

AN APPROACH TO TRACY CHEVALIER'S *THE VIRGIN BLUE* VIA POINCARÉ'S CHAOS THEORY

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Abstract: The paper expands upon Tracy Chevalier's The Virgin Blue approached via Chaos Theory. Poincaré's theory provides multiple interpretative grids for literary masterpieces. Iteration, namely the proces of continuously reabsorbing what has already happened, recursion, bifurcation, autocorrelation and standardization appear throughout the novel, offering a different perspective and a distinctive interpretation of the narrative as well as the characters' portrayal. Consequently, the paper stands proof to the fact that a mathematical theory may be utilized for interpreting a literary creation.

Keywords: mystery, recursion, iteration, autocorrelation

Intrigue, mystery, historical settings, uncertainty, witchcraft and romance are elements that Tracy Chevalier exposes in her first novel, entitled *The Virgin Blue*. The parallel narrative brings into bold relief the two female protagonists' struggles concordantly to the time period they live in. Ella Turner's unceasing attempt to ascertain her ancestry as well as Isabelle du Moulin's struggles in life serve as the starting point in our analysis of the Chevalier's masterpiece via Poincaré's Chaos Theory.

This postmodern literary masterpiece debuts with a chapter dedicated to Isabelle du Moulin's story during the Renaissance and Reformation period. The author reveals a young girl's portrayal in connection to a religious scene, namely the arrival of the statue of Virgin Mary and the Child. Isabelle du Moulin is first introduced to the readers as she admires Jean Tournier's painting of the niche. Furthermore, one significant detail concerning Isabelle's life and predestination, that is, the color of her hair is also insisted upon. Hence, the episode: "When its rays reached her, they touched her hair with a halo of cooper that remained even when the sun had gone" (Chevalier, 2006: 1) represents a value which has a connection to another value: "From that they she was called La Rousse after the Virgin Mary" (Chevalier, 2006: 1). According to Williams, autocorrelation implies that "a time series sometimes repeats patterns or has other properties whereby earlier values have some relation to later values" (Williams, 1999: 86). The readers' first encounter with the female protagonist represents, thus, an instance of autocorrelation.

In the 16th century, the society surpassed a religious revolution and the new Protestantism stood as the cause of Isabelle's nickname loss of fondness. A sudden change occurred in the protagonist's life, a change which would influence her existence and her destiny: "In his first sermon, in woods out of sight of the village priest, he told them that the Virgin was barring their way to the truth" (Chevalier, 2006: 1). The bifurcation, namely "a sudden qualitative change in a system's behavior, occurring at a fixed value of a control parameter" (Williams, 1999: 146) by reason of Monsieur

Marcel's preach, would cause Isabelle's ungrateful fate. Monsieur Marcel, a preacher of Calvin's words utters that: "-La Rousse has been defiled by the statues, the candles, the trinkets. She is contaminated! he proclaimed. She stands between you and God!" (Chevalier, 2006: 1).

The repercussion of his words would bring Isabelle into the audience's attention: "The villagers turned to stare at Isabelle" (Chevalier, 2006: 1). The young girl returns home, accompanied by her mother and her brothers although the autocorrelation between her hair and the villagers' new belief is still present: "Eventually, bold with curiosity, a boy ran up and grabbed a handful of Isabelle's hair" (Chevalier, 2006: 2). The boy's curiosity is evidence of Isabelle's hair connection to sin: "-Did you hear him, La Rousse? You're dirty! he shouted" (Chevalier, 2006: 2). As she continuously reabsorbs what has already happened, as an instance of iteration, Isabelle begins to cover her head, in order not to be perceived as a sinful person: "The next day Isabelle began wearing a headcloth, every chestnut strand wound out of sight, long before other girls her age" (Chevalier, 2006: 2).

