this lyric offers a duality of themes. It shows an acute awareness of mortality and seems to grieve deeply at the inevitability of death, while simultaneously maintaining a confidence and a faith in nature and God; the reader walks away from the poem having brushed with existential awareness but also with the encouragement that death—somehow—is not eternal.

       I think it says something that I've spent many pages discussing, and trying to elucidate, techniques and patterns and meaning from only three of Dylan Thomas's poems. The poems themselves are much, much shorter than my analysis; they are condensed versions of all the layers of meaning I have tried to re-expand from the lyrics. That said, there are so many ideas which I have not had time or space to develop, which would further reveal aspects of complexity in all the poems. Thomas's work offered me a particular challenge because of the lack of understanding I have about the power of sound and emotional reactions to auditory patterns. I am, however, able to reflect on all three poems, and note the parallels between youth and death, sound and sense, and assonance and consonance through between the lyrics. Above all, to me, Thomas's poems are complex because, despite the grammatical sacrifices that he makes, there is insight and knowledge communicated through the lyrical nature of his work. When all the interacting parts of Thomas's work (rhyme, meter, assonance, internal patterns, and all the rest) harmonize, they produce unexpected and novel meaning in the poem, so that even a poem that seems 'obvious' (like "And Death Shall Have No Dominion" with its many repetitions of the theme) is enriched with multiple layers of meaning and cannot be reduced to a single phrase or pattern.

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[105] Murdy, *Sound and Sense in Dylan Thomas's Poetry*, 97.

Conclusions

I love poetry. I love reading it, writing it, talking about it, scanning it, memorizing it, puzzling over it, and doing my level best to understand everything I can about a specific poem. Being able to identify technical tricks, allusions, references, hat-tips, and poetic designs in a lyric thrills me and lets me enter the realms of Keats and Yeats and Dylan Thomas and Edna Saint Vincent Millay in profound and intimate ways. I love poems that have layers of metaphor, poems with mixed images, poems with lyricism, poems that have said something ancient in the freshest way; I love sifting through everything that makes a poem complex. I love to highlight and circle and underline patterns in poetry, drawing lines all over the stanzas connecting vowel sounds or rhyme. I love to identify designs that aren't usually noticed by hearing or reading the poem once.

I love the technical aspects of poetry because they are doors that admit me to chambers of meaning within a poem. When I see a pattern, I can understand intention; when I see a motif, I can comprehend the poetic objective. But in order for me to dig into a poem, and tussle with it, and love it as if it was the key to my heart, *it must be complex.* Simple poetry gives me no handles, no challenge, nothing to play with; complex patterns and paradox and puzzles are gateways to meaning in poetry.

In this thesis I have tried to identify where poetic complexity arises. I have identified the complexity of diction, phrasing, meter, form, metaphor, unexpectedness, and intertextuality, but I have given examples of all of these aspects and discussed how they relate to increased complexity of meaning in poetry. I believe I have also 'proved' that lyric poems can function theoretically as complex systems by interacting with themselves and by engaging with a reader. In describing poetic complexity, I have found it quite true that a poem can be metrically, syntactically, thematically, verbally, and psychologically complex, and many combinations of all of these types. The question I have not answered it whether or not concepts and vocabulary from complex systems can benefit poetic analysis.

In brief, I think it can, but I don't think my 'result' is revolutionary. As I stated in the introduction, the Humanities have always been broad and have continually borrowed

