

**“We’re All Mad Here”:
Applying Chaos Theory to Lewis Carroll’s *Alice’s
Adventures in Wonderland* and *Through the
Looking-Glass*, and Tim Burton’s *Alice in
Wonderland***

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Abstract

Chaos theory, through its exploration of the construction of reality and its dynamics, provides a valid method for the analysis of any literary work. Research on the relationship between this theory and literary works has been mainly carried out in relation to postmodern texts due to the similarities they share. The *corpus* I intend to analyse consists, indeed, of a film released in the 2010s, but it also encompasses two texts that were written in the Victorian era and of which the film is an adaptation. Specifically, I aim to carry out a contrastive analysis of Lewis Carroll's novels *Alice's Adventures in Wonderland* and *Through the Looking-Glass*, and of Tim Burton's cinematographic adaptation *Alice in Wonderland* and prove that all three aforementioned texts can be read and understood as chaotic systems. To this end, I approach each of the three texts as a separate system and analyse the different ways in which chaos is presented in them, paying particular attention to its development. Through the analysis of the three versions of Alice's adventures I explore the extent to which the narrative structures and reality resemble each other. The analysis concludes in an exploration of a possible interpretation of the development of each system. I contend, in fact, that, far from being nonsensical, surrealist texts, both novels and the film are reflections of the reality in which they were experienced: the Victorian era, in the case of the two novels, and the 21st century, in the case of the film.

Keywords: chaos theory; *Alice's Adventures in Wonderland*; *Through the Looking-Glass*; *Alice in Wonderland*; narrative.

Abstract

La teoría del caos, al explorar la construcción de la realidad y sus dinámicas, proporciona un método válido para el análisis de cualquier texto literario. La aplicación de esta teoría a obras literarias se ha centrado principalmente en textos posmodernos, ya que ambos comparten varias características. El *corpus* que pretendo analizar consiste, en efecto, en una película estrenada en 2010, pero también en dos textos que fueron escritos en la época Victoriana, de los cuales la película es adaptación. Concretamente, mi objetivo es llevar a cabo un análisis contrastivo de las novelas *Alice's Adventures in Wonderland* y *Through the Looking-Glass* de Lewis Carroll, y la película *Alice in Wonderland* de Tim Burton que demuestre cómo dichos textos pueden ser leídos y definidos como sistemas caóticos. Para ello, abordo los tres textos como sistemas diferentes y analizo las diversas maneras en las que el caos está presente en cada uno de ellos, prestando especial atención a su desarrollo. A través de este análisis de las tres versiones de las aventuras de Alicia exploro hasta qué punto se asemejan las narraciones a la realidad. El análisis concluye con una exploración de la posible interpretación del desarrollo de cada sistema. Este trabajo sostiene, de hecho, que, lejos de ser textos surrealistas y sin sentido, ambas novelas y la película son reflejos de la realidad en la que fueron creadas: la época Victoriana en el caso de las dos novelas, y el siglo XXI en el caso de la película.

Palabras clave: teoría del caos; *Alice's Adventures in Wonderland*; *Through the Looking-Glass*; *Alice in Wonderland*; narrativa.

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1. Introduction

What I intend to do in this essay is to carry out a comparative analysis of Lewis Carroll's novels *Alice's Adventures in Wonderland* and *Through the Looking Glass*, and Tim Burton's 2010 film adaptation *Alice in Wonderland* through the application of chaos theory. Hayles defines this theory as an epistemological framework that presents chaos as a means to understand reality (2) and I contend that each of the texts in question are comparable to reality in that they can be conceived as chaotic systems that combine predictability and unpredictability. Furthermore, by focusing on the differences in the application of the theory to each text, I believe it is also possible to highlight the differences among the contexts that originally inscribed Carroll's and Burton's texts.

My goals in this paper are, therefore, multiple: in the first place, to explore Alice's narratives as chaotic systems; in the second place, to see whether the books and the film develop according to the same patterns, reach the same type of chaotic state, and achieve the same type of stability; and in the third place, to examine the context that may have triggered the development of each of their structures. To this end, I will start by introducing the theoretical framework and providing an overview of the origins and dynamics of chaos theory, as well as the impact it has had in the humanities. I will then define the narrative convention of the plot from the perspective of narratology, since the different types of plot structures will be relevant to determine the evolution of the chaotic phase. The theoretical framework will be followed by the comparative study, which will revolve around the way in which chaos works within the narratives and how they may differ from one another in their developments. At the same time, I intend to analyse the way in which both Carroll and Burton use the aforementioned narrative convention to construct chaotic systems within the stories. Finally, the analysis will conclude with the exploration of the return to stability, after which I will attempt a general reading of the systems.

Concerning the *corpora* I will be using in this essay, Burton's 2010 adaptation *Alice in Wonderland* is in itself a combination of both *Alice's Adventures in Wonderland* and *Through the Looking Glass*¹, as well as a sequel to them. This is why I have decided to omit Burton's 2016 film, *Alice Through the Looking Glass*, since the first film, as I have just indicated, already unifies both books. In addition, the events that

¹ I will henceforth refer to both novels and the film by the initials of their titles so as to avoid constant repetition.

constitute its plot are primarily the product of Burton's imagination, thus holding very little liaison with the original novel and exceeding the primary focus of this paper.

2. Theoretical framework

2.1. From determinism to chaos theory

Chaos theory has its roots in the 20th century. One of the predominant perspectives at the beginning of this century was determinism. José Pontes points out that several discoveries—made as early as in the 17th century, but mostly during the Enlightenment and the Rationalist era—gave rise to the belief that there is no such thing as chance and that everything can be predicted if we are familiar with the laws that govern nature (1155).

One of the first to acknowledge and support this approach was Laplace, who alleged that “given for one instant an intelligence which could comprehend all the forces by which nature is animated and the respective situation of the beings who compose it (...), nothing would be uncertain and the future, and the past, would be present to its eyes” (qtd. in Ismael 1), which perfectly describes the idea that it is impossible for any state of affairs to simply be the product of randomness. Newtonian mechanics and Einstein's general theory of relativity—which claims that the past, present and future of the universe all exist simultaneously, making chance impossible—also contributed, among many other theories, to this perception of the world as a predictably organised “giant clockwork machine” (Vedral 2). Thus, the idea of a system being deterministic is mostly understood in relation to predictability. It leaves no place for chance, asserting that if we are not able to foresee a given situation, it is not because it is the result of haphazardness, but because we have not yet discovered the laws that would allow its prediction (Cazau 5).

Einstein's theory gave a strong argument in favour of determinism. However, towards the middle of the 20th century, at a time in which this theory was becoming generally accepted, we witness the emergence of new ideas that challenge determinism. Among these, a new scientific field of study stands out: chaos theory, which was brought about by the study of thermodynamics². This theory offers a new approach to the physical world, which, in the face of the absolute anticipation of future events that

² The science that studies how systems with different temperatures interact, that is “the relationship between heat, work, temperature, and energy. In broad terms, thermodynamics deals with the transfer of energy from one place to another and from one form to another” (Drake)

determinism defends, proposes a vision of reality that, even if it acknowledges that predictability takes part in the dynamics of the world, it also recognizes that the universe has chaotic and unforeseeable aspects (Cazau 1).

