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# The Portrayal of Human Chaotic Behaviors as Exemplified in Chuck Palahniuk's *Choke*

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### Abstract

Chaotic human behavior refers to the exhibition of unpredictable, disrupted, or disordered manners. The chaotic individuals embrace chaos as a means of self-expression or rebellion against particular harmful experience and to defy societal norms. They act impulsively and destructively; their behavior may stem from a desire to disrupt established systems or challenge authority. When they reach the edge of chaos, the most exciting place to be, though it is insecure condition sometimes, to get balance between order and chaos, they manage to overcome their limitations and liberating themselves from the self-destructing thoughts, accordingly they reorder the disorder and chaos. In fiction, such characters often create conflicts and unpredictability within the story. They can serve as catalysts for conflict, pushing other characters to question their own beliefs or take action. Fictional example of chaotic characters include in Chalk Palahniuk's Choke. This paper aims at analyzing the human behavior within a chaotic system and suggests chaos theory as a systematic approach to analyze the novel *Choke*, demonstrating human behavior between determinism and free will within a chaotic system, handling the life of its main character, Victor, who live in chaos as a consequence of his damaging childhood and his struggle scrutinizing his behavior to get order back. He advocates for anarchy and destruction as a

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means of personal liberation, whose violent and antisocial behavior challenges the boundaries of morality. This novel serves as catalysts for chaos and reordering the disorder. To attain this aim, the study adapts chaos theory as an approach of analyzing this topic in *Choke*. At the end when he reached the maximum of chaos, he gets the balance between order and chaos liberating himself from his self-destructive thoughts. He owns eventually a free will to change his destiny and find out new paths of happiness and self-organization. **Keywords**: Chaos Theory, determinism, free will, Palahniuk, and *Choke*.

تصوير السلوكيات البشرية الفوضوية كما يتجلى في رواية تشولك بولانيك اختناق

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المستخلص

يشير السلوك البشري الفوضوي إلى إظهار سلوكيات غير متوقعة أو معطلة أو مضطربة. يتبنى الأفراد الفوضويون الفوضي كوسيلة للتعبير عن الذات أو التمرد ضد تجربة ضارة معينة ولتحدى الأعراف المجتمعية. يتصرفون بشكل متهور ومدمر . وقد ينبع سلوكهم من الرغبة في مقاومة الأنظمة الاجتماعية السائدة أو تحدى السلطة. عندما يصلون إلى حافة الفوضي، وهو المكان الأكثر إثارة للتواجد فيه، لتحقيق التوازن بين النظام والفوضــــي، فإنهم يتمكنون من التغلب على قيودهم وتحرير أنفسهم من الأفكار التدميرية الذاتية، وبالتالي يعيدون ترتيب الأمور. هذا الموضوع لاهميته ولكونه يثير الكثير من الاسئلة حول واقعية المواضعة التي يطرحها تم تناوله في الادب الروائي.حيث غالبًا ما تخلق مثل هذه الشخصيات الروائية الكثير من التسااؤلات والصراعات وعدم القدرة على التنبؤ بما سيحدث في القصية. وهذا الأمر يمكن أن يكون بمثابة محفزات للصيراع، مما يدفع الشخصيات الأخرى إلى التشكيك في معتقداتهم الخاصة أو اتخاذ الإجراءات اللازمة. من الأمثلة الخيالية للشخصيات الفوضوبة ما ورد في رواية تشوك بولانيك "خنق". يهدف هذا البحث إلى تحليل السلوك الإنساني ضمن نظام فوضوى، وبقترح نظرية الفوضمي كمنهج لتحليل رواية الاختناق، واظهار السلوك الإنساني بين الحتمية والإرادة الحرة ضمن نظام فوضوى، وتناول حياة شخصيته الرئيسية فيكتور، الذي يعيش في حالة من الفوضي نتيجة طفولته المدمرة وكفاحه في مقاومة سيلوكه الفوضوى الاستعادة النظام. وهو يدعو إلى الفوضى والدمار كوسيلة للتحرر الشخصي، الذي يتحدى سلوكه العنيف والمعادي للمجتمع حدود الأخلاق. تعمل هذه الرواية كمحفز للفوضي وإعادة ترتيب الفوضي. ولتحقيق هذا الهدف اعتمدت الدراسية نظرية الفوضي كنهج لتحليل هذا الموضوع في

الاختناق. وفي النهاية عندما يصل إلى أقصى حد من الفوضى يحصل على التوازن بين النظام والفوضى ويحرر نفسه من أفكاره التدميرية. إنه يمتلك في النهاية إرادة حرة لتغيير مصيره وإيجاد مسارات جديدة للسعادة والتنظيم الذاتي .