The narrative advances with the episode where Marie, Isabelle's sister, gives birth to her child. The setting predicts the tragedy which would happen: "It was a bitterly cold night, a strong wind blowing snow into drifts against the house, the stone walls, the clumps of dead rye" (Chevalier, 2006: 3). While standing alongside her mother, Isabelle recollects her previous assistance of women giving birth, although she recollects the accompaniment of other women who were responsible with singing and storytelling. Recursion, "an existing replica of an occasion or of an act" (Slethaug, 2000: 98), is illustrated in this episode: "Isabelle had helped her mother at birthing before, but always in the presence of other women visiting to sing and tell stories. Now the cold kept them away and she and Maman were alone." (Chevalier, 2006: 3)

Isabelle abets her sister in birthing, resorting to prayers, despite her continuous reabsorbing of Monsieur Marcel's behest. The protagonist prays to the Virgin, despite the iteration of Monsieur Marcel's words:

"She prayed for her, silently appealing to the Virgin and to Saint Margaret to protect her sister, all the while feeling guilty: Monsieur Marcel had told them the Virgin and all the saints were powerless and should not be called upon. None of his words comforted her now. Only the old prayers made sense" (Chevalier, 2006: 3)

The process of birthing continues inefficacious, as the baby's head appears to have a larger size than it should. Maman's words: "The head is too big, Maman pronounced finally. We have to cut" (Chevalier, 2006: 3) encounters refusal in her girls' responses: "Non, Maman, Marie and Isabelle whispered in unison" (Chevalier, 2006: 3). As the eruption of a volcano, the events proceeding the replica, come as chaos which occurs at discrete periods of time, at separate intervals: "In desperation she began to push again, weeping and gasping, Isabelle heard the sound of flesh tearing; Marie shrieked before going limp and grey" (Chevalier, 2006: 3). Chaos occurs with the loss of mother and child: "They buried mother and child in a sunny spot where Marie had liked

to sit when it was warm. The cypress tree was planted over her heart” (Chevalier, 2006: 4).

Later in the story, the narrator provides an episode where Isabelle and her mother assist another birthing, which is successful, ceasing the line of deaths: “Maman and Isabelle had been at a birthing at Felg erolles. Mother and baby had both lived, breaking a long string of deaths that had begun with Marie and her baby.” (Chevalier, 2006: 4) The successful birthing that Isabelle and her mother assisted represents the ceasing of the chaotic period in the village.

Isabelle and her family’s story continues with an episode occurring while the protagonist and her mother return home from the Felg erolles. On their voyage, the two encounter a wolf which attacks Isabelle’s mother, biting her arm. As the narrator utters, Maman would have preferred to let the wolf “rip out her throat quickly and mercifully” (Chevalier, 2006: 5) instead of suffering for a long period of time. Chaos occurs at continuous intervals of time, as Maman’s health condition weakens as days passed:

“Fever came fast, and so furious that Isabelle prayed death would come as swiftly to relieve her. But Maman fought, sweating and shouting in her delirium, for four days. On the last day, when the priest from Le Pont de Montvert arrived to perform the last rites, Isabelle held a broom across the doorway and spat at him until he left” (Chevalier, 2006: 5)

After twenty days of sorrow and pain, Isabelle’s mother gives her final breath and the chaos which occurred continuously ceases.

The narrative proceeds with the priest’s leaving and the villagers listening to the words preached by Monsieur Marcel. Monsieur Marcel iterates the sinful belief that statues and saints do not possess any power thus, the place must be cleansed of sin: “This place of worship has been the scene of corruption. It is in safe hands now. It is in your hands. He gestured before him as if he were sowing seed” (Chevalier, 2006: 6). Consequently, he impels the audience to recuperate the place from sinful rituals:

“-It must be cleansed, he continued. Cleansed of its sin, of these idols. He waved a hand at the building behind him. Isabelle stared up at the Virgin, the blue behind the statue faded but with power still to move her. She had already touched her forehead and her chest before she realized what she was doing and managed to stop without completing the cross” (Chevalier, 2006: 7)

A piece of glass, coming from the window which was previously broken, gets into a young boy’s hands and produced an injury: “In the lull a boy ran over and picked up a shard of glass then howled and threw it down” (Chevalier, 2006: 8). The boy’s replica: “It bit me!” (Chevalier, 2006: 8) was correlated to the devil, in his mother’s opinion, providing hence an instance of autocorrelation: “The devil! she screamed. It was the devil!” (Chevalier, 2006: 8).