paradigms and vocabularies from sociologists, psychologists, political theorists, and scientists. In this way I have not broken through into a new perspective; Humanities scholars, in trying to understand human life, have constantly commented on all aspects of human life, mathematics and science included. Terms like 'chaos,' 'emergence,' and 'tipping point' do not get exclusive use in complex systems science, nor in any other field; in fact, these are often metaphors borrowed *into* the sciences. However, one of the difficulties in the humanities is identifying whether a non-mathematic or non-scientific author has genuine familiarity with the concept they are employing; words are used in different ways in practically every discipline, and there are definite gaps when vocabulary is transferred from one field to another. But this is also the *best* result of interdisciplinary thinking and conversation. No aspect of human knowledge exists in a vacuum, so the ability to describe the complexity of both poetry and traffic patterns with the same vocabulary can be helpful, clear, and allow scholars to continually observe new patterns and phenomena in whatever complex system they wish to study. It's obvious that many phenomena now studied in the natural and social sciences are beyond the scope of any one discipline (for example, "understanding human diseases requires knowledge of the physics of electromagnetism, the chemistry of molecular bonding, the biology of cellular organisms, and the psychology of the human mind").[106] To me, the aspects of poetry that are now referred to as "magical" and "je-ne-sais-quoi" can perhaps, in the future of complex systems research, be understood by combining knowledge from literary analysis, cognitive science, biology, and whatever other disciplines have ideas to provide. The increasing success of complex systems research will come from our ability to foster collaboration between scholars of multiple disciplines.

What I have done in this thesis is written a theoretical base text, showing that fundamental concepts of complex systems can apply to poetic analysis. But in doing so, I found that poetic analysis has already described many of the patterns and tendencies that complex systems paradigms identify. I can recognize my own bias as a lover of poetry and as a student trained mainly in the humanities, not in the STEM fields. I have tried to combine methodologies, though, by facing my data (poetry) with the attitude of a

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[106] Ladyman, "What Is a Complex System?," 35.

scientist and trying to find aspects of poetry that literary analysis wouldn't usually focus on.

I think one of the more obvious, but controversial, hurdles I have stumbled on is the difficulty in treating a poem as a system, and then asking the questions (1) How hard the system to describe? (2) How hard is it to create? And (3) what is its degree of organization? For hundreds of years these questions have not been asked of poetry; lovers of poetry and critics alike have spurned the idea that there might be a use for a paradigm in poetic analysis or standards of aesthetic quality that are quantitative or objective instead of completely opinion based. Though I am in complete sympathy with the point of view that states that poetry is personal, that it is up to interpretation, and that it could never be reduced, I also think there are ways to identify and 'prove' whether one poem is more complex than another, and correlate that information with the poem's aesthetic success (note that I say correlate, not linking in causation). In traditional analysis, this is done much in the way I have analyzed Dylan Thomas: by explaining the techniques, pointing out patterns, and appreciating the link between sound and sense. I do not mean to imply that there is a need for a ranking system that identifies some poets or poems as 'better' than others: on websites like 'poets.org' and 'poemhunter.com' there are already functions where users can rate poems out of ten stars. Instead what I, reflecting on this project, might encourage, is a tentative openness to objective language and new ways in which to quantitatively analyze and describe poetry.

Looking forward, my hope for the direction of this project branches towards digital humanities, because I think computational pattern identification within large amounts of poetry could offer a better set of results than my examinations of individual lyrics. With computers we have the ability to analyze and model large amounts of data, and some software programs have already been created that seek to do text analysis. Some of these programs aim at identifying texts at different reading levels, or identifying "how complex a text is" based on an arbitrary scale, usually reliant on word length and word count. There are many more aspects to poetic complexity than word length, so most of these programs are not yet useful at the level I'm looking for.

But there is plenty of time. Complex Systems, particularly in comparison to literary analysis, is in its infancy. I've shown fundamental concepts of complex systems

can apply to poetic analysis, but poetic analysis has already done many of the things that theoretical aspects of complex systems offers. Perhaps as the discipline of complex systems expands (for I am sure it will) tools for textual analysis and more ideas about literary complexity and how to measure it will become available.

There is safety in knowing that no formula, no summary, no model could substitute for Dylan Thomas's "Fern Hill." Thomas's acumen into life and death speak for themselves in his poetry and will always be powerful and enjoyable. But the more we understand about the world—about composition, about the auditory impact of meter, about complexity theory—the greater our appreciation and understanding of poetry can be.

Appendices

I.

Brief explanations and examples of four types of meter

Below, the four types of meter are briefly discussed (pulling information from texts by Paul Fussel, David Caplan, and John Hollander).