#### **1.1 Introduction: Chaos Theory**

The debate over determinism and free will is as ancient as western philosophy. Is a human free to act and hold responsibility for that action, or does everything have a cause? Thus that free action contracted with the idea that everything is determined. This paper approaches this controversial problem within the chaos theory which embraces the idea of determinism. Sometimes it shows that free will might make a difference in a world apparently governed by universal power. In recent years the theory of chaos has been applied tentatively aiming to examine chaotic dynamics in human behavior. Experiments illustrate that the variable facets of human behavior show nonlinear and chaos especially when it relates to motivation and affect which are basically processes of human behavior.

The word chaos comes from "khaos" the Greek word, which means "gaping void". It is difficult to define but easy to recognize once you see it as the mathematicians say. In other words it is a state of total confusion or predictability in the behavior of a complex natural system. In fact chaos theory concerns the complex, non-linear dynamic systems. It is an offshoot of mathematics that studies the systems which are ordered apparently "deterministic" but hide chaotic behaviours (Biswas & Hasan, 2018). It also deals with systems that are shown to be chaotic but have an underlying order. These systems with deterministic nature are not predictable and their behavior is called deterministic chaos which suggests the singular and unique development of each incidental track in the system and therefore it is predictable for the last or coming times except when the initial data of that incidental track is known precisely otherwise it is absolutely unpredictable (Biswas & Hasan, 2018).

Before the chaos system, it was assumed that all systems are predictable and the accuracy of the prediction dependent on the accuracy of the measurements of the system variables, chaos theory changed this view. Chaos reminds the individuals that in spite of their best plans, they face unexpected, unpredictable incidents and for unknown reasons that force their plans to deviate (Till, 1992). 'The butterfly effect', while the flapping of a butterfly's wings in a certain part of the world could, theoretically speaking, cause a hurricane thousands of miles away. An underlying principle of chaos, as Edward Lorenz the official discoverer of chaos theory, describes how small change in one state of deterministic nonlinear system can result in a large differences in the latest state 'sensitive dependence on initial conditions' which causes a chain of events that prevent the predictability of a larger scale phenomena. The deterministic nature of these systems does not make them predictable.

Chaos theory is based on three main principles or concepts such as deterministic models, sensitivity to initial conditions, and butterfly principle. The first is named the "butterfly effect", which means a tiny difference in initial parameters will result in completely different behavior of a complex system which indicates the possibility of matching between similar phenomenon or systems. The unpredictable initial conditions may lead to what is called butterfly effect in which a factor extremely minor and remote can lead to disarrangement of a great prominence. The second principle is the "uncertainty" which prohibits accuracy. The third principle is called the attractor, which represents the behavior of the chaotic system and causes unpredictability with time (Till, 1992).

The dynamic systems have consistently changing conditions in contrast to static systems; a tractor is still sensitive to initial conditions. These tractors are complicated, start and stay close to each other and their behavior is like "a set of wooden Russian dolls each containing a smaller replica of itself within" the tracks that started close to each other becomes quickly splayed as if the space within the tractor is being prolonged though these tracks cannot be splayed forever, they will be fold and mingles which make the system very sensitive to initial conditions and during time new information will substitute the initial one making predictability very short-lived.

Chaos theory has had a powerful impact during the last 30 years. Although it was initiated through observing weather patterns, it has been applied to a variety of other fields including mathematics, geology, engineering, and politics. It has many applications in the humanitarian and social sciences. Chaos theory is applicable in the sense of similarity between postmodernism and chaos which is embodied by their rejection of the logical systems that preceded them, Newtonian science and modernism. Hayles in her collected volume illustrates that chaos theory has promoted a relation with the contemporary development in literature and literary criticism, especially post-structuralism and deconstruction (qtd in Bishop, 2011). Many works show that both chaos and literary theories are involved in understanding the mutable interpretation in systems or texts and queries the traditional viewpoint that counterweights chaos with disorder. In chaos theory, iteration involves the ongoing reabsorption or enclosing of what has come before, but it doesn't mean only repetition. However it indicates the use of previous forms and then changes them through deletion and accretion. It leads to more deep understanding and evaluating the complex ideas that underlying some works of literature that might face that reader.