The core discrepancy between both theories lies in social and cultural perceptions. Determinism places the spotlight on the final result by claiming that, regardless of the development of events, the outcome is already decided and unchangeable. If we consider that this is a theory that blossomed centuries before the birth of modern science, it is not surprising that it should show signs of having been strongly influenced by theocentrism. Determinism may, in fact, be said to mirror the religious belief that God has already decided our fate and, regardless of the process we undergo to reach it, we will not escape our destiny. On the contrary, chaos theory focuses its attention on the evolution of events and the unreliability of predictions, maintaining that results may fluctuate depending on the way in which the process takes place. As John Briggs and David Peat put it, chaos theorists have claimed that sophisticated systems are not “followed in causal detail because such systems are holistic: everything affects everything else” (qtd. in Hawkins 160). This rejects, therefore, the idea of an immovable fate and of God’s omnipotence, which aligns itself with Nietzsche’s notion that society no longer needed a divine force as guidance. Nietzsche’s famous *dictum* “God is dead” (Hendricks) is followed by another proclamation of death, that of the author, heralded by Roland Barthes, who claimed that the authorial control of the interpretation of his or her creations must give way to a much more fluid dialogue between reader and text (123). In other words, the interpretation of a work of art must be detached from its author. This is so because the unpredictability which chaos entails for those who are within the system, for whom those events constitute the present, is perfectly predictable from the author’s vantage point of view, as he or she can see them retrospectively (Rice 92). This was later followed by the questioning of the self promoted by structuralism, which rejected the anthropocentric view of reality and questioned Descartes’ idea of reason—*cogito*—as part of the creation of humans (Malpas 88). I will analyse this in depth when I discuss Alice’s character and the problematisation of her identity.

2.2. The dynamics of chaos

Chaos theory is based on the idea that there are no absolute certainties regarding the development of the events of the world because any incident, however small, can affect the unfolding of any situation to a great degree. As Cazau convincingly argues, chaos theory challenges the idea that reality³ is completely predictable, for every system will always have some aspects that are chaotic and, thus, cannot be predicted (6). Therefore, the laws of physics, such as cause and effect, are not applicable to every situation as a means to predict the future accurately. However, this does not mean that everything in the universe is chaotic and subject to randomness. In fact, as Prigogine asserts, chaos is only a phase between two states of stability: “fluctuations are harmless as they are followed by responses which bring the system back to equilibrium” (“Non-linear Science” 746). In Alice’s case, stability would be represented by her Victorian *milieu*, whereas chaos would correspond to Wonderland.

Chaos theorists claim that the unpredictability of reality does not occur due to a lack of knowledge of the principles of reality, but because the world has unpredictable temporary imbalances. The idea of chaos is better understood in relation to that of order or stability, in light of the fact that balance and predictability exist both before and after the chaotic phase. Taking this into consideration, what chaos theorists defend is that systems are both predictable and unpredictable, *i.e.* the laws of a system are enforceable as long as it is in a balanced state, but they are no longer useful once the system enters a chaotic phase, for, at that point, there ceases to be any linearity of events and the possible outcomes are so dependant on each and every element of the system that it is impossible to fully predict their individual behaviour (Cazau 3). In regards to this, Prigogine contends that “we have to find the narrow path between the alienating deterministic picture in which there is no place for creativity and innovation and a purely random world in which there would also be no place for human endeavour” (“Non-linear Science” 757). She gives this type of dynamics the name of “deterministic chaos”, since it refers to a system that holds a combination of both determinism and “a seemingly erratic motion characterised by unpredictability” (745).

³ In this case, something is bestowed the quality of being real when one accepts that it is not possible to define a single and unified reality for every single person, thus relativising reality. Therefore, in this essay I will assume that the attribution of realness to an event is done by trusting the sensorial experience of each individual, which means that the ability to perceive something through the senses is what determines whether it is real or not (Forrester 4).

A useful example to understand how “deterministic chaos” works and how the transition from order to chaos and then back to stability takes place is the one used by Cazau. He names the state of balance A and chaotic state B and claims that the beginning of the first state, state A, cannot be specified since there are no fixed starting points in the seamless unfolding of events in the natural order of reality. This idea will be crucial in the analysis of the novels and the film, given that it is possible to identify a single event that triggers the crossing-over from stability to chaos—in Alice’s case, the sudden appearance of the White Rabbit—but it is not really possible to determine at which point the phase of stability that precedes the transition into chaos had begun, especially because the story has very few external *analepses*. According to Cazau, at some unexpected point in A, and with seemingly no cause, a random element appears that makes the system turn to B, where it starts developing in a manner that makes predictions impossible. Once in state B, Cazau alleges that the system will start to chaotically and progressively evolve back to a state of stability, as the natural tendency of systems is towards order (12). It is within state B that we find the widely known butterfly effect: the idea that changes that would seem insignificant in the initial conditions of a system, that is, in A, can cause extremely large divergences in the development of B. In the first of Carroll’s novels, for instance, state A would take place at the very beginning, when Alice is lying next to her sister, who is reading a book. This is an extremely predictable scene for wealthy little girls in the Victorian Age, as domesticity was the feminine sphere. However, it is then when the triggering element, the White Rabbit, appears and drives Alice to fall down the rabbit-hole, taking her to Wonderland. This is when the chaotic phase starts. The latter will eventually also end and stability will once again be restored when Alice wakes up next to her sister. As I mentioned before, it is impossible to know the exact initial conditions since we cannot determine a specific starting point for state A: should we consider that lazy afternoon spent by her sister’s side as the state of balance? Or perhaps Alice’s entire childhood? The reader cannot fathom the extension of the state of balance, which may very well stretch all the way to the beginning of Queen Victoria’s reign. Thus, what chaos theory defends is that the impossibility of establishing the initial conditions of a system precludes the prediction of the development of events and the logic behind them once in the chaotic phase (6).

Another element of this theory that is relevant to my analysis of the structure of the novel is the fact that, as Prigogine claims, the transition from chaos to stability

branches out in two different paths (“Irreversibility and Randomness” 374). This branching-out is clearly found in the texts in question, inasmuch as the novels and the film exhibit that transition from chaos to order in strikingly different ways. The division occurs in what Prigogine denominates the “bifurcation point”, in which the system can develop in two different directions that will lead to one of the following: it will either continue to develop chaotically until it returns to the original state of steadiness it had before it became chaotic, or it will progressively self-organize until a new stability replaces the previous one (Cazau 7). This new state of balance is known as a “dissipative structure”, and it is created because chaos has moved so far away from the original balance that it has reached a point of no return (“Irreversibility and Randomness” 374-375).

The reason why some systems are not able to distance themselves enough to create a dissipative structure, whereas others are, is determined by the type of “feedback” they receive from the stable part of the system once in chaotic phase. On the one hand, as Harriet Hawkins convincingly argues, those systems that return to the original state do so because of what she calls “negative feedback”, which is used to “keep things in check” (158). This means that in this type of system, the structure itself is in a way trying to correct a deviation—chaos—and take it back to its original state. Thus, chaos is not allowed to drift away as far as to reach the irreversible point, which means that it is possible to return to the initial situation without chaos having provoked an evolution of the system. Therefore, it could be said that this kind of system resist change (Cazau 8). The other possible systems we may find, those that create dissipative structures, are able to distance themselves farther from the preceding stability because they receive “positive feedback”. This happens when, instead of trying to correct a deflection, the system embraces it because “positive feedback (...) pushes a system to spiral out of control” through catalysts that encourage chaos, such as the aforementioned butterfly effect (Hawkins 158). Therefore, this sort of system fosters change, aiding chaos in its spiralling towards the irreversible point, where it will separate from the other alternative path and create a dissipative structure, *i.e.* a stable structure that is different from the original one. It follows that evolution requires turmoil (Cazau 8-9). There is a clear resemblance between both types of systems and Alice’s story, inasmuch as the first novel was written in 1865, a time governed by both strong social and moral decorum, and the turbulence elicited by several social movements such as the working class struggle.

