

Epistemological Postmodern Science in Tom Stoppard's *Hapgood* and *Arcadia* Through a Lyotardian Perspective

Samira Hemasi

Department of Literature and Foreign Languages
Tabriz Branch, Islamic Azad University, Tabriz, Iran
Email: samirahemasi@gmail.com

Hossein Sabouri

Faculty of Persian and Foreign Languages, University of Tabriz, Iran
Email: sabouri@tabrizu.ac.ir

Abstract Tom Stoppard, the British postmodern playwright, has used two post-modern sciences, quantum mechanics and chaos theory, as the basis of his plays *Hapgood* and *Arcadia*. However, studying these plays in detail shows that he has a paradoxical style. His treatment with these sciences seems to be in opposition to what is believed in postmodernism. This paper aims to study quantum and chaos theories in *Hapgood* and *Arcadia* through a Lyotardian perspective. However, Stoppard challenges Lyotard's theories and his beliefs regarding postmodern science. It seems that Stoppard does not reach the full expression of a postmodern writer in this respect. Here, the researchers have tried to show Stoppard's postmodern science is somehow "classical." At the end, it is suggested that the duality in Stoppard's attitude can be considered a postmodern move. He is actually practicing postmodern doubt and uncertainty by his dualistic behavior. All in all, it can be considered what Lyotard calls a case of "differend."

Key words chaos theory; quantum theory; postmodern Science; differend; death of metanarratives

Authors **Samira Hemmasi**, graduated in English language and literature at B.A. level from University of Tehran in 2004. Then, she studied English literature at M.A. level in Islamic Azad University of Tabriz and graduated in 2006. Since then, she has been teaching at the same university as a part-time instructor. She has been studying English language and literature at PhD level since 2017 in Islamic Azad University of Tabriz. She is also teaching English language in Iran Language Institute (ILI). **Dr. Hossein Sabouri**, is Associate Professor in Faculty of Persian

and Foreign Languages of University of Tabriz. He got his B.A. degree in English language and literature in 1995 from University of Tabriz and his M.A. degree from Islamic Azad university of Tehran in 1997 and got his PhD degree from Punjab University Chandigarh in India in 2005.

Introduction

Postmodern drama, as a recent phenomenon following the principles of postmodern philosophy, emerged in the middle of 20th century. Tom Stoppard is one of the playwrights who has written plays following this mode. He presents different features of postmodernism challenging accepted norms. But reading his works raises an important question in the reader's mind. The question is: Does Stoppard remain faithful to these postmodern notions in his works?

Postmodern science is one of the elements which makes the foundation of Stoppard's plays, *Arcadia* and *Hapgood*. Studying these plays shows that Stoppard challenges the principle of postmodern science which is raising questions rather than answering them. Michael Vanden Heuvel writes in an article that "Stoppard does not fully inhabit the postmodern terrain, but he often travels there and traverses it, speaking the language of the region faultlessly even as he stops occasionally to arraign it with deadpan irony or wit" (213).

This article is going to study two postmodern sciences, quantum mechanics in *Hapgood* and chaos Theory in *Arcadia* from Lyotard's point of view. Jean Francois Lyotard, as a postmodern theoretician, has presented the definition of postmodern science and defines it as an anti-epistemological phenomenon. It would be interesting to investigate how Stoppard is dealing with postmodern and anti-postmodern principles regarding science and how he is playing with antinomies in this respect. After all, there arises another question: Can we still call Stoppard a postmodern writer?

To achieve this goal we have divided this paper into three parts. In the first part quantum theory and Stoppard's challenge with this postmodern science has been studied in *Hapgood* and in the second part chaos theory has been studied in *Arcadia* and at the end there is a final conclusion following these two sections.

A Quantum Leap: Postmodern Science in *Hapgood*, Classical Result!