In chaos theory, the order has been broken in and the result is chaos. But within chaos there is order. In fact there are different opinions on the relevance between order and chaos. Some say that order is inherent in chaos while others argue that chaos arises from order. On the other hand some others state that order arises from chaos. Leaving aside these controversies and patterns, what is obvious is that chaos and order are co-reliant. They are invigorated and rainforest by the artistic imagination. (Navario & Arrieta, 2010)

Concerning free will and determinism in chaotic behavior, it is stated that determinism is the thesis that every event is the effect of an antecedent cause, knowing also as a thesis of universal efficient causality. This indicates that all human actions are governed by those causal laws. Some scientists say that all the causes linked to each other in one immense chain were no independent or isolated power. Determinism denies the free ability to act since those causal laws determine that what has happened had to happen and consequently our belief that we could have changed anything is false and has no meaning for freedom. This belief is supported by stating that human-machine is totally determined by heredity and environment and the absence of our freedom in taking any action needs to free our responsibility for that action, however without responsibility there is no morality (Navario & Arrieta, 2010). The work of Newton forms the scientific basis of modern determinism. His works strengthen determinism since he adopts the ultimate truth and his mathematical and physical laws deny the existence of free will and strictly uphold the efficient causality and convict that the behavior of bodies is predictable as long as the computation required is highly precise and the data are fairly accurate. Through Newtonian determinism our behavior is understandable and predictable within the limits of purely physical terms. Psychologically this leads us to the purpose behind studying and understanding people's behavior so the predictability to change their behavior would be possible. (Barth J., n.d.)

Chaos is used to describe the deterministic system as it works as a double-edged sword and it is way of backing the two philosophical theories determinism and free will. Errors have feedback that the small errors in initial conditions cause chaotic systems to act unpredictably. This hypersensitivity to errors in chaotic systems leads to a hopeless prediction, since any predictability is essential to determinism. Chaos supports the standard of any predictability concerning determinism and thus our unpredictable behavior can be modeled in a deterministic way. At the same time, chaos supports the libertarian through presenting the essential unpredictability which is fundamental for a free will to behave without revelation (Barth J., n.d.). The question of a free will and determinism is built upon the debate on how to make sense of a human free will choice and action in the realm of ordered causes. Given the above it is no surprise that chaotic behavior can be noticed in a lot of different phenomena whether these are chemical, physical, electric, and meteorological as well as social sciences. It approves that chaos is a more universal phenomenon than we could expect. When chaos is significant in our understanding of behavior, it comes to be easier for us to form our predictable behavior within the frame of determinism leaving no space for a free will. (Libet, 1985)

On the other hand chaos can support the libertarian argument through "implying that initial measurements are always uncertain and chaos ensures that the uncertainties will quickly overwhelm the ability to make a prediction". Chaos could make brain states which have an impact on the determined behavior, thus the path to free will is widely opened. Dr Libet indicates that "although our initiatives to act begin unconsciously, we do have the ability to block these initiatives" (Libet, 1985). Within the social system, even when the laws that govern and guide our behaviour are identified, small errors and data cause unpredictability. Thus theoretically it is impossible to predict our behavior leaving possible tendencies to be set apart. Chaos plays an important role in the way that information is transmitted, stored, recalled by the brain and the brain uses chaos to generate insight and creativity besides it is necessary in the determination of our consciousness. It means that chaos affects even the brain states which determine our actions. (Justin, 2019)

Therefore, in the context of human behavior, chaos theory assumes that small changes or disturbances in initial conditions can lead to dramatically important and unpredictable changes over time. These changes can alter fixed patterns and cause behavior to rearrange in surprising ways. This illustrates that even minor change in a person's mindset, environment, or circumstances can lead to far-reaching effects on their behavior. For example, a chance encounter or a single decision can set off a chain of events that significantly alters the trajectory of a person's life. Furthermore, it emphasizes the presence of nonlinear relationships, where small events can cause disproportionately large and nonlinear effects. In human behavior, this suggests that a minor trigger or stimulus can arise a response that is out of proportion to the original cause, for instance, a sometimes an insignificant comment can lead to a major life decision and radical alteration in the personality of the persons. The butterfly effect proposes that a small change in one part of a complex system can have large effects elsewhere. In the context of human behavior, this shows how an unnoticed action or decision made by one person can have tremendous effects can affect the opinions and behaviors of millions of people like in social media, hashtags and some comments in particular region can be trend and spread widely over the world drawing the attention of people to seek change.