2.3. Chaos theory and literature

Since its emergence, chaos theory has been applied to many humanist disciplines, such as psychology, art, and, of course, literature. In these fields, it has provided not only a source of inspiration, as in Dadaism, in which rejection of the predictable and chance prevail through experimentation (Germán 114-115), but it has also endowed the reader/observer with a new way of interpreting all sorts of works. Paying closer attention to the literary world in particular, this theory has raised much interest, especially because, according to Parker, chaos theory provides a new perspective of the chaotic features that are apparent in narratives (2). He goes even further by claiming that “chaos theory can enhance our understanding of the dynamics of literary texts because it enables us to see what we have not seen before” (20).

The majority of the connections between chaos theory and literature have been limited to Modernism and postmodernism due to the similarity of principles of both fields (Aman 2); that is, they both share a rejection towards what preceded them and proposed a new way of expression—their very own “dissipative structure”—which defended “fragmentation, rupture, and discontinuity” (Hayles 11). This approach has been used to carry out several studies on how chaos theory might help interpret modernist and postmodern works, which in turn has entailed a reassessment of the interpretation of various literary works. For instance, James Joyce’s *Ulysses*, despite being primarily classified as belonging to Modernism, is widely agreed to also possess, to some extent, postmodern characteristics (McHale 2-3). The novel itself can be regarded as a chaotic system in which chaos intertwines with determinism in a diegetic cosmos that, despite allowing unpredictability, has eventually an extremely complex underlying order established by Joyce (Germán 116). As Rice claims, Leopold Bloom believes that he lives in a world where things are both the result of randomness—as is the case with his son’s death—and fate—as in his daughter’s transformation (89). The perspective of chaos theory also brought a revision of the influence of the external world in the development of chaos within the novels (Hayles 7), which goes in line with the aforementioned necessity to detach the author from the literary work. Discussing, once again, Joyce’s masterpiece, Rice explains that the “prospective-retrospective view (...), seeing design in past and future chance phenomena” (90) is prominent in the novel, since everything that to Bloom seems unpredictable is for the reader, in retrospect, a consequence of the initial state of affairs (90). Therefore, there is a clear similarity

between literature and reality, considering that they both work like chaotic systems in which chaos and predictability mix. Furthermore, in both literature and real life we find that we cannot predict the future accurately, but we are able to establish a relationship of events when we look at them in hindsight.

Regarding the novels that concern this paper, I would argue that Carroll's case in particular is extremely interesting since it is impossible for him to be a postmodernist because he lived about a century before the postmodern movement took place. Nevertheless, we could consider him a proto-postmodern, a forerunner of this current. As I have mentioned at the beginning of this essay, *AAW* and *TLG* are endowed with certain *tropoi* that would not become commonplace until the 20th century, *i.e.* the questioning of identity, existence and reality itself. In addition, they also break away from Victorian literary conventions—linearity, among other characteristics. It is in this sense that Carroll may be considered a predecessor of the postmodern movement, and that is also perhaps the reason why chaos theory seems to offer such a useful lens through which to analyse his novels and Burton's adaptation.

2.4. The plot

Out of the many literary conventions that could contribute to analysing the texts in question from the perspective of chaos theory, I have decided to focus on the plot. This is so since, as I will later explain in more detail, I believe that the development of chaos is strongly conditioned by the structure of the plot in each of the novels and the film. The first relevant distinction within the plot is between story and text. The story, also referred to as the *fabula* by Mieke Bal, is the deep structure of the text, which refers to “a series of logically and chronologically related events” (Bal 18). The text, on the other hand, has more to do with linguistic features and constitutes what is known as a text's surface structure. It is described by Françoise Grellet as “the discourse in which the story is told” (75). Out of these two, we are going to focus on the former, *ergo*, we are going to study how the story is affected by the elements that take part in its events, rather than the discourse used to narrate them.

One characteristic of plots is that every incident that conforms it must add to the overall action of the story, so that the absence of any of them disturbs the understanding of the plot (Aristotle, qtd. in Grellet 72). In addition, the construction of the story must have some underlying logical foundation, as Bal (11) states. She goes on to explain that

the narration should operate following the same principles that govern reality, such as, for instance, effect following its cause (19), which means that, for example, a bottle cannot break before someone drops it, but *after* and *because* of having been dropped.

With regards to its structure, there are two different ways in which a plot may be designed, according to Grellet. The first is the episodic plot, in which the events are loosely interconnected, as, for instance, we may see in *TLG* when Alice finds herself on a train wagon before inexplicably finding herself under a tree. Neither the characters of this scene nor the train seem to have any connection with the subsequent events of the novel. The second plot type is the dramatic plot proposed by Aristotle, in which the story begins by displaying general information about the characters, followed by a catalytic event that sets the action in motion. As far as the action is concerned, events are connected to each other in an ascending movement that peaks at the climax, *i.e.* the highest moment of tension that is decisive for the outcome of the action. The descending movement that follows the climax traditionally ends in a *denouement*, which consists in tying up loose narrative ends and giving closure to the plot (73-74). This is the case of *AW*, in which the initial situation of a party is interrupted by the appearance of the White Rabbit, which sets the action in motion by making Alice fall through the rabbit-hole and enter Underland. After this triggering moment, the events lead to the climactic scene of Alice's realisation of her identity and the fight with the Jabberwocky, after which we observe a *denouement* in her return to England.

The last narrative convention that I intend to deploy in my analysis is the fact that, according to Bal's description of the plot's structure, every single element is constructed in relation to a general model. This implies that any place or character with which the reader is presented, even if they are unfamiliar with them, will share some sort of element with something existing in the reader's referential reality (95). If the experience of the unfamiliar amidst the familiar, or, *vice versa*, of the familiar in an unfamiliar context arises feelings of anxiety or, at least, of disconcert, we can then speak of the 'uncanny', a concept introduced by Sigmund Freud (220) and present in many elements of the story, such as the apparently familiar garden in *TLG*, which turns out to be inhabited by talking flowers.

