To what extent is the superconcept of ‘complexity’ applicable to Shakespeare?

This essay will explore the extent to which the superconcept of complexity can be conceptually applied to literature, specifically the study of Shakespeare. ‘Superconcept’ describes a concept that is ‘applicable to many systems and in many disciplines’ (Wilson, 2010, p.40), which ‘cross[es] disciplines and… contribute[s] to both our depth of understanding and help[s] us to navigate [different disciplines]’ (Wilson, 2010, p.4). A superconcept originates in one distinct discipline and is then applied to other disciplines. ‘Complexity’ is a superconcept because it originated in physical and mathematical sciences within the study of thermodynamics, the ‘first form of a “science of complexity”’ (Prigogine, 1984, p.99), before being applied to ‘biology…sociology, education, linguistics [and] business management’ among others (Hansen, 2017, p.13). However, complexity is applied more readily in both ‘hard’ and ‘soft’ sciences than in humanities; this may be due to its ambiguous definition as ‘a heterogeneous swarm of interconnecting, interdependent, complex, non-linear relationships’ (Dodd, 2011, p.15). Complexity has no single ‘complexity theory’ that unifies it; it can also be called ‘complexivism,’ ‘complexity science,’ and ‘dynamical systems theory,’ among others. These all refer to a collection of traits which distinguish complex systems from non-complex systems. Complexity theory is related to systems theory, in that it involves the study of many elements interacting with one another, but the two terms are not interchangeable: Hansen states, ‘not all systems are complex; some may be simply complicated’ (2017, p.7). What differentiates complex systems from non-complex systems is how the system is organised. Complexity theory focuses on the unpredictable relationships and interactions between the elements of a system, whereas non-complex systems theory focuses on the elements themselves and how they are arranged according to a formulaic plan.

A conceptual application has been chosen for this essay as it corresponds to the non-literal nature of the subject matter, and this should be considered no less valid than a literal application. As Cameron and Larsen-Freeman state, ‘metaphors are not just literary tools for ornamenting language…[but] indispensable to the human mind… [enabling] us to ‘see’ or understand one thing in terms of another’ (2008, cited Hansen, 2017). Though the mathematics of complexity can be applied to elements of literature, using complexity only literally does not live up to its status as a superconcept. For a concept to be able to be used in different disciplines, it must be able to be translated into the different ‘languages’ of said disciplines. This essay will first focus on how the works of Shakespeare conform to key features of complex systems, then explore if this can be explained by a non-complex systems approach, before looking beyond the texts at how Shakespeare as a cultural movement is a complex system.

By looking at the features of complex systems within Shakespearean plays, it can be seen how these works are examples of complex systems. Some of the key characteristics of complex systems are: decentralised control, local knowledge, non-linear interactions, existence of the system in a state between order and disorder (also known as ‘the edge of chaos’ or ‘bounded instability’), hierarchy, and self-similarity across scales, among others (Cilliers, 2002). The use of disguise or mistaken identity, which creates localised knowledge, is common to Shakespearean plays and according to Kreider ‘no plot device is more constantly recurrent’ (1934, p.1). In the first act of Twelfth Night, Viola tells the Captain
‘conceal me what I am; and be my aid for such disguise’ (Shakespeare, 2008, 1.2:50-52). The use of dramatic irony confines the elements of the system; the characters act independently of one another, without collective agency, as is characteristic of a complex system. The audience only ‘knows’ more than the characters because they have a more macroscopic view. Localised knowledge is understood by Hamlet, who tells Horatio ‘there are more things in heaven and earth... than are dreamt of in your philosophy’, the general ‘your’, appearing as ‘our’ in the first folio, showing how Hamlet understands the limitations of individual elements in this complex system (Shakespeare, 2005, 1.5:165-6).

The interactions of Shakespearean characters determine the narrative, and similarly, complex systems are sensitive to internal conditions; nonlinear interactions between elements cause positive (turbulent) or negative (stabilising) feedback. Though Lorenz’s ‘butterfly effect’ is often misappropriated, here nonlinear interaction between characters and its influence on the system has been mathematically modelled. Sprott shows how the interactions between Romeo and Juliet exemplify how ‘even simple nonlinearities can produce chaos when there are three or more variables’ (2004, p.312). The tragedy is caused by a series of destabilising interactions, not one ‘fatal error’.

Complex systems exist between order and disorder, at ‘the edge of chaos’ or in ‘bounded instability’; there are positive and negative interactions between their elements and no external direction. Within a play, this facilitates plot movement that is understandable to an audience. Argyros states ‘traditional narratives are... far-from-temporal-equilibrium dynamical systems capable of generating global order simultaneously with local randomness... the fractal folds of narrative... allow a culture to store tremendous amounts of information in a stable form, while simultaneously freeing that information’ (1994, cited Davis, 2009). This common state of disequilibrium in Shakespeare’s works can be seen as a reflection of the tensions of his time. Religion, the monarchy, and the collapse of medieval values all destabilised society. Shakespeare uses tools like letters and ‘trickster’ characters to stimulate disequilibrium. In a Midsummer Night’s Dream, disequilibrium is evident; Turner argues ‘Shakespeare uses mythic symbols to describe the ‘complexity’ of natural forces, in the sense that modern science gives the term’ (2008, p.34). In the final act of the play, Theseus describes Quince’s prologue as ‘like a tangled chain; nothing impaired, but all disordered’ (Shakespeare, 1979, 5.1:124-5), illustrating a view of disorder as not simply destructive. It is only through disorder that a complex system can evolve; as Lysander states, ‘the course of true love never did run smooth’ (Shakespeare, 1979, 1.1:134).