Chaos theory also plays a role in recognizing the phenomenon of selforganization, in which complex systems spontaneously rearrange themselves into new structures and patterns. In the context of human behavior, this showcases how new behaviors, social norms, or collective actions can emerge from the chaotic situations. People may adapt and find new ways to respond effectively to the rapidly changing circumstances. It is important to note that chaos theory emphasizes human potential for unpredictable and complex behavior arising from seemingly small and random events or conditions.

#### 1.2 Victor's chaotic behaviors in Palahniuk's Choke

Choke revolves around the chaotic life of Victor who suffers really an odd upbringing. From the very beginning the novel has deviated from the traditional opening. The narrator says" if you are going to read this, don't bother" this confuses the reader. He shows his self-hatred character when he recalls his childhood and this long suffering childhood works as the initial conditions that create his chaotic world ever since. He calls his younger copy an idiot to leave an impression that his psychological problems are rooted in his childhood which made him a damaged person who lacks self-confidence. The personality of the narrator himself "Victor" reveals that he is stricken by disorder, dissipation, jumble and chaos that is shown obviously in the way he behaves. Victor is stuck between moral choices and those immoral ones, between being a good son who has devoted his life to help his mother getting better and between his unconsciousness that evokes unpleasant memories which reminds him that she was behind all his troubles. The reader is confused whether Victor's actions should be admired or abused. Since chaos exists and the physical processes that determine our behavior, the typical way of introducing chaos is through distorting the personality of the narrator. Thus the cognitive behavior of Victor is necessary to detect his individual image which is contemplated in his words and actions. Victor is a borderline prototype character, his persistent oscillation between a focus on himself and his internal tales and the focus on the behaviors, intentions and feelings of others. (Rasmussen, 2005)

Victor's sense of identity is missing when he is not connected with a specific person or group because of his powerless feeling so he needs others. As a result his behavior is marked by constant tension and anxiety. Therefore, one can describe his behavior as unpredictable, pessimistic, envious and resentful. He feels pity and viciousness. The childhood of Victor Mancini was far from happiness because of his unfit mother. He was in jail many times for committing crimes. Many families had adopted him though his mother constantly kidnapped him from his adopters, struggling to find his true path, affection of people, attention and love; he chooses to be a sex addict. His looking for money and warm embrace made him chock on his food in those expensive restaurants. "After I was born, my mum just stayed put in the States. Not in the house. She didn't live here until her last release, after the school bus theft charge. Auto theft and kidnapping" (Palahniuk, 2008, p37).

What makes it worse that Victor knows all about his mother's personality "it's a safe bet they don't know about her obscenity conviction, her attempted murder conviction, her reckless enlargement, her animal harassment" (Palahniuk, 2008, p37). His mother has never been a passionate, caring one. This poor loving childhood which he constantly recalls its frustrated incidents was the initial condition that affects his life unconsciously. It was that pile of unhappy and painful moments that he lived accompanied by his careless mother that leads him to be sex addict. His addiction doesn't arise from his love for those women "For the next I don't know how long, I've got no problems in the world. No mother. No medical bills. No museum job. No jerk-off best friend. Nothing. I feel nothing. just for these minutes. I don't feel lonely" (Palahniuk, 2008, p10). His behavior as a sex addict is interpreted through his seeking for attention by sex and getting away from his loneliness. The sense of chaos and sex addiction is constructed in complicated drawn images. He reflects his chaotic sense every time he had sexual relationship as if he wants to revenge from every woman he sees, he had that Odiepal unconscious feelings. He says that a very boy raised by his mother is married to her and envy other woman is just a mistress.

The way he made himself choked on foods in expensive restaurants so that someone of those rich customers saved him from death and the way that his saver feels pity about him to the point that he keeps sending money, cards and letters what the cony means that Victor has chosen to pay for his mother's hospital bills. She stays in a hospital because she has Alzheimer and turns out to be forgetful. Considering the way that his mother has brought him up, Victor's behavior towards his mother is unpredictable. He doesn't like her but he feels that he has to support her. Victor couldn't forget the accident when he was saved by a man when he was choking on his food. He couldn't forget the care and affection that people have shown which contrasts sharply with the neglectance of his mother. "You know the old phrase; those who don't remember the past are condemned to repeat it? well, I think those who remember their past are even worse off". (Palahniuk, 2008, p 99)

Though the story exists in the present but many flashes to certain moments in Victor's past especially when his mum was doing strange things and teaching him odd teachings.