3. From order to chaos

3.1. Initial conditions

The first point that has to be clarified is that the three systems depart from a situation of stability in which the laws of our reality are enforced. This balance, however, does not begin with the narration, but it goes back further than the beginning of the text to a moment that goes beyond the time setting of both the discourse—the narrative structure of the text—and the plot—the deep structure of the text. This is so because reality tends to be in a state of stability, so the stability may last for an inestimable period of time before a chaotic phase, and in these cases, we are not provided with the information about the length of time during which the system has been stable, *i.e.* how long Alice’s life has been perfectly ‘normal’. In *AAW*, the reader only knows as much as the narration allows them to know about the aforementioned point A: that is, that Alice is sitting next to her sister on a river bank. Thus, the chronology and structure of reality in the story do not match those of the narrative, leaving the beholder with an information gap that resembles that of a beginning *in media res*. However, we are able to pinpoint exactly when this stability is disrupted by the element that will cause chaos to appear, the latter consisting in the instant in which Alice notices the White Rabbit. The almost complete absence of information about the conditions of the diegetic reality and about the characters themselves and their situation in the time frame of the stable phase with which the novel begins will also contribute to the subsequent unpredictability of events, since, according to the butterfly effect, every little thing can significantly affect the development of events. We only know that Alice is bored and that it is a hot day, which makes her feel “very sleepy and stupid” (7). With so much information omitted, such as her sister’s name, the way Alice looks, and the reasons why they may be where they are, the reader cannot even begin to foresee Alice’s reactions and behaviours. Even though the context provided is so scarce that it is almost non-existent, there still is *some*, nonetheless, just enough to know the where, who, how and when of the opening scene. This may be regarded as an indicator that, in order to have chaos, there *must* have been order before it.

The fact that the reader can scarcely build any expectations about the plot or Alice herself from the brief presentation of the initial state does not mean that the latter is a state of unpredictability. From the perspective of a reader contemporary to the

period in which the novel is set, it is completely logical that two girls should be at home and not, for instance, at Eton, which was exclusively for boys at the time. The leisurely activities they are carrying out simply mark them as female children of middle-class to upper-middle class families. This alone might generate a number of expectations in the reader. Alice's sister is reading and Alice is thinking about making a daisy-chain, the first indicating literacy, and to some extent, wealth, and the second exemplifying activities which were classified as being suitable for girls. Furthermore, Alice's behaviour also goes hand in hand with that of children, who tend to have the constant necessity of doing something to avoid boredom, which is what she does by first trying to read her sister's book and then by considering making a daisy-chain. In short, we have a 'normal' place for two 'normal' female characters who show a very 'normal' behaviour. Thus, we could assume that this scene does fit into the state of initial predictability found in the pre-chaotic phase of a system.

In *TLG*, we find what may seem a less vague situation, considering that it is a sequel of *AAW* and, thus, that the information provided in the first novel would be enough to determine the initial conditions with enough precision to be able to predict the following events. However, the initial conditions that precede the chaotic phase in the second novel are also too imprecise to predict the development of chaos, which does not mean, as already mentioned, that they are unpredictable themselves. Firstly, there is a time gap between the first and the second novel, so the events elapsed during that time and missing from the narrative would have been necessary to establish the exact initial conditions of the system. Instead, we are presented with Alice, her state—"half talking to herself and half asleep" (116)—and a vague setting, consisting of a "great arm-chair" (116) in what must be an indoor room, given that she is hearing "the snow against the window-panes" (118). Furthermore, the lack of information about the room is particularly relevant in this novel because the Looking-Glass House is created as a reflection of the initial room.

Nonetheless, even though we are not able to establish the initial conditions, we can classify this initial situation as stable because all the events that happen in it are predictable and obey the laws that govern our reality. I will delve into two instances of this, the first one being the moment in which Alice reprimands the black kitten for unwinding the ball of worsted, the kitten's action being very predictable, too, practically a *cliché*. In this scene, one may clearly see the law of cause and effect at work, *i.e.* if someone that is in a way subordinated to another person does what they should not, the

logical effect is for them to be reprimanded. Likewise, the lecture Alice gives to the kitten could also be seen as predictable since she makes particular emphasis on manners, a reference to the extreme importance of social *decorum* in Victorian Britain.

Regarding the film adaptation, *AW* provides many more details about the initial conditions than those provided in the novels. This might be so because, a film being a visual text, it does not leave much to the imagination in terms of setting or characterization. The details provided in the film may also serve a purpose: given the wide time gap between the end of *TLG* and the filming of *AW*, and given, as well, the enormous popularity of both novels, the director had to satisfy the viewer's curiosity as to what has been of Alice since the reader last met her as a young child, and also provide a reason for a young woman to behave as if she were still a child. The film reveals Alice's age, details about her family and also personality traits, such as her nonconformity to the establishment, her refusal to wear a corset and her questioning of propriety. Even though we are able to draw quite a clear picture of the initial situation, it is, however, impossible to know the exact conditions of the diegetic reality before she gets a glimpse of the White Rabbit. This is particularly true as far as Alice's feelings and behaviour are concerned. Although one could make some inferences from the way in which she acts—for instance, that she feels pressured to marry Hamish—there are many missing details that would be necessary in order to anticipate the development of the impending chaotic phase, one of them being the extent to which she is willing to sacrifice her happiness to secure her mother's. This doubt may arise because, despite her patent disagreement with most social rules, she also agreed, at some point, to be courted by Hamish.

As in the previous cases, in *AW* we also find predictability, which we can verify by once again applying the cause-effect law and considering the society in which the film is set. Firstly, the concept of *decorum* is at the heart of people's reaction to Alice's defiance of propriety. For instance, when she tells Hamish about her vision, his response is that she should keep her visions to herself. Here one can clearly see an example of Victorian morality that advocates emotional repression and ignoring the "otherness" that may exceed the boundaries of social norms. Another instance of the cause-effect law can also be appreciated when the conversation between Hamish's sisters and Alice is taking place. Alice blackmails them into telling her their secret, and they consequently reveal that Hamish is about to propose to her. This, in turn, causes

Alice's sister's anger because they have spoiled the surprise. Once again, the vagueness of the initial conditions does not entail unpredictability.

It is also noteworthy that, as far as the plot is concerned, in all three cases, the initial conditions of the system appear to be quite similar to the beginning of the dramatic plot structure described above, in which the beginning of a story is disrupted by a catalytic event. This occurs because these initial conditions contain the general information that the conventional beginning of a plot usually carries with it. However, while vague initial information may be sufficient for the development of a story constructed with the classic Aristotelian model, in terms of systems it condemns them to chaos, and *ergo*, unpredictability.

3.2. The triggering element

The initial conditions described in the previous section are, at a specific point in time, affected by an element that will nudge the system to spin out of control and into chaos. In the case of *AAW* and *AW*, this element is the White Rabbit. This does not imply, however, that the system automatically falls into chaos immediately after the first sighting of the White Rabbit; it is rather when Alice falls down the well that she enters the realm of chaos. In-between the sighting and the fall, there is a transitional narrative space in which order and chaos—Alice's world and the White Rabbit's—overlap, in which the dynamics of both coexist. Gradually, the chaotic elements increase in number until they completely take over and, after Alice has reached the floor, order is non-existent. Following the Rabbit is *per se* a logical response if we consider that Alice is “burning with curiosity” (7) about the fact that he has a waistcoat-pocket; so, we have a cause and an effect in this event. Nonetheless, the fact that a rabbit in a waistcoat-pocket appears is in itself nonsensical, since rabbits do not wear clothing. Thus, an element of chaos has intruded upon Alice's reality and unleashed the unpredictable. Reaching the bottom of the well clearly signals a rupture in the cause-effect *continuum*. After falling for a long time, Alice lands unscathed, which we can appreciate both in the novel—“Alice was not a bit hurt” (9)—and in the perfectly healthy Alice displayed in the film. Alice's willingness to enter the rabbit-hole is also relevant, given that, as we shall later on see, her eagerness matches the enthusiasm with which the British embraced industrialisation and scientific progress in the Victorian era. This, in turn, caused the uncertainty and social turmoil that Wonderland symbolise.