Hapgood, one of the major well-received plays of Stoppard, was written in 1988. This play is a science-based play and Stoppard has used one of the postmodern sciences, quantum mechanics, at its core. He has used the baffling aspects of quantum

physics as a parallel to bluff and double-bluff in the plots of spies. Actually, it is an analogy between Cold War spies and the behavior of particles in the subatomic world. The play begins with a scene at the pool where the secret government agents of Britain and Soviet Union are exchanging information. This operation has been designed by Betty Hapgood to find out the agent who is suspected to be a double agent and gives secret information to Russians. But the exchange goes wrong and they try to put the pieces together to find out how it happened. Ridley is the double agent whom Hapgood is looking for but they can't figure out how he is doing it.

Stoppard has artistically dramatized quantum mechanics and brought it into the world of human beings. Quantum theory describes the interaction of particles in subatomic level, where the rules of classical mechanics can be no longer applied. It has a close up look at the behavior of the electrons in an atom and tries to find out where an electron is and what it is doing which is not possible at the same time. It suggests "if we take one classical Parameter—position—and measure a subatomic particle accordingly, we not only sacrifice measurement of similarly classical parameters, such as velocity but actually alter the behavior of those particles" (Sim 345). Stoppard makes this analogy the basis of his play by comparing the behavior of an electron and Ridley as a double agent.

Besides Ridley, Kerner's behavior has also been compared to an electron's in some other parts of the play since he is also a double agent but not a secret one. An example is in the scene two of the play when Blair wants to know that Kerner is on which side as a double agent; on British side or on the Russian side? Kerner tries to explain the dual behavior of light which was the basis of discovering quantum theory. He explains that light has both particle-like and wave-like behavior. He continues to elaborate the similarity between the behavior of light and the duality in the behavior of a double agent. He states that "Nobody knows. Somehow light is continuous and also discontinuous. The experimenter makes the choice. You get what you interrogate for and you want to know if I'm a wave or a particle" (Stoppard 501).

As Kerner mentions, a double agent or an electron can be in all possible states as long as one does not look to check. So, it breaks the classical principle. This is exactly what has been stated in Bohr's superposition principle. In an online dictionary, "Quantum Theory," it is noted about this principle that "It claims while we do not know what the state of any object is, it is actually in all possible states simultaneously, as long as we do not look to check" (2006). A double agent, like an electron, is "here" and "there" and sometimes he is a little bit "here" and a little bit "there." Polkinghorne writes "Classically speaking there are only two possibilities

(here or there). However, if we consider it a quantum world there are not just ‘here’ and ‘there’ possibilities any more. There can be mixture of these states, a bit of ‘here’ and a bit of ‘there’. This new possibility that separates quantum world from classical physics is called superposition principle” (polkinghorne 21).

The other analogy made by Stoppard in the play, which is the main subject of this paper, is between Ridley, the one who is the most suspected to be the double agent they are looking for, and an electron. In fact, the shared principles in the behavior of both of them are uncertainty and superposition principles. For instance, in Act Two, Scene Five, Kerner asserts that Ridley’s unexplainable movements from here to there without going in between is a quantum leap. He says “The particle world is the dream world of the intelligence officer. An electron can be here or there at the same moment. You can choose. It can go from here to there without going in between ... Its movements cannot be anticipated because it has no reasons ...” (Stoppard 544).

They cannot figure out how Ridley is giving information to both sides and what he is doing while he has always had an alibi. Stoppard’s philosophical challenge in the play starts when Kerner proposes a solution for Ridley’s riddle! Kerner who is a physicist and the rational mind in the play, proposes his radical theory and says this riddle could be solved if only Ridley had a “twin.” Kerner says that just in this case Ridley can be always his own alibi. In fact, he proposes a rational solution for the problem of Ridley’s dual behavior which has prevented his accusation as a double agent; just like Immanuel Kant’s Königsberg which was the problem of seven bridges that should have been passed without passing any of them twice, this problem could be solved by passing of two persons instead of one.