Those flashes provide insight to Victor's current behaviors. Once his mother made him send half naked in the snow when he was a child "Don't look. Don't move a muscle or you'll ruin all my work. Control yourself, dammit. Holder still or you'll ruin all my work" (Palahniuk, 2008, p. 3). Letting him freeze in the snow without caring about him proves her harsh treatment. "This will be worth a little suffering, so hold still and don't make me spank you" When Victor grows up, he was looking for love in various ways, choking on purpose for compassion "Somebody saves your life and they'll love you forever, it is as if now you're their child" (Palahniuk, 2008, p. 24). The warm family atmosphere that provides security and stability is what Victor sincerely misses.

Despite the fact that he lived his miserable childhood due to his mother, he behaves as a good boy and takes care of her. He feels that taking care of his mother is his own responsibility "Victor is so busy because he is out every night, literally killing himself to pay her bills for constant care. That is grand each month just to break even. Maybe that's why Victor left school. I say, just for the sake of argument, that maybe Victor's doing his frigging best" (Palahniuk, 2008, p 22) His constant visit to see his mother in the hospital even though she is unable to recognize him, he keeps asking the doctor if she is getting any better. "If there's anything you can do to save her and you don't you are killing her with neglect". (Palahniuk, 2008, p 55)

He always blames his mother's false bringing up for his issues "all my life I've been less my mother's Child than her hostage. The subject of her social and political experiments. Her own private lab rat" (Palahniuk, 2008, p 56). His addiction was a kind of self-destruction, a kind of coping mechanism and rejection of his traumatic reality. Victor is changeable all the time. He lets the others define who he is, and thus he attempts to be what the others want him to be "I just want one person I can rescue; I want one person who needs me. Who can't live without me" (Palahniuk, 2008, p 56). He likes the idea that he might be a nice guy and not repeat his mistakes "from now on, I want to try and be a better person. Choking in restaurants, fooling people, I'm not going to do that kind of thing anymore, Sleeping around, Causal sex, that kind of thing" (Palahniuk, 2008, p 113)

In spite of the chaotic world of Victor, his moving to the forth step of the sex addict program, proves that he is getting better. Victor tries to change his life and makes a conscious choice to prove that he is not driven by instinct or impulse but seeks to create meaning in life. He refuses sex with his x-partner Nicol to control his life and behavior. All the experience eventually made him figure out the nice guy within himself. He succeeds in managing his life and gets this happiness "for the first time in longer than I can remember, I feel peaceful. Not happy. Not sad. Not anxious. Not horny. I'm simplifying myself. Somewhere balanced in the perfect middle between happiness and sadness" (Palahniuk, 2008, p133).

Victor suffered from a chaotic system. He confronts chaos and reflects what is inside him. He suffers from the unconsciousness of the psychedelic vision of life. From the beginning it was clear that chaos springs from his ability to understand his absurd situation. Victor seeks a form of order, temporary it may be because chaos hover over his life. The present intermingles with the past chaotically and violates the logical order. A choke is simply the loss of a thing which turns from an essential necessity to meaningless contingency (Aman, 2007). The novel is filled with chaotic and disrupted atmosphere; even the narrative structure of "*Choke*" is nonlinear, jumping back and forth between different periods in Victor's life. This nonlinear storytelling creates an element of chaos to the narrative as the events are not presented in a straightforward, chronological manner. Through this nonlinear revelation, the reader gains a deeper understanding of the complex dynamics between Victor and his mother. The event serves as a turning point in their relationship, shedding light on the origins of Victor's emotional struggles and his desperate desire for connection.

His inability to make love to Dr. Marshall whom he is in love with, shades light on his disordered life and stresses his sexually distorted ego. The chaotic atmosphere she imposed on him made Victor crave for attaining stability and order, leading him to bid sexual relationship with Dr. Marshall though it ends in failure. This fragile stability is often associated with chaos, as chaos theory often emphasizes the fragility of stable systems. He constantly struggles to maintain relationships and try to find a delicate balance that is continually disrupted by the unstable condition of his personal life.