There is an interesting element that differs in the film and the book. In the novel's depiction of the scene in which the Rabbit looks at the watch, there is nothing to indicate that the Rabbit may have shown up deliberately, since he is not trying to communicate with Alice in any way. In the film, conversely, not only does the Rabbit look at the watch, but he points it to Alice, unmistakably making an invitation to follow him. I would argue that this causes a butterfly effect on the development of events within the chaotic phase. We can also see that, in both the novel and the film, the swift transition from order to chaos is also represented by Alice running. In fact, the novel even mentions that Alice did not even have time to think before she fell down the hole: "In another moment down went Alice after it, never once considering how in the world she was to get out again" (7).

Concerning *TLG*, I believe that the triggering element is Alice herself, or, more specifically, her imagination. As a result of the black kitten not moving properly, she wants to punish it, and that is when Alice devises the idea of a Looking-Glass House in which everything is different, albeit in a rather symmetrical way: "if you're not good directly (...) I'll put you through into the Looking-Glass House" (119). Thus, whereas in the first novel and the film it is the other world—personified in the White Rabbit—that seeps into Alice's, in this case, it is she who wants to send the kitten to the Looking-Glass House. After mumbling about what the latter could be like for some time, she suddenly finds herself on the other side of the glass: "In another moment Alice was through the glass, and had jumped lightly down into the Looking-glass room" (119). Therefore, the aforementioned swift transition is once again found here, yet, this time, it is not materialised in a spatial element such as the tunnel is, but through Alice's imagination. Furthermore, instead of it being a quick yet visible transition, in this case there is an information gap: the reader does not know how Alice got to the other side. These triggers might be regarded as going hand in hand with the Aristotelian plot structure once again, given that they are similar to the catalytic event that sets the story in motion. While in the traditional plot structure this is all the initial trigger is meant to do, in the systems of the texts in question, it also marks the beginning of the unpredictable stage.

4. The chaotic phase

4.1. Unpredictability and the butterfly effect

Once Alice finds herself in the other world, we can fully appreciate the unpredictability to which we have been referring. The first element through which we can see that the system is no longer in a predictable and organized phase is the fact that humans are not the only ones to have a consciousness. As we can see from the beginning of the chaotic phase in *AAW*, one of the aspects that the reader may find uncanny is the fact that animals seem to have an intellect equal to that of humans, which is articulated through their ability to speak. When, for instance, Alice sees the White Rabbit at the Queen's garden after the tea party, he is "talking in a hurried nervous manner, smiling at everything that was said" (66). This is proof that the Rabbit is aware of the behaviour he must have when interacting with the Queen of Hearts, just as any human servant of the Queen would. This could once again be read as a mirror of Victorian society itself and its strong sense of propriety, which seems to be very present in the novels. Thus, the barriers between humans and animals are blurred, and yet, the true contradiction that causes unpredictability is the fact that, even if some animals are equal to humans and they fulfil the same social functions as the former do, others are objectified and undervalued. When Alice is invited to play croquet, she is provided with a flamingo and a hedgehog, instead of a mallet and a ball; and she even laughs at the hedgehog's expression. One could interpret this as illogical: if animals are equal to humans in their abilities and they even fill the same positions as them, it would be logical that either all are regarded as 'people' or none of them are. What is more, while humans are never objectified, some animals are. This incongruity is particularly evident in the aforementioned croquet scene: "Alice put down her flamingo, and began an account of the game, feeling very glad she had someone to listen to her" (71). Alice is talking to the Cheshire Cat, who clearly exemplifies said lack of coherence in the perception of animals: she treats the Cat like a person whereas the flamingo is not even treated like an animal, but as an object. This inconsistency, apart from displaying the unpredictability of the actions of the characters—for one never knows which animals will be personified and which will not—may also be seen as an example of "negative feedback", a concept to which I will return later on.

The croquet scene with the flamingo and the hedgehog is also adapted by Burton. However, the scene in *AW* is quite different from the one in *AAW*. Contrary to the book, such behaviour towards animals is not seen as normal, but as cruel treatment enforced by the Queen's despotism. Indeed, when Alice comes across the tied hedgehog, she unties it and lets it flee from the Queen. I would perhaps say that this scene is constructed differently in *AW* due to the year in which the film was produced, which is part of a period in western history in which unjust treatment of the Other is emphasised to encourage the audience to ponder upon it. Hence, despite the uncanniness—the familiar merging with the unfamiliar—evoked by animals that can speak, there are no incongruences in the consideration of animals as equal to humans in a socio-cultural context in which the animal rights movement is gaining traction. However, this does not make the chaotic phase in the film any more predictable, as we shall see later on.

In the case of *TLG*, it is not only the animals that are modified to resemble humans, but so are plants. The ones Alice finds in the garden in *TLG*, for instance, are able to think and speak; it follows that, just like animals, they are anthropomorphised (132). Yet, animals and plants are not the only uncanny characters in *TLG*, for humans are also estranged from their 'normal' characteristics. The Red King and Red Queen, for instance, are not entirely human, since they have the shape of chess pieces, so while some animals are objectified, whatever is human-resembling is not, even though it may literally be a thing. Something similar happens when Alice has her first conversation with Haigha and the Unicorn, in which the latter treats her first as an object by asking *what* she is and then treats her as a fascinating monster. The Lion's reaction is also similar to that of the Unicorn's: "Are you animal—or vegetable—or mineral?" (195). These remarks make no sense considering that they do not question Haigha, who is also human and is there speaking to them. Thus, we can see that, in the second novel, all characters, whether human, animal or vegetable, are defamiliarised and their identity is questioned, further emphasising the instability of the chaotic phase. This, as we shall later explore, is extremely important in regards to Alice's identity, which, in turn, is the key element that will determine the transition from chaos back to order. The sense of uncanniness that the reader/viewer gets from all these elements is also related to the dynamics of chaotic systems in the sense that chaos consists in an attempt to distance from order, but is inevitably linked to it, just as familiarity and the unfamiliar coexist within the idea of the uncanny. Thus, these elements highlight the existence of a

connection with stability, while at the same time exemplifying the way in which chaos consists in a distancing from it.

With regards to the conversations among the characters in *AAW*, they are mostly completely absurd. In fact, many of the dialogues quickly turn into monologues, in which characters ponder on different possibilities. For example, in *AAW*, the Footman explains to Alice why it makes no sense to knock on the door, while exploring possible scenarios in which it would make sense to knock and wondering whether she is supposed to get in or not, in the first place. These, along with most conversations in both novels, are dead ends that do not help Alice at all and rather make her feel even more lost. It is thus logical that the plot should not be linear, for it seems that, unless the main character is helped and guided by other characters, there is no true aim in her journey. She just wanders from place to place, and everywhere she goes something different happens that has no connection with the previous events nor with the ones that follow. This obviously makes it an episodic plot structure, Alice being the only guiding thread we can follow. It also follows that, as events are not connected to one another, it is harder to predict them.