Etienne Tournier, on the other hand, concatenates the event to Isabelle, the protagonist of the novel, delivering thus another evidence of autocorrelation in the novel: “Etienne Tournier, hair like burnt hay, stepped forward with a long rake. He

glanced back at his older brother, Jacques, who nodded. Etienne looked up at the statue and called loudly: -La Rousse!" (Chevalier, 2006: 8). Etienne hands the rake to Isabelle who was urged by the crowd to destroy the statue: "Do it, La Rousse! someone shouted. Do it!" (Chevalier, 2006: 8)

Emboldened by the audience, Isabelle resentfully proceeds at the demolition of the statue, despite her belief: "Forgive me, she whispered" (Chevalier, 2006: 9). The flip of a butterfly's wings, in the present scene, is represented by the moment when Isabelle takes possession of the rake and the butterfly effect occurs when the protagonist commenced to hit the statue: "The shouting became harsher as she began to push harder, tears pricking her eyes" (Chevalier, 2006: 9). The collapse of the statue represents the instauration of chaos in Isabelle's destiny:

"The statue began to rock, the faceless woman rocking the child in her arms, Then it pitched forward and fell, the Virgin's head hitting the ground first and shattering, the body thumping after. In the impact of the fall the Child was split from his mother and lay on the ground gazing upward. Isabelle dropped the rake and covered her face with her hands." (Chevalier, 2006: 9)

The crowd acclaimed her attainment and Etienne considered himself triumphant: "There were loud cheers and whistles and the crowd surged forward to surround the broken statue" (Chevalier, 2006: 9). The narrative continues with Isabelle's brothers being persuaded to go to war. Monsieur Marcel reassures Isabelle that her brothers' action were God's will and that: "God will smile upon you" (Chevalier, 2006: 10). The connection between the religious revolution and Isabelle's brothers departure to go to war are instance of autocorrelation in the narrative, as Monsieur Marcel attempts to persuade Isabelle's brothers of them being selected by God to fight: "He has chosen you for this war. Fighting for God, your religion, your freedom. You will return men of courage and strength" (Chevalier, 2006: 10).

Later on, the narrator brings to the readers' attention the story between Isabelle and Etienne. The beginning of their affair represents an instance of autocorrelation, as Etienne desires to kiss her as she utters that: "the communion of the Pentecost is still in my mouth, she thought, and this is the Sin" (Chevalier, 2006: 11).

The events preceding the destruction of the statue feature the new belief preached by Monsieur Marcel. The Bible is replaced by one brought from Lyons and the Bible possessed by the Tourniers was no longer encountered in the church. Isabelle is intrigued by the manner how words from the Bible are understood by Monsieur Marcel. It is the circumstance when Etienne engages himself into teaching Isabelle how to write her name on condition that she pays for it. Recursion arises when the narrator presents Isabelle's insights: "It was the Sin again: chestnut leaves crackling in her ears, fear and pain, but also the fierce excitement of feeling the ground under her, the weight of his body on her" (Chevalier, 2006: 12).

Etienne fulfills his promise and brings Isabelle up the mountain where he teaches her how to write the first two letters of his name, arguing that whoever writes the name, owns it: "You wrote it, so it is your name. You don't know that? Whoever writes it, it is

theirs" (Chevalier, 2006: 13). The practice happens as chaos at continuous intervals: "continuous phenomena might be measured continuously, for instance by trace of a pen on a slowly moving strip of paper" (Williams, 1999: 20). Etienne's actions and Isabelle's desire are chaotic, as: "She could feel the hard growth at the base of his stomach and a flicker of fearful desire raced through her" (Chevalier, 2006: 13). Isabelle ultimately pays the price Etienne asks for teaching her how to write: "He pushed her over the boulder, stood behind her, and bulled her skirt up and his breeches down. He parted her legs with his knees and with his hand held her apart so that he could enter suddenly, with a quick thrust" (Chevalier, 2006: 13).