However, provoked by his sense of an increasing chaos, he hurls himself into another relation with Nicol, whom he shows his divided aim with. Choke is an invisible act of chaos, his mother dies and he is utterly free. Even when it is deterministic, the future behavior follows a unique evolution. His struggle to find his identity is over because he realizes that he has the decision to decide to choose to be a good person or a bad one, no more be satisfying to others but be satisfying to himself. "We can spend our lives letting the world tell us who we are. Sane or insane. Saints or sex addicts. Heroes or victims. Letting history tell us how good or bad we are. Letting our past decide our future. Or we can decide for ourselves. And maybe it's our job to invent something better" (Palahniuk, 2008, p133). It is no more "a stupid true-life story about nobody you'd want to meet." Instead it is a story about someone who has found his true self by seeking an established order (Tuğrul Mart, 2013). The novel is filled with unexpected and chaotic events that disrupt Victor's life. From his encounters with his mother, to his struggle with his sexual addiction, to the schemes he concocts, the story is characterized by unpredictability and the consequences of random actions. All these unpredictable and disrupted incidents contribute to the reordering the chaotic life of Victor generating new person with new identity.

#### Conclusion

This study analyzes the chaotic behavior of the main character Victor Mancini in the novel *Choke* through the lens of chaos theory. When it comes to applying the concept of chaos to "*Choke*," it is noticed that chaos theory deals with complex systems that exhibit sensitive dependence on initial conditions. While the novel may not directly explore chaos theory, it does contain elements of chaos and unpredictability in its narrative and themes. Victor was a victim of his abnormal childhood due to his abnormal mother who acts as the initial conditions that affects his character and made him dwell in chaos. It was only when his mother died and his love passion towards Dr. Marshall flourished, he got the order back

to his life. It has been suggested that even our consciousness could be the result of these chaotic processes. Furthermore, chaos shapes our personality and explains why our behavior may be unpredictable while our actions are ordered enough to define our individual traits. Thus chaos has a hand in determining Victor's actions. It could also enable the brain to consider the consequences of certain actions, correct those patterns and even provide us with the consciousness necessary for decision making. In this sense Victor owned the freedom to act and no one can predict or control his actions. An important characteristic of Victor in this novel is what happened in childhood. Chaos springs from his inability to find satisfactory situations in his life. He knows that his achievement is contemporary and untrue but free will is part of human nature and it is his faculty to find out a way to choose a blissful life. In "Choke," Victor's actions and choices have farreaching consequences that he cannot fully anticipate. His seemingly insignificant decisions have a ripple effect on his life and the lives of those around him, leading to unexpected outcomes. This echoes exactly the concept of butterfly which assumes that small changes in initial conditions can result in significant and unpredictable outcomes.

## References

- Aman, Yasser (2007). Chaos Theory and Literature from an Existentialist Perspective. *CLC Comparative Literature and Culture*. September.
- Bishop, Robert C (2011). Chaos, Indeterminism, and Free Will. Illinois.
- Biswas, Hena Rani, & Md.Maruf Hasan (2018). Chaos theory and its Applications in our Real Life. Barishal University Journal Part 1,5 (1&2), p. 123-140.
- Justin, Mibaile (2019). Chaos in Human Brain Phase Transition. *Research Advances in Chaos Theory*. Ed. Paul Bracken. https://www.intechopen.com/chapters/68375.
- Libet, Benjamin(1985). "Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action." The Behavioral and Brain Sciences 8, 529-567.
- Mart Çağrı Tuğrul (2013). "Choke" Chuck Palahniuk Book Review.
- Advances in Literary Study 01(02):16-18
  - DOI:10.4236/als.2013.12005
- Navario, Jose & Carlos Arrieta (2010). Chaos in human behavior. *The Spanish journal of psychology* .Vol.13,No.1. pp 244-256.
- Palahniuk, C. (2008). Choke. New York, Anchor.
- Rasmussen, P. A. (2005). Personality-guided: Cognitive Behavioral Therapy. *American Psychological Association*.
- Till, Gregory J., (1992). A chaotic approach to free will and determinism. *Presidential Scholars Theses* (1990 – 2006). 147.

https://bit.ly/2UWmDM2.

https://bit.ly/3ycIBJ4.

https://journals.sagepub.com/doi/full/10.1177/2158244017725130.