Chaos theory is a mathematical concept which serves to challenge some of humanity’s most deeply held beliefs about the ultimate operations and functions of reality. Chaos theory suggests radically different ways of conceptualizing the apparently natural world and the very structures upon which reality is built, in turn suggesting what has been branded by many chaos theorists as a “new physics.” While chaos theory emerged out of mid- to late-twentieth-century speculative mathematics, it has also had a remarkable impact upon both the social sciences and studies in the humanities over the last three decades, especially in terms of the development of theories and understandings related to the origins and structures of human identity.

In general, chaos theory proposes that all seemingly natural systems—such as weather patterns, social interactions, and even highway traffic—are in fact controlled by complex and mysterious forces known as “strange attractors,” forces which are both random and determined, a notion that fundamentally goes against the apparent laws of logic upon which much of Western science and philosophy are based. Many chaos theorists point to the example of the “butterfly effect” as an illustration of a chaotic system. According to this notion, a butterfly flapping its wings off the coast of Africa could, in theory, stir up a wind current which could result in the development of a hurricane in the mid-Atlantic ocean, which could strike the eastern coast of Florida and cause massive destruction and loss of life. This famous illustration demonstrates the inherently complex and chaotic nature of something that would seemingly be as predictable as weather patterns and suggests that the root cause of most any event is ultimately unknowable and impossible to fully predict. Chaos theorists suggest that within a chaotic system such as the weather, there is indeed a system at work, but that such is a system that is both random and determined at once. What is called into question by chaos theory is not truly the nature of reality, but rather our ability to fully comprehend the operations behind it. Chaos theory has had a tremendous impact upon the ways in which human identity is conceptualized. Human identity, much like the weather, is an incredibly complex concept that is influenced by innumerable forces which are both random and determined at once. Chaos theory calls into question the true measure of control human beings have in terms of their own lives and suggests the countless and immeasurable forces which serve to shape a human being’s identity.

As a literary theory, chaos theory helps readers more deeply understand and appreciate the complex ideas behind some works of literature we might encounter. For example,
the application of chaos theory to a novel such as Lawrence Sterne’s *Tristram Shandy* reveals a deeper exploration of reality and human identity than critics and readers had previously realized. In this novel, the protagonist seems to be unable to control his destiny and to live at the whim of seeming chance, with the novel’s narration following no particular chronological logic. In fact, many critics had identified the novel as an exercise in illogic and disconnection. However, if the novel is read in light of some of the fundamental notions of chaos theory, we realize that Tristram Shandy’s consciousness is depicted as being controlled, in fact, by the “strange attractors” of the association of ideas and memories, associations that are at once both random and determined. Tristram Shandy is depicted by Sterne as seeming to lack a firm and determinable identity throughout the novel. Sterne, perhaps intuitively recognizing the various and unpredictable “strange attractors” that make up one’s reality, depicts Tristram Shandy’s identity as being constantly in flux and unpredictable due to the countless forces—both random and determined—that end up shaping it. Many postmodern twentieth- and twenty-first-century literary texts and films—in particular novels such as Thomas Pynchon’s *Gravity’s Rainbow*, Julio Cortazar’s *Hopscotch*, and Italo Calvino’s *Invisible Cities*, as well as plays such as Tom Stoppard’s *Arcadia* and films such as Gilliam’s *Twelve Monkeys* and Tarantino’s *Pulp Fiction*—demonstrate a conscious awareness and explore the ramifications of the notions concerning the ultimate structures of and forces behind reality, which chaos theory posits.

### Chaos Theory Applied to Shakespeare’s *Hamlet*

Shakespeare’s *Hamlet*, in many respects, perfectly illustrates many of the core principles of chaos theory. Hamlet himself, in fact, seems to possess a particular awareness of the chaotic nature of human existence. Throughout the play, Hamlet constantly questions not only his own motives and actions and their possible ramifications and effects, but also those of the various forces—both those that are natural and apparently supernatural—that are conspiring around him. Hamlet’s famous refusal to take any sort of firm action throughout much of the play can be understood as resulting from his intuitive awareness of the chaotic nature of his reality, a reality that appears to be both random and determined at once. *Hamlet* itself highlights, in miniature, the various seemingly unpredictable and chaotic forces that control reality. In a sense, the play itself makes use of a version of the famous butterfly effect that would be postulated more than three centuries later: The death of Hamlet’s father results, ultimately, in the utter collapse of the entire kingdom of Norway and the death of nearly every major character in the play. The entire world in which Hamlet lives—his entire reality, in fact, both external and internal—is depicted as being radically shifted by the death of a single human being. The events that are depicted and examined in the play,
then, illustrate the chaotic, complex, and ultimately unpredictable and seemingly random and determined forces upon which reality is structured. Most interestingly, however, is how Shakespeare positions Hamlet as being ultimately unable, for all of his intelligence and wit, to fully comprehend the underlying forces—or “strange attractors”—that shape reality. Reading Shakespeare’s Hamlet with a firm knowledge of chaos theory serves to reveal a surprising measure of awareness on Shakespeare’s part of the forces that control reality, an awareness that predates the scholarly exploration of chaos theory by nearly four centuries.