Later, Etienne welcomes Isabelle into his parents' house. His gesture: "he matched her step and put his hands on her hips" (Chevalier, 2006: 15) receives a resisting response: "not in your parents' house" (Chevalier, 2006: 15) providing an instance of autocorrelation between his ceasing and the words that Isabelle pronounces: "the mention of his mother was enough to tame him" (Chevalier, 2006: 15).

Social status comes into readers' attention as Isabelle and Etienne bear a conversation about their marriage. Isabelle considers that Etienne eludes the subject since their parents may not approve due to the fact that Isabelle's social status is lower on the hierarchy, therefore providing an instance for autocorrelation between her social status and his parents' disapproval:

"Of course they don't want us to marry, Isabelle thought. My family is poor, we have nothing, but they are rich, they have a Bible. A horse, they can write. They marry their cousins, they are friends with Monsieur Marcel. Jean Torunier is the Duc l'Aigle's syndic, collecting tax from us. They would never accept as their daug these thoughts in hter a girl they call La Rousse." (Chevalier, 2006: 15)

Bearing these thoughts in mind, Isabelle offers as suggestion their staying at her father's house, but Etienne does not accept, even though it may imply that they would live with his family, without their consent. Etienne continues the conversation by iterating several beliefs and events which occurred in Isabelle's life. The first iteration concerns her belief in Virgin Mary: "But you love the Virgin, yes?" (Chevalier: 2006: 16) and the other two instances of iteration, generated by Etienne's implications, are related to her mother: "And your mother was a witch" (Chevalier, 2006: 16). Furthermore, he utters that: "That wolf that bit your mother, he was sent by the devil to bring her to him. And all those babies dying" (Chevalier, 2006: 16), providing an instance of autocorrelation as well, between Isabelle's mother and the death of several babies.

Not long after their conversation, Isabelle announces Etienne that she is carrying his child. The correlation between sin and their child provides another instance of autocorrelation: "It was you who wanted the Sin, Etienne" (Chevalier, 2006: 18). The first person who grows aware of Isabelle and Etienne's baby is Isabelle's father who sadly receives: "You have all left me" (Chevalier, 2006: 19). Sequentially, Isabelle returns to Etienne's house and she encounters a wolf on her way. Recursion occurs when Isabelle seeks help in her prays, finding herself in difficult situations: "Sainte Verge, aide-moi, she prayed automatically" (Chevalier, 2006: 19). When she reached the Tourniers'

house, Isabelle could sense no more fear of Etienne's mother. The protagonists' words are instances of autocorrelation, as she connects the wolf with her dead mother: "Thank you, Maman, she said softly. I won't forget" (Chevalier, 2006: 20).

Isabelle arrives at Etienne's house and encounters the entire family. Jean Tournier asks her what happened and Etienne goes by her side, announcing the family that they are going to have a child. The first thought that comes into Hannah's mind is that Isabelle's child is not Etienne's. Despite Isabelle's affirmative answer, Hannah firmly responds that the child is not Etienne's. This reaction serves as a rejection to Isabelle, who is sent to wait outside, accompanied by Susanne.

The narrator provides an instance of iteration, as he brings to the readers' attention the change in colour of Isabelle's hair:

"The girls sat side by side on the door bench. They had seen little of each other since they were children. Many years ago, even before Isabelle's hair turned red, Susanne had played with Marie, helping with the haying, the goats, splashing in the river." (Chevalier, 2006: 21)

The friendship between Marie and Susanne stands proof of the fact that Jean and Hannah Tournier would not bend the friendship between their daughter and a peasant girl despite the difference between their social statuses. The marriage between Isabelle and Etienne, however, is not welcomed by the two parents and the announcement of Isabelle's pregnancy is surprising and difficult to be admitted and accepted by the Tourniers.