In *TLG*, there is another added source of unpredictability, since the dynamics of events is completely reversed at certain points. The clearest instance of this phenomenon may be witnessed in the scene in which the Unicorn and the Lion pause their fight to eat some cake. The events that take place in this scene are mainly two: the cutting of the cake, and the handing around of the pieces. This, at least, is the order events should follow, but the Looking-Glass cakes, as the Unicorn remarks, have different dynamics. In order to do it properly, the cake must be apportioned first and then cut. Here we may see that even the most basic law of reality, the law of cause-effect, is not universally applicable in the Looking-Glass House. Here the effect precedes the cause, that is, the cut marks appear in the cake and the pieces are distributed before somebody performs the act of cutting it. Yet, we also find sequences in which the order of events is not reversed, which makes the Looking-Glass world even more incoherent: if the rule is that chronology and cause-effect are symmetrically inverted in the Looking-Glass house, then said rule should apply to everything that happens while Alice is there, and it does not. Indeed, there does not appear to be a rule at all, which is particularly evident when Alice meets the Knight. If we were to follow the logic of the previously analysed scene, the Knight would first fall from the horse, and only then would the horse move unexpectedly. However, we can see that it is not

until the horse suddenly jerks that the Knight falls. Consequently, we cannot truly deduce the logic behind the Looking-Glass House events, since they seem to respond differently every time.

On the contrary, in *AW*, events are connected to one another and they all contribute to reach the climax of the story, which I contend is when Alice embraces her identity and makes sense of Underland. Regarding the development of the events, I would further argue that what happens in the film is an example of the butterfly effect. As already pointed out, the White Rabbit pointing his watch at Alice constitutes the triggering element that initiates a butterfly effect. By pointing at the watch, the Rabbit makes Alice responsible for the subsequent unfolding of events: she must choose whether or not to follow him and fulfil some sort of mission. The setting of a second objective later on, that she embrace her identity in order to slay the Jabberwocky, indicates that there must be some cohesion in the events that will occur during the chaotic phase. At the same time, there is also going to be a need for characters not to only cross paths with Alice but also to help her to fulfil her mission. These actions, in turn, will lead to Alice finally accepting herself, and thus, empowering herself to slay the Jabberwocky. If the now proverbial flapping of a butterfly's wings in Brazil is able to cause a tornado in Texas, one could say that, in this case, the pointing of a watch can lead a woman to slay a Jabberwocky⁴. Taking all of this into account, one might contend that, even though we are still at an unpredictable stage, novels show a higher degree of unpredictability than the film.

4.2. “Feedback” and bifurcation

Regarding the type of “feedback” chaos receives in each of the systems, *i.e.*, order's reaction to chaotic events, both in *AAW* and *TLG* we find “negative feedback”, whereas in *AW* there is “positive feedback”. The first sign of “negative feedback” which we can appreciate in *AAW* is related to something that was previously mentioned: the arbitrary personification of certain animals and the objectification of others. I would argue that, in *AAW*, the stable phase—the world from which Alice comes—is trying to correct the deviation that the existence of rational animals entails, inasmuch as, even if animals are anthropomorphised, some of them are treated the same way they would be treated in our reality, that is, as inferior to humans. One could see this as the original

⁴ Even if it will not be analysed in this paper, the clash between the lack of chronology in the events and the linearity of time is noteworthy in that it reflects a system's ultimate tendency towards order.

order of the system trying to dominate chaos. In the film, on the other hand, the objectification of animals is regarded as cruelty rather than the norm. I believe that in this case the “feedback” chaos is receiving is positive, because instead of trying to correct the “otherness” created by the chaotic phase, it reinforces it by not only providing animals with minds, but also allowing their treatment to be equal to that of humans.

Another element that differs in the film is related to the Queen of Hearts’ famous quote “off with their heads”. In *AAW*, we are told by the Gryphon that in spite of her ordering executions, “[i]t’s all her fancy, that: they never executes nobody” (78). Thus, we can see that this version of the other world, apart from making the novel more unpredictable than the film, also puts much more rigid boundaries on what can and cannot happen because it is as if events were being orchestrated by someone that does not want the Queen to go too far and act on her words. On the contrary, in *AW*, the Red Queen’s “off with their heads” holds a rather different significance since she follows through with her words and her sentence is actually carried out. In fact, in order for Alice to get to the castle, she first has to cross a pit full of the heads of those whom the Queen has beheaded, among which is the Red King himself, as the Red Queen herself later confesses. In Burton’s text, the madness of the Queen, instead of being restrained to some extent, is allowed to escalate infinitely, augmenting the chaos and disorder. This indicates the different “feedback” each of the systems receive: one that needs to put limits on the insanity of the Queen so that the system does not move too far away from stability, as is the case with *AAW*; and another one that lets characters ignore Victorian England’s moral rules altogether, as is the case with *AW*. This may be the reason why the chaotic phase is less predictable in the novels than it is in the film: in *AW*, chaos owes its intrinsic unpredictability to the “positive feedback” it receives; in *AAW* and *TLG*, unpredictability is combined with an attempt to control chaos on behalf of the stable part of the system, which causes further instability. As we shall see later on, this is particularly meaningful when extrapolated to the socio-cultural contexts in which Carroll and Burton respectively create their texts.

In *TLG*, the first sign of “negative feedback” may be appreciated in the episodic structure of the plot, since the compartmentalisation of the narrative into independent units makes it difficult for chaos to grow rampant. This might be regarded as yet another instance of the system keeping a firm grip on the chaotic phase, given that every time chaos is about to distance itself too much from order, the system either brings in an

element that will help to stabilise the situation or it puts an abrupt stop to a scene and makes Alice start from scratch in a new setting and in a new sequence of events. In the scene in which she is in the forest and forgets who she is, for instance, the Fawn suddenly shows up and takes her out of there. Just as the system does not seem to let the Queen spiral completely out of control, a situation that is becoming increasingly upsetting is diverted towards a more manageable one—*i.e.* one in which she remembers her name again. Something similar happens during Alice’s encounter with the White Queen, in which they discuss the fact that the Queen has pricked her finger. In this scene, events are happening backwards, since the Queen screams in pain *before* she is hurt. Exactly at the moment in which the cause *follows* the consequence, that is to say, at the moment in which the subversion of the law of causality is sealed, the system rearranges itself, the scene is abruptly transformed, and Alice finds herself in a shop with a sheep. The system pulls Alice out from the scene and places her somewhere else instead of letting the situation develop away from order beyond the point of no return. We can, therefore, conclude that the type of plot deployed in each of the texts is also closely related to the development of the system, considering that whereas the episodic plot displayed in *AAW* and *TLG* seems to be an indicator of a system that has “negative feedback”, Aristotle’s dramatic plot is, in *AW*, a sign of the free development of chaos and the creation of a dissipative structure—which will be later explained.