What Kerner tries to do is to give a reasonable explanation for an unreasonable behavior. He notes, Ridley can be in two places at the same time and doing something unknown while under close surveillance if only he has a twin. Therefore, everything can be “reasonably” explained. So, the twins removed the films from Kerner’s briefcase, and it is the unseen twin who was marked by the isotope in it; so the other one who was dealing with Hapgood and her team was completely clean.

Kerner’s solution is an interesting end for the play although there is a big problem here. This ending for the play is not “quantumic” at all and that is the point in which Stoppard goes astray from moving in postmodern track. Actually the conclusion that Kerner, or in other words Stoppard, reaches is completely different or probably the opposite of what happens in quantum mechanics.

Quantum theory proposes there is a duality in the behavior of an electron and this is not because of the fact that the electron has a twin or a double but because

this is the very characteristic of an electron which cannot be reasonably explained. Actually, half- knowledge is the best that a physicist can attain or he can just talk about the possibility of the behavior of an electron.

This can become clearer by Heisenberg's uncertainty principle that was clarified in 1927. Polkinghorne mentions in his book that Heisenberg wanted to measure the position and the momentum of an electron by an x-ray microscope. However, he considered that increasing knowledge of the position of the electron is in fact a decrease of knowledge about its momentum. This was the basis of his uncertainty principle (Polkinghorne 32-33). So, determining the location of an electron is not possible no matter how much information you have. Unlike Ridley that has a twin in the play, an electron can be here or there, not because it is double but because this is its nature.

Considering it from Lyotard's point of view, postmodernism questions human rationality and it is not an instrument of reaching the truth any more. Lyotard believes "postmodern science seeks to discover the unknown rather than known ... Such theories feature a host of mysterious entities that seem to defy any possibility of rational explanation" (Sim 339).

In fact postmodern sciences, like quantum mechanics, undermines reason too since they deal with probabilities and a definite truth cannot be attained even by reason. In other words, they are anti-epistemological and indeterministic. Ashley Woodward in an online article states that "Postmodern sciences, which concern themselves with undecidables, the limits of precise control, conflicts characterized by incomplete information, 'fracta', catastrophes, and pragmatic paradoxes, continue to undermine performativity in the form of determinism" (2006).

On the other hand, classical science is on the basis of reason and it is deterministic. As McEvoy and Zarate discuss in their book, *Introducing Quantum Theory*, classical scientists relied on experiments and measurements and they had a similar law. They all tried to reach the results by mathematical laws. The late 19th century physicists were called classical because they were moving on the path of Newton's mechanics and Maxwell's electromagnetism. In fact, classical physicists had built up some assumptions which were based on their thinking and made the acceptance of new ideas very difficult. They all believed in determinism (5-8). Classical physicists were confident in what they knew. This kind of science is epistemological since it is deterministic and aimed to reach a final absolute result.

Accordingly, what Stoppard does is making a reasonable and classical ending for Ridley's mystery. He is showing that the uncertainty about Ridley's behavior has been because of the lack of information and Kerner found the missing informa-

tion and reached a rational definite solution to justify Ridley's behavior; while "an electron's movements cannot be asserted because it has no reasons" (Stoppard 544). Coming to the conclusion that Ridley has a twin, calls into question the postmodern aspect of quantum mechanics since the postmodern uncertainty which is the end of quantum theory has been unexpectedly resolved here and this is a totally classical and Newtonian end.

Daniel Jernigan notes in his article "Tom Stoppard and Postmodern Science" that "Indeed while previously many assumed that we might eventually move beyond probable predictions, after quantum mechanics it becomes certain that probability is the best we can ever hope to achieve. A postmodernist would see this change as significant. Stoppard does not" (2003). In other words, probability is the end of quantum mechanics while it is not the end of *Hapgood*.

Stoppard shows an inclination towards classical deterministic science in other parts of the play too. In the following quotation Kerner admires the kind of science that proceeds in a clear reasonable method. In Act One, Scene Five he says "In science this is understood: what is interesting is to know what is happening. When I write an experiment I do not wish you to be *surprised*. It is not a *joke*. This is why a