Eventually, Isabelle and Etienne have three children, one girl and two boys: Petit Jean, Jacob and Marie. The birth of Isabelle's children is described in vivid colours. Hence, the author provides instances of autocorrelation between the color and the child's personality: "Petit Jean was born in blood and was a fearless child" (Chevalier, 2006: 22) as well as: "Jacob was born blue. He was a quiet child: even when Hannah smacked his back to start his breath he did not scream" (Chevalier, 2006: 22).

Additionally, Isabelle's daughter provides both an instance of autocorrelation as well as one of recursion. The connection between the color of the child's birth and the child's character stands proof of autocorrelation: "Marie was born in a flood liquid, her eyes open. She was a hopeful child" (Chevalier, 2006: 22). Recursion occurs when an act, namely Isabelle's prayers have a replica. During her pregnancy, Isabelle prays to Virgin Mary to have a daughter, promising that she would name the girl after her and her sister, regardless whom she has to fight for the name.

The parallel narrative brings before the readers Ella Turner's story and her effort to discover her ancestry. The second chapter presents the narrative from the protagonist's point of view, whereas the first chapter, focused on Isabelle's story, is presented from an omniscient narrator's view point. Ella and Isabelle's names imply a liaison between the two characters, as Ella Turner's story betides decades after Isabelle's story.

Ella Turner's story line proceeds with her and her husband's decision to move to France, hence a bifurcation in the protagonist's life is presented at the beginning of the

narrative: "When Rick and I moved to France, I figured my life would change a little. I just didn't know how" (Chevalier, 2006: 23). Bifurcation, as Williams presents it, represent "a sudden qualitative change in a system's behavior, occurring at a fixed value of a control parameter" (Williams, 1999: 146).

The protagonist narrates her contemplation as they travel along the small town destined to cease her search. Ella admits that she rejected several towns as she "was looking for a place that would sing to me, that would tell me my search was over" (Chevalier, 2006: 23). Lisle-sur-Tan is depicted as a utopian town:

"I parked next to the café and began to walk; by the time I reached the center of town I knew we would live there. It was a bastide, a fortified town preserved from the Middle Ages; when there were invasions in the medieval times the villagers would gather in the market square and close off its entrances. I stood in the middle of the square next to a fountain with lavender bushes planted around it and felt contained and content." (Chevalier, 2006: 24)

Ella considers that the wondrous setting would be what she necessitates in order to be happy. The connection between the utopian town and her happiness provides another instance of autocorrelation: "This is what I need, I thought. Seeing this every day will make me happy" (Chevalier, 2006: 24). The liaison between her blissfulness and Lisle-sur-Tan is strengthened by the words uttered by our protagonist in her depiction: "felt contained and content" (Chevalier, 2006: 24).

Ensuing, Ella narrates her first visit paid to a boulangerie. A classic French bakery and a traditional French baker would demonstrate the cultural differences between Ella and a French person, as she encounters language barriers as well as different customs in the new country selected to represent her home: "I opened my mouth: nothing came out. I swallowed. She stared at me and said, "Oui, madame?" in exactly the same tone she'd first used, as if the last few awkward seconds hadn't occurred" (Chevalier, 2006: 25). Furthermore, Ella dissatisfies the French tradition as she hands the money to the baker: "Mutely I handed her the money, then realized when she placed my change on a small tray on the counter that I should have put the money there rather than directly into her hand" (Chevalier, 2006: 25).

Instantly, Ella feels alienated and the impression of alienation is connected to the cultural differences encountered during that visit. An instance of autocorrelation is presented as Ella's alienation. It is connected to the French woman's attitude towards her, a foreigner with different background and customs: "She made me feel lost the very moment I thought I'd found home" (Chevalier, 2006: 25).

Furthermore, the place selected by Ella to live is related to her visit to the bakery, more precisely to her interaction with the French woman, as she attempts to rescue the situation stating that they live near by: "Je- nous—nous habitons près d'ici- là-bas" (Chevalier, 2006: 26). Autocorrelation occurs when Ella decides to live in the proximity of the bakery and confront the baker daily: "So don't lie, then. Live here. Confront Madame every day over the croissants, I muttered in reply." (Chevalier, 2006: 26).