1.   **Syllabic** prosody measures only the number of syllables per line without regard to the stress of the syllables relative to each other. It is one of the least frequent meters to be employed in English; most recently W.H. Auden and Marianne Moore have used it successfully. Often, even when the English poet writes in syllabic forms, the result of the success is the lurking of meter, or a system of stresses, that they poet has not been able to completely ignore in their composition. Syllabic 'meter' is the basic system of modern French and Japanese.

No Swan So Fine

By Marianne Moore

"No water so still as the
dead fountains of Versailles." No swan,
with swart blind look askance
and gondoliering legs, so fine
as the chinz china one with fawn-
brown eyes and toothed gold
collar on to show whose bird it was.

Lodged in the Louis Fifteenth
candelabrum-tree of cockscomb-
tinted buttons, dahlias,
sea-urchins, and everlastings,
it perches on the branching foam
of polished sculptured
flowers--at ease and tall. The king is dead.

2.	**Accentual-Syllabic Meter** is built up of pairs or triads of syllables, alternating or otherwise grouping stressed and unstressed ones. Syllables usually keep their "word accent," or the accent they would have in normal speech. This verse system involves labeled patterns of feet such as 'iambic,' 'dactylic,' and so forth.

"She Walks in Beauty," an 1814 poem by Lord Byron, is written in strict iambic tetrameter:

> She walks in beauty, like the night
> Of cloudless climes and starry skies;
> And all that's best of dark and bright
> Meet in her aspect and her eyes:
> Thus mellow'd to that tender light
> Which heaven to gaudy day denies.
>
> One shade the more, one ray the less,
> Had half impair'd the nameless grace
> Which waves in every raven tress,
> Or softly lightens o'er her face;
> Where thoughts serenely sweet express
> How pure, how dear their dwelling-place.
>
> And on that cheek, and o'er that brow,
> So soft, so calm, yet eloquent,
> The smiles that win, the tints that glow,
> But tell of days in goodness spent,
> A mind at peace with all below,
> A heart whose love is innocent!

3.	**Accentual Meter** also is measured based on the number of stressed syllables in a line, but the measurement system disregards how many syllables are in a line. Accentual meter is the meter of the earliest Germanic poetry; it is preserved in nursery rhymes and in much comedic lyric verse.

> **Baa**, baa, **black** sheep, (4)
> **Have** you any **wool**? (5)
> **Yes** sir, **yes** sir, (4)
> **Three** bags **full**; (3)
> **One** for the **mas**-ter, (5)
> And **one** for the **dame**, (5)

And **one** for the **lit**-tle boy (7)
Who **lives** down the **lane**. (5)

4.   **Quantitative Meter,** save for some grotesque and rather failed examples, cannot occur in English, but is the basis of Greek prosody and, later on, of Latin. It measures durational rather than accentual feet (each foot consists of 'long' and 'short' syllables).

The opening line of the Æneid is a typical line of dactylic hexameter:
Armă vĭ | rumquĕ că | nō, Troi | ae quī | prīmŭs ăb | ōrīs
("I sing of arms and the man, who first from the shores of Troy...")

In this example, the first and second feet are dactyls; their first syllables, "Ar" and "rum" respectively, contain short vowels, but count as long because the vowels are both followed by two consonants. The third and fourth feet are spondees, the first of which is divided by the main caesura of the verse. The fifth foot is a dactyl, as is nearly always the case. The final foot is a spondee.

The dactylic hexameter was imitated in English by Henry Wadsworth Longfellow in his poem "Evangeline." Here is the first stanza:

This is the forest primeval. The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, indistinct in the twilight,
Stand like Druids of old, with voices sad and prophetic,
Stand like harpers hoar, with beards that rest on their bosoms.

II.

A brief answer: by definition, is a poem a complex system?