Another key characteristic of complex systems is a hierarchical structure, with self-similarity across scales. An example of this within Shakespeare’s work is the use of embedded narratives; the ‘play within a play’. These are used to reflect realities in the rest of the play, as well as the society in which it was written (Mehl, 1965). Hamlet is aware of this, stating the function of acting is to ‘hold... the mirror up to nature’ (Shakespeare, 2005, 3.2:21-2). Many of the key characteristics of complex systems, including decentralised control, localised knowledge, non-linear interactions, bounded instability, hierarchy, and self-similarity can be seen within the works of Shakespeare, and therefore it can be argued that these works are complex systems.

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However, because Shakespearean drama can be formulaic; using conventions of Elizabethan and Jacobean playwriting, these works can be seen as non-complex systems, rather than complex systems. ‘Indivisibility’ is not unique to complex systems; all systems are defined by the elements they are comprised of. This is not a new concept in literature; Aristotle’s ‘unity of action’ calls for all elements of the narrative to contribute (The Editors of Encyclopaedia Britannica, 2016). Types of systems are differentiated by their method of organisation; non-complex systems have structure and intention, whereas complex systems are organised by interactions between parts, and therefore have no such intention. Postmodernist critics suggest that Shakespeare’s plays are ‘inherently collaborative’ (Egan, 2014, cited Hansen, 2017, p. 20) in their creation, whereas others believe this to be exaggerated: Sharpe states, ‘[Shakespeare’s] plays were not written by someone else just as they were not summoned into being by the whole acting company’ (Sharpe, 2014 cited Hansen, 2017, p.20). However, whether Shakespeare’s plays were created by one person or were a collaboration, they were still created with intention, and therefore it can be argued they are not complex systems. Also, though occasionally subverting them, Shakespeare’s plays were created with an awareness of contemporary conventions of drama, including the use of soliloquy, asides, cross-dressing, and masque. The plays also largely follow structures of Comedy and Tragedy, in a way that would have been familiar and expected for a contemporary audience. Shakespeare’s ‘problem plays’ are exceptions, such as Measure for Measure, which does not clearly conform to either comedy or tragedy. Measure for Measure, however, does fit in with conventions of the ‘City Comedy’ genre of the early Jacobean period. Therefore, it can be argued that Shakespeare’s plays are non-complex systems as their structure is somewhat pre-determined.

Complex systems are open systems, interacting with their environment (Cilliers, 2002). This means that the boundary of what is part of, and what is not part of, a complex system is difficult to determine, and this distinction will be biased by the person who is making the decision. Also, the self-similarity of complex systems across different hierarchical levels adds another layer of ambiguity, as it is difficult to determine if the ‘outermost' level has been identified. ‘Shakespeare’ has come to mean much more than simply a collection of plays and poems, even within literature as a discipline; these works are not studied only by looking at their content, but also their context. Thus, it can be argued that the works of Shakespeare are a complex system if they are viewed as interwoven with their cultural impact. A key property of a complex system is emergence: the idea that interactions between elements within a system produce new phenomena. This leads to complex systems being defined not only spatially, but also temporally, with the history of the system being ‘co-responsible’ with the present for the system’s behaviour (Hansen, 2017, p.9). The cultural impact of Shakespeare’s works is unprecedented; it is interwoven into the present day western society, from language which uses Shakespearean neologisms, to new ways of crafting storytelling, to inspiration for new works. The impact of Shakespeare is not one way, it is part of an open complex system, as Davis suggests, the exchange between Shakespeare’s works and discourse communities gives rise to an ever-evolving complex system; ‘because a play emerges from the interaction between text and reader… they change with each audience member, and with other works, he or she has experienced’ (2009). Having engaged with a new interpretation, a modern-retelling or a piece of criticism, when returning to the original text, the reader will experience the text in a new way. Emergence is not unique to Shakespeare, as Paulson states ‘literary works exhibit the complexity of emergent systems… although texts are made of language, the passage from linguistic structure to textual effect cannot be described with anything like... the
grammatical description of sentences’ (1991, p. 47). Nevertheless, the vast scale of emergence from Shakespeare is the reason it is used here. The works of Shakespeare are part of a complex system; however, this is not clear unless the definition of the boundaries of the system are clarified and include the cultural impact that has emerged from Shakespeare’s original works.

In conclusion, when Shakespeare’s works are viewed in isolation, they do conform to many key characteristics of complex systems behaviour. Nevertheless, this does not mean that they can all conclusively be called complex systems, as they are formulaic: a key feature of non-complex systems. In order to understand Shakespeare as a complex system, his works must be viewed in their wider context, as an essential element, but not the only element of what ‘Shakespeare’ has come to mean culturally.

References