Days are passing by for the couple, in their new town and the new house, while Ella is making decorative changes to transform their house into a home: "Welcome to France, I said. Welcome home" (Chevalier, 2006: 28). One day she recollects her father's repeated instructions to write to her cousin who lives in Moutier. Recursion occurs as an act, namely her father's advice to write to her cousin has multiple replicas: "When my father found out Rick and I were going to live in France he encouraged me to write to a cousin several time removed who lived in Moutier, a small town in northwest Switzerland" (Chevalier, 2006: 28).

As Ella and her father's discussion expands, her father suggests her to question her cousin about the history of their family. The flip of a butterfly's wings occurs once the father suggests it would be beneficial for her to discover her ancestry. The indication stands as a starting point for the butterfly effect and Ella's destiny would oscillate as she takes the first step in researching her ancestry: "Why not? Listen, as an opening you could ask him about the family history, where we come from, what our family did. Use some of that time you'll have on your hands" (Chevalier, 2006: 28).

Alongside this acquired knowledge, her father was also unquiet due to Ella's lack of occupation. The protagonist shares her contemplation as she recollects her father's feelings of uncertainty: "I wasn't used to having free time- I'd always been busy either training or working long hours" (Chevalier, 2006: 28). Consequently, Ella elaborates three projects, one of the them being represented by her French tutoring lessons. Madame Sentier considers that a person who is not fluent in French pronunciation would be reckoned as a foreigner and French people would not treat foreigners with seriousness. Hence, there occurs an instance of autocorrelation between nationality and French people's treatment: "'If you don't pronounce the words well, no one will understand what you say", she declared. "Moreover, they will know that you are a foreign and will not listen to you. The French are like that.'" (2006: 29).

Ella tells Madame Santier the story of her Swiss relatives and encourages her to write to her cousin, as French ancestry, in her opinion, would provide Ella with French language acquisition. Therefore, Madame Snatier provides autocorrelation between Ella's origins and the French language acquisition:

"She was delighted to find out that I had Swiss relations; it was she who made me sit down and write. "They may have been from France originally, you know," she said. "It would be good for you to find out about your French ancestors. You will feel more connected to this country and its people. Then it will not be so hard to think in French.'" (Chevalier, 2006: 30)

The protagonist takes the first step in a process of acquiring education to become a midwife, once her French lessons prove to be useful for her. Madame Santier encourages her and expresses her considerations regarding the profession: "What a wonderful profession for a woman!" (Chevalier, 2006: 30). Ella, on the other hand, iterates: "sleepless nights, the blood, the trauma when something went wrong" (Chevalier, 2006: 30), providing an example of iteration in the narrative.

The third and final project that Ella would contemplate involves the idea of having a child. She starts a conversation on the topic as they serve dinner at a good restaurant. Rick's reaction, though as Ella suggests, shouldn't have been a surprise for her, makes the protagonist feel disappointed: "I felt let down, though I knew Rick too well to be surprised by his attitude" (Chevalier, 2006: 31). The most important project for Ella provides an instance for autocorrelation between her disappointment and her husband's reaction and attitude towards the subject.

The important decision in Ella and Rick's life synchronizes with the dream Ella would repeatedly have. The chaotic dream occurs at discrete periods of time, at separate intervals, as the eruption of a volcano. Ella narrates the reverie which had as a starting point the moment Ella and her husband decided to conceive:

"That night I had the dream for the first time. It began with flickering, a movement between dark and light. It wasn't black, it wasn't white; it was blue. I was dreaming in blue. It moved like it was being buffeted by the wind, undulating toward me and away. It began to press into me, the pressure of water rather than stone. I could hear a voice chanting. Then I was reciting too, the words pouring from me. The other voice began to cry; then I was sobbing. I cried until I couldn't breathe. The pressure of the blue closed in around me" (Chevalier, 2006: 32-33)

The dream associated with the momentous decision provides an instance of autocorrelation in the narrative. Another autocorrelation depicted by the dream is represented by the connection between Ella and Isabelle's destinies, as blue is the color present in both protagonists' lives. The recurrent dream of the color blue provides an instance of recursion, as Ella utters: "Above all, I was exhausted. I was sleeping badly, dragged into a room of blue each night" (Chevalier, 2006: 33).