What do we find when we put ourselves in the mindset of trying to see lyric poetry as an example of a complex system? How can we distribute language, meter, characters, and so forth into different 'elements'? Using Paul Cillier's categories, I have adapted his list to incorporate poetic categories to see if indeed an individual lyric poem "fits" as a complex system.

i. The poem is comprised of a large amount of elements (i.e. stanzas, lines, words, characters; out of the words category many smaller elements appear, like rhyme, emphasis, visual impact, meter, assonance, and so forth).

ii. The elements interact; the lines make up the stanzas and the words make up the lines. Their relationships may change continually as the reader progresses through the poem and puts syntax together that is spread over the course of many lines.

iii. Each element interacts with a large number of other elements: the sound 'ing' at the end of the word may be rhymed with or para-rhymed with; it may impact the meaning implied by the sound of the word; some elements are more active than others because, for example, some vowel sounds are more common or more frequently used.

iv. The interaction between elements is non-linear in that one cannot predict what the emotional value of a poem might be solely by looking at it or examining the technical aspects.

v. Elements (i.e. words, phrases, metaphors, sounds) primarily interact with other elements that are in their near vicinity, however, they can act with other elements that are further away as well

vi. The activity of an element may reflect back on itself (either positive or negative feedback); the subject within a poem might refer to itself or to am image within itself.

vii. The system is open; the borders cannot be drawn; though print poetry is static when on paper, it exists in the poets mind and intention, various readers read and 'activate' it; the poem exists within the corpus all poetry that's been written, and intertextuality is always present.

viii. The system can never be in a state of equilibrium because words change their meaning and connotation. Instead poetry is dynamic and changes over time.

ix. The system is greatly influenced by its history; intertextuality demonstrates this clearly.

x.   Individual elements can only act on the available information; readers cannot be influenced by texts they have not encountered in some form or another.

III.

English Translation of Petrarchan Sonnet 159.

From what part of the heavens, from what idea
came the example, from which Nature took
that beautiful joyful face, in which she chose
to show down here what power she has above?

What nymph of the fountain, what goddess of the wood
loosed hair of such fine gold on the breeze?
How did a heart gather so much virtue to itself,
though the sum of it is guilty of my death?

He looks in vain for divine beauty
who has never yet seen how tenderly
she moves those eyes of hers around:

he does not know how Love heals, and how he kills,
who does not know how sweet her sighs are,
and how sweet her speech, and sweet her smile.

IV.

The idea of identifying fractals in literature is actually quite mature. For example, Lucy Pollard-Gott, of Yale, has even developed a simple method of fractal identification within single poems. Her method consists of a few simple steps:

1. Count the words in the poem:

> Mary had a little lamb,
> Little lamb,
> Little lamb.
> Mary had a little lamb,
> Its fleas were white as snow.

(At least, that's how my sister recited it when she was 5.) This example has 20 words.

2. Draw a line of boxes, one box for each word of the poem.
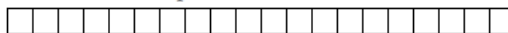
3. Identify an important word in the poem. Pollard-Gott calls this word the root. This choice is the delicate part of the method.

    * The word should represent an idea, action, object, or person central to the poem.

    *The word should occur several times in the poem. A word that occurs only twice will reveal no pattern.

For this example, we select the word **lamb**

4. Shade the boxes corresponding to each occurrence of the selected word.

In choosing a "root" in a certain poem, Pollard-Gott suggests that one could not only look for an obviously important word, but perhaps choose a sound, phrase, or set of letters that might have significance. Pollard-Gott's main advice for future researchers is to: "look for some subset of the poem that bears a structural resemblance to the poem as a whole - *that is self-similarity.*"[107]

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[107] http://classes.yale.edu/fractals/panorama/Literature/PollardGott/PollardGott.html

Works Cited

Bloom, H. (1973). *The Anxiety of Influence; a Theory of Poetry*. New York,: Oxford University Press.

Bloom, H. (2000). *How to Read and Why*. New York: Scribner.

Bloom, H. (2011). *The Anatomy of Influence: Literature as a Way of Life*. New Haven Conn.: Yale University Press.

Bloom, H. (2011). *The Romantic Poets*. New York: Bloom's Literary Criticism.

Brooks, C. (1947). *The Well Wrought Urn; Studies in the Structure of Poetry*. New York,: Reynal & Hitchcock.

Brooks, C., & Warren, R. P. (1949). *Modern Rhetoric*. New York,: Harcourt.