The final element I am going to analyse with regards to the “feedback” is Alice’s identity and the extent to which the other land is ‘real’, since I believe this is the divergence between the books and the film that allows *AW* to reach and go beyond the bifurcation point, which is not the case with the novels. In the three narratives, Alice’s identity is constantly questioned. In *AAW*, Alice herself questions it from the very beginning of the chaotic phase. Once in the hall, she starts to wonder whether she is herself or someone else, eventually concluding that she is not Alice but Mabel, one of her friends. This may be Alice’s way of disassociating from the strangeness of the situation. As she cannot accept the situation or rationalise it with her own identity, she creates an “otherness” to distance herself from what is happening. We can see how her bewilderment grows with each event that she experiences, as it becomes patent during her conversation with the Caterpillar. When it asks her who she is, she answers: “I—I hardly know, sir, just at present (...) I’m not myself” (37). If she resorts to self-alienation in order to control chaos, she will ultimately resort to question the reality of the other world in order to completely detach herself from chaos. Her awakening and

concluding that it was all an inconsequential dream points in this direction. Her identity is also questioned in *TLG*, but, in this case, it is challenged to the point that her very existence is made conditional on the existence of the Looking-Glass World itself, for Tweedledum and Tweedledee tell her that *she* is not ‘real’, but part of the Red King’s dream. If the Looking-Glass World is not ‘real’, it follows that neither is the Red King, let alone a dream of his. If Alice wants to be ‘real’, she needs to believe that the other world is ‘real’ too. Although, at first, she is absolutely sure that Tweedledum and Tweedledee are lying, she later finds herself using the distorted logic proposed by the inhabitants of the chaotic world to her advantage: “I do hope it’s *my* dream, and not the Red King’s” (198). She questions her own existence and assumes that everything must be *someone’s* dream. Thus, she now uses denial as a way of keeping chaos at bay, while at the same time playing, as it were, by the rules of the other world. This also means that, in both novels, Alice never reaches a tipping point that takes her so far away from the order from which she comes that she cannot return to it.

In *AW*, her existence is also continually questioned because the characters are not sure whether she is the ‘real’ Alice or not, and because she, in turn, believes that Underland is just a product of her imagination, a dream⁵. Nonetheless, the experiences she undergoes, such as her being the only one who can control the Bandersnatch, or the Hatter’s reassurance that she is the ‘right’ Alice, give her more confidence in herself. As a consequence, her certainty about her identity gradually rises to a point in which, during her last conversation with Absolem, she is able to remember the repressed memories of her childhood, which are the events that take place in the novels. This makes her realise that she is, in fact, the ‘real’ Alice and that Underland is not only part of a dream but a reality that merely *seems* surreal from the perspective of the dimension from which she comes. Therefore, in Burton’s text there *is* a tipping point that paves the way for a new and improved stability, given that after accepting that she has been in Underland before and that the place is ‘real’, she is to some extent forced to find some sort of significance to its existence and embrace it as part of her ‘true’ identity. This has interpretative consequences both from a psychological and social perspective, but I will solely focus on the latter due to the formal limitations of this dissertation.

⁵ The oneiric dimension may be experienced in two ways: as completely natural if the logic of dreams is accepted, or as absolutely nonsensical if the internal logic of the dream is resisted. In this case, the fact that Alice’s experience is part of a dream does not tip the balance in either direction, since Alice alternates resistance and acceptance (Fernández Menicucci)

5. Conclusion: Reaching stability

As we have seen, depending on the type of “feedback” the books and the film have—respectively, negative and positive—a system does or does not return to the previous stability. The systems in the books return to the same state of order in which they were before Alice entered the other world. All those corrections that interrupt situations in which chaos is about to sever the last bonds that tether the world of order to the world of chaos are the system’s way of forcing stability before reaching the point of no return. It is as if nothing had happened, as if chaos had only been a mistake that had to be reabsorbed. In fact, when Alice wakes up at the end of *AAW*, she is told to go drink her tea, which she does, and while she goes she is “thinking (...) what a wonderful dream it had been” (105). Thereby, one may contend that even though she remembers the chaotic phase, she categorises it as a mere dream that does not fit into her world’s idea of reality so it does not have to be taken seriously, which means that it no longer affects the stability she had at the beginning of the novel. Therefore, one could say that, to some extent, the oneiric experience is like chaos between two states of stability. The same thing happens in *TLG*, in which Alice also concludes that the other world was just part of a dream. Again, she does not have to make any sense of its “otherness” because it was not part of her reality. In fact, she has even forgotten about these dreams when we encounter adult Alice in Burton’s film, who does not even remember the different characters of the books when she meets them. However, this is a choice made by Burton, so it may only reflect the development of *TLG* to a certain extent, given that Carroll’s perspective is missing. I would contend that the reason why the novels are not able to reach a new and improved stability is that, in spite of their surrealist appearance and their being chaotic systems, they are born out of a Victorian society to which the reader has to return as soon as the book is put down. One could then say that Carroll is presenting all radical attempts to break with and escape from Victorian social, economic and cultural order as futile because Victorian order will always prevail. What is more, the wild creativity and endless possibilities of a chaotic state in which every individual is free to act and react in unpredictable ways are as short-lived as a dream because the hegemonic system does not allow individual deviance. This means that, notwithstanding the fact that Carroll presents a system containing elements that are similar to those later developed in postmodernity, an era in which individualism and the search of personal free agency and self-construction are culturally acceptable and even desirable, his

character is not able to escape the much less individually-oriented mindset of Victorian times. The questioning of the self that is found in Alice's novels is not resolved, which may be read as a way of expressing the fact that in spite of the attempts to foster individual thought, the rigid moral, aesthetic and political rules that characterised the Victorian period were eventually dominated by a socio-cultural mindset that placed "a considerable amount of emphasis on collective rather than on individual action" (Briggs 17), leaving no space for the "otherness" that individuality entails.

Furthermore, the curiosity Alice shows when voluntarily entering the rabbit-hole may also be a reflection of British society as a whole, considering that the time in which the novel was written was extremely prolific in terms of scientific and geographical discoveries, which allowed for the expansion of the British Empire. However, when Alice is in the chaotic phase, which in social terms would refer to the unexplored, "otherness" seems to be only tolerated if somehow tamed, and is, in general, actively resisted by Alice, who, standing symbolically for Victorian British society as a whole, cannot really accept novel ideas such as deviance from the norm and boundless self-expression, and treats them as mistakes that must be corrected, rather than realities to be accepted. Therefore, the novels show the impossibility of the coexistence between Victorian Britain and the "otherness" that Wonderland represents and that symbolises those ideas and people who were marginalised by society—including, of course, non-white subjects in the colonies. This, in turn, is why Alice's adventures are eventually classified as dreams; if their reality is denied, their "otherness" is neutralised and they no longer pose a threat to the stability of Victorian society. This may be the reason why the transition from chaos to order is more aggressive in the novels than in the film. In the former, the transition is almost instantaneous and carried out during a violent scene—the cards attacking Alice in *AAW* and the fight at the dinner table in *TLG*—which may be due to the fact that these scenes are the final pull from the system to force the return to order and close the cycle.

In *AW*, on the other hand, Alice returns to England of her own will after having been able to accept the "otherness" Underland represents and using it for self-improvement. Hence, one may say that, in the case of the film, by allowing chaos to develop freely, the system is able to reach new and improved stability and to create a "dissipative structure", instead of returning to the original order. In fact, we can see how her character is changed after her trip because she displays a self-confidence she lacked before entering the rabbit-hole, which helps her to create a new and unconventional path

for herself. She refuses to marry Hamish to secure a future that would be ‘proper’ for her according to Victorian standards, and embarks, instead, on a journey to make a new future for herself. In this sense, Burton’s text is as reflective of 21st western values, as Carroll’s texts of Victorian society. Difference⁶ and uniqueness are seen as positive in 21st-century politically correct discourses, and the ideal of self-acceptance is very much present in western mainstream culture. Therefore, the “otherness” which Underland embodies is no longer portrayed as an *extravaganza* that needs to be suppressed, but as the diversity that the system needs to embrace in order to grow and move forward.