Ella conceals the dream from her husband and one night she finds herself contemplating about the event. Ella realizes that the dream occurs when they try to conceive, hence the autocorrelation between conception and her dream: "One night I was lying in bed, staring at the blue dancing above me, when it finally dawned on me: the only two nights I hadn't had the dream in the last ten days were when we hadn't had sex" (Chevalier, 2006: 34).

The protagonist informs the readers that she was grateful for discovering the connection between her sleepless nights and nightmares and her anxiety about procreation: "Part of me was relieved to make that connection, to be able to explain it: I was anxious about conceiving, and that was bringing on the nightmare. Knowing that made it a little less frightening" (Chevalier, 2006: 34). Hence, the autocorrelation between her anxiety and her nightmare is reaffirmed by Ella.

One night, Rick discovers red stains on Ella's hands. Rick's assertiveness convinces Ella to see a doctor concerning the red marks on her arms. At the doctor's, Ella mentions a previous episode when she suffered from psoriasis when she was young, hence an occasion which has a replica, namely a recursion in the narrative. In addition, the doctor's information concerning the connection between Ella's lack of sleep and her psoriasis provide an instance of autocorrelation in the narration.

Ella recounts the events that happened one day, as she sits at a café and reads the newspaper. An unsupervised child chokes and Ella attempts to rescue the baby but she runs across the French people's barrier, not being able to reach the child. The episode comes as an epiphany for Ella who ceases going out. Her decision, however, has a connection with her fluency as regards the French language, which deteriorates as she refuses to spend time out: "After that I felt uncomfortable in town. I avoided the café and the woman with her baby. I found it hard to look people in the eye. My French became less confident and my accent deteriorated" (Chevalier, 2006: 39). The connection between Ella's interaction with French people and her deteriorated accent once she refuses to socialize provides another instance of autocorrelation.

To conclude, the numerous illustrations of recursion, autocorrelation, iteration, as well as the butterfly effect and bifurcation, in the parallel narrative, stand proof to the fact that Tracy Chevalier's masterpiece *The Virgin Blue* as a concrete evidence that literary pieces may be analyzed by the use of a mathematical and physical theory.

Bibliography:

Abraham, Ralph & Ueda, Yoshisuke. "The Chaos Avant-Garde. Memories of the Early Days of Chaos Theory". World Scientific series on Nonlinear Science, Series A, Vol. 39.

Chevalier, Tracy. *The Virgin Blue*. London, HarperCollins Publishers, 2006.

Coșer, Cornelia. *Critical Approaches to the Literary Text*. Editura Universității "Aurel Vlaicu", 2014.

Gilder, Eric. *Man and Mission: Construing Wayne Booth's Theology of Literature as Rhetoric*. Sibiu: Lucian Blaga University Press of Sibiu, 2003.

Halpern, Paul. "Chaos Theory, The Butterfly Effect, and the Computer Glitch that Started it All". Forbes Media LLC. Web. 28 January 2019

Hayles, N. Katherine. *Chaos Bound*. USA: Cornell University Press, 1991. Web. 28 January 2019.

Murzi, Mauro. "Jules Henri Poincaré". Internet Encyclopedia of Philosophy. Web. 28 January 2019.

Slethaug, Gordon E. *Beautiful Chaos-Chaos Theory and metachaotics in recent American fiction*. State University of New York Press, 2000. Web. 28 January 2019.

Tupan, Maria-Ana. "Literary Discourses of the New Physics", Editura Univ. Bucuresti, 2010.

Williams, Garnett P. *Chaos Theory Tamed*. Taylor & Francis Ltd, 1999. Web. 28 January 2019.