Brown, K. (2001). *The Measured Word: On Poetry and Science*. Athens: University of Georgia Press.

Brown, K., & Schechter, H. (2007). *Conversation Pieces: Poems That Talk to Other Poems*. New York: Alfred A. Knopf.

Burguete, M., & Lam, L. (2008). *Science Matters: Humanities as Complex Systems*. Singapore; Hackensack, NJ: World Scientific Pub. Co.

Cabral, G. d. S. O. (2005). Poema 'and Death Shall Have No Dominion' De Dylan Thomas. *Todas as Letras, 7*(7), 9.

Caplan, D. (2007). *Poetic Form: An Introduction*. New York: Pearson Longman.

Ciardi, J., & Williams, M. (1975). *How Does a Poem Mean?* (2d. ed.). Boston: Houghton, Mifflin.

Cilliers, P. (1998). *Complexity and Postmodernism: Understanding Complex Systems*. London ; New York: Routledge.

Cole, H. (2000). On Complexity. *Crossroads*.

Corning, P. A. (2007). Complexity Is Just a Word! *Technological Forecasting and Social Change, Institute for the Study of Complex Systems, Web.* .

De Toni, A. F., Luca Comello. (2007, 2010). Journey into Complexity. 122.

Dehaene, S. (2009). *Reading in the Brain: The Science and Evolution of a Human Invention*. New York: Viking.

Doty, M. (2007). On "in a Station of the Metro. *Academy of American Poet's Online Poetry Classroom Summer Institute, Poets.org*.

Empson, W. (1989). *The Structure of Complex Words*. Cambridge, Mass.: Harvard University Press.

Ferguson, A. R. (1973). Frost and the Paradox of the Fortunate Fall. *Frost: Centennial Essays, University Press of Mississippi*.

Fussell, P. (1979). *Poetic Meter and Poetic Form* (Rev. ed.). New York: Random House.

Harshav, B. (2007). *Explorations in Poetics*. Stanford, Calif.: Stanford University Press.

Haspel, A. (2006). The Fractal Geometry of a Poem. *God of the Machine Blog*.

Hasselblatt, B., & Katok, A. B. (2003). *A First Course in Dynamics: With a Panorama of Recent Developments*. Cambridge ; New York: Cambridge University Press.

Hayes, B. First Links in the Markov Chain. *American Scientist*.

Hayles, K. (1990). *Chaos Bound: Orderly Disorder in Contemporary Literature and Science*. Ithaca, N.Y.: Cornell University Press.

Hayles, K. (1991). *Chaos and Order: Complex Dynamics in Literature and Science*. Chicago: University of Chicago Press.

Hayles, N. K. (2013). A Complex Conversation: An Interview with N. Katharine Hayles. In B. Hudson (Ed.).

Hayward, M. (1996). Analysis of a Corpus of Poetry by a Connectionist Model of Poetic Meter. *Poetics, 24*, 1-11.

Henle, J. (2011). Is (Some) Mathematics Poetry? *Journal of Humanistic Mathematics, 1*(1).

Hollander, J. (2001). *Rhyme's Reason: A Guide to English Verse* (3rd ed.). New Haven: Yale Nota Bene/Yale University Press.

Hughes-Hallett, P. (2002). *The Immortal Dinner: A Famous Evening of Genius & Laughter in Literary London, 1817*. Chicago: Ivan R. Dee.

Hunter, J. P. (1999). *The Norton Introduction to Poetry* (7th ed.). New York: W.W. Norton.

Gaston, Georg. (1989). *Critical Essays on Dylan Thomas.* G.K. Hall & Co. Boston, Massachusetts.

Kauffman, S. A. (1993). *The Origins of Order: Self-Organization and Selection in Evolution*. New York: Oxford University Press.

Kauffman, S. A. (1995). *At Home in the Universe: The Search for Laws of Self-Organization and*

Complexity. New York: Oxford University Press.

Ladyman, J., Lambert, J. and Wiesner, K. (2012). What Is a Complex System? *University of Pittsburgh*.