⁶ Alice’s character herself represents the evolution of gender equality. She is a reflection of the process of female empowerment and self-assertion that is given so much relevance in contemporary media. However, an in-depth analysis of gender representation in Burton’s film should be the topic of a separate dissertation.

Works Cited

- Aman, Yasser K. R. "Chaos Theory and Literature from an Existentialist Perspective." *CLCWeb: Comparative Literature and Culture*, vol. 9, no. 3, Sept. 2007. doi.org/10.7771/1481-4374.1226. Accessed 30 Apr. 2020.
- Bal, Mieke. *Narratology: Introduction to the Theory of Narrative*. University of Toronto Press, 1985.
- Barthes, Roland. "The Death of the Author." *Twentieth-Century Literary Theory*, edited by K. M. Newton, 2nd ed., Macmillan Publishers Limited, 1997, pp. 120–123. *LinkSpringer*, doi.org/10.1007/978-1-349-25934-2_25. Accessed 13 May 2020.
- Briggs, Asa. "Victorian Values." *In Search of Victorian Values: Aspects of Nineteenth-Century Thought and Society*, Manchester University Press, 1988, pp. 10–26.
- Burton, Tim, director. *Alice in Wonderland*. Walt Disney Pictures, 2010.
- Carroll, Lewis. *Alice's Adventures in Wonderland & Through the Looking Glass*. 1865, 1871. Sterling Publishing, 2015.
- Cazau, Pablo. "La Teoría del Caos." *Antroposmoderno*, 9 Oct. 2002, www.antroposmoderno.com/antro-articulo.php?id_articulo=152. Accessed 30 Apr. 2020.
- Drake, Gordon W. F. "Thermodynamics." *Encyclopædia Britannica*, 24 Mar. 2020, www.britannica.com/science/thermodynamics. Accessed 26 Apr. 2020.
- Fernández Menicucci, Amaya. Personal interview. 30 Apr. 2020.
- Forrester, Rochelle. *Sense Perception and Reality: A Theory of Perceptual Relativity, Quantum Mechanics and the Observer Dependent Universe*. 2nd ed., Best Publications Limited, 2014. SSRN, papers.ssrn.com/sol3/papers.cfm?abstract_id=2571544. Accessed 07 May 2020.
- Freud, Sigmund. "The 'Uncanny'". *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XVII (1917-1919): An Infantile Neurosis and Other Works*, 1919, pp. 217-256. www.arch.mcgill.ca/prof/bressani/arch653/winter2010/Freud_TheUncanny.pdf. Accessed 30 Apr. 2020.
- Germán, Diego. "Caos Creativo". *ResearchGate*, Jan. 2008. www.researchgate.net/publication/41003132_Caos_Creativo. Accessed 30 Apr. 2020.

- Grellet, Françoise. *A Handbook of Literary Terms: Introduction Au Vocabulaire Littéraire Anglais*. Hachette Supérieur, 2013.
- Hawkins, Harriet. *Strange Attractors: Literature, culture and chaos theory*. Prentice Hall, 1995.
- Hayles, N. Katherine. Introduction. *Chaos and Order: Complex Dynamics in Literature and Science*, by Hayes, The University of Chicago Press, 1991, pp. 1-36.
- Hendricks, Scotty. “‘God is dead’: What Nietzsche really meant.” *Big Think*, 12 Aug. 2016, bigthink.com/scotty-hendricks/what-nietzsche-really-meant-by-god-is-dead. Accessed 26 Apr. 2020.
- Ismael, J. T. “Probability in Deterministic Physics.” *The Journal of Philosophy*, vol. 106, no. 2, 2009, pp. 89–108. *JSTOR*, www.jstor.org/stable/20620154. Accessed 30 Apr. 2020.
- Malpas, Simon. “A Postmodern Victorian? Lewis Carroll and the Critique of Totalising Reason.” *Varieties of Victorianism: The Uses of a Past*, edited by Gary Day, Palgrave, 1998, pp. 80–97, [books.google.es/books?id=hWewCwAAQBAJ&pg=PA80&lpg=PA80&dq=A Postmodern Victorian? Lewis Carroll and the Critique of Totalising Reason&source=bl&ots=DCe147ykUA&sig=ACfU3U37P-N7UCPdff_7ikNEsrxB4Sp9mQ&hl=en&sa=X&ved=2ahUKEwiEy9CEmZ3oAhWGMbQKHapmCjoQ6AEwAnoECAkQAQ#v=onepage&q=A Postmodern Victorian? Lewis Carroll and the Critique of Totalising Reason&f=false](https://books.google.es/books?id=hWewCwAAQBAJ&pg=PA80&lpg=PA80&dq=A+Postmodern+Victorian?+Lewis+Carroll+and+the+Critique+of+Totalising+Reason&source=bl&ots=DCe147ykUA&sig=ACfU3U37P-N7UCPdff_7ikNEsrxB4Sp9mQ&hl=en&sa=X&ved=2ahUKEwiEy9CEmZ3oAhWGMbQKHapmCjoQ6AEwAnoECAkQAQ#v=onepage&q=A+Postmodern+Victorian?+Lewis+Carroll+and+the+Critique+of+Totalising+Reason&f=false). Accessed 30 Apr. 2020.
- McHale, Brian. “Constructing (Post)Modernism: The Case of ‘Ulysses.’” *Style*, vol. 24, no. 1, 1990, pp. 1–21. *JSTOR*, www.jstor.org/stable/42945826. Accessed 30 Apr. 2020.
- Parker, Jo A. *Narrative Form and Chaos Theory in Sterne, Proust, Woolf, and Faulkner*. Palgrave Macmillan, 2007. *LinkSpringer*, link.springer.com/book/10.1057/9780230607217. Accessed 30 Apr. 2020.
- Pontes, José. “Determinism, chaos, self-organization and entropy”. *Anais da Academia Brasileira de Ciências*, vol. 88, no. 2, June 2016, pp. 1151-1164. *ResearchGate*, www.researchgate.net/publication/304004854_Determinism_chaos_self-organization_and_entropy. Accessed 30 Apr. 2020.

- Prigogine, I. "Irreversibility and randomness". *Astrophys Space Science*, vol. 65, no. 2, Oct. 1979, pp. 371–381. *LinkSpringer*, doi.org/10.1007/BF00648502. Accessed 30 Apr. 2020.
- . "Non-linear Science and the Laws of Nature." *Journal of the Franklin Institute*, vol. 334, no. 5-6, Sept.-Oct. 1997, pp. 745-758. *ScienceDirect*, doi.org/10.1016/S0016-0032(97)00025-2. Accessed 30 Apr. 2020.
- Rice, Thomas Jackson. *Joyce, Chaos, and Complexity*. University of Illinois Press, 1997, archive.org/details/joycechaoscomple00rice/page/6. Accessed 30 Apr. 2020.
- Vedral, Vlatko. "Is the Universe Deterministic?" *New Scientist*, vol. 192, no. 2578, Nov. 2006, pp. 52-55. *ProQuest*, ehu.idm.oclc.org/login?url=https://search-proquest-com.ehu.idm.oclc.org/docview/200427514?accountid=17248. Accessed 30 Apr. 2020.