Lake, P. (2002). The Shape of Poetry. *Contemporary Poetry Review*.

Livingston, I. (2006). *Between Science and Literature: An Introduction to Autopoetics*. Urbana: University of Illinois Press.

Lloyd, S. (2001). Measures of Complexity: A Nonexhaustive List. . *IEEE Control Systems Magazine., 21*(7-8).

Luhmann, N. (2000). *Art as a Social System*. Stanford, Calif.: Stanford University Press.

Mansilla, R. a. B., E. . (2003). Increase of Complexity from Classical Greek to Latin Poetry. *Complex Systems, 14*, 201-213.

Martinás, K., András Margitay-Becht, Dana R. Herrera. (2008). Wealth, Groups, Ethics. *Interdisciplinary Description of Complex Systems, 6*(1), 1-9.

McLane, M. N. (2008). Twisting and Turning. *Poets.org, The Academy of American Poets*.

Mitchell L., F. M., Harris KD., Dodds P.S., Danforth C.M. (2013). The Geography of Happiness: Connecting Twitter Sentiment and Expression, Demographics, and Objective Characteristics of Place. *PLoS ONE, 8*(5).

Murdy, L. B. (1966). *Sound and Sense in Dylan Thomas's Poetry*. The Hague,: Mouton.

Northrop, R. B. (2011). *Introduction to Complexity and Complex Systems*. Boca Raton: Taylor & Francis.

Paulson, W. R. (1988). *The Noise of Culture: Literary Texts in a World of Information*. Ithaca: Cornell University Press.

Peitgen, H.-O., Jürgens, H., & Saupe, D. (2004). *Chaos and Fractals: New Frontiers of Science* (2nd ed.). New York: Springer.

Pinsky, R. *Singing School: Learning to Write (and Read) Poetry by Studying with the Masters* (First edition. ed.).

Pinsky, R. (1998). *The Sounds of Poetry: A Brief Guide* (1st ed.). New York: Farrar, Straus and Giroux.

Polonsky, M. (1998). *The Poetry Reader's Toolkit: A Guide to Reading and Understanding Poetry*. Lincolnwood, Ill., USA: NTC Pub. Group.

Porter, J. E. (Fall 1986). Intertextuality and the Discourse Community. *Rhetoric Review*.

Richards, I. A. (1926). *Science and Poetry*. London,: K. Paul, Trench, Trubner & Co. Ltd.

Ross, H. Beauty--How Hopkins Pied It. *University of North Texas*.

Schlee, C. S. (2006). Poetry as Compass: Chaos, Complexity, and the Creative Voice. *FORUM: University of Edinburgh Postgraduate Journal of Culture and the Arts*(Special Issue 01).

Sonderegger, M. (2010). Applications of Graph Theory to an English Rhyming Corpus. *Computer Speech and Language, 25*.

Stanley, D. (2009). Complexity and the Phenomenological Structure of 'Surprise'. *Emergence: Complexity and Organization, 11*(2), 46+.

Talk, T. (Writer) & N. Perony (Director). (2013). Puppies! Now That I've Got Your Attention, Complexity Theory, *TEDx Zurich*.

Tianxin, C., Robert Berold, and Gu Ye. Mathematicians and Poets. *Notices of the AMS, 58*(4), 590-592.

UVM. (2009, 2010). Transdisciplinary Research Initiatives. *TRI*.

Vendler, H. (1983). *The Odes of John Keats*. Cambridge, Mass.: Belknap Press of Harvard University Press.

Vendler, H. (1985). *The Harvard Book of Contemporary American Poetry*. Cambridge, Mass.: Belknap Press of Harvard University Press.

Vendler, H. (2002). *Poems, Poets, Poetry: An Introduction and Anthology* (2nd ed.). Boston: Bedford/St. Martin's.

Williamson, G. (2001). *Errors in the Script: Poems* (1st ed.). Woodstock, N.Y.: Overlook Press.

Wordsworth, W., and Coleridge, Samuel Taylor. (1798). *Lyrical Ballads, with a Few Other Poems*. London, UK.: Oxford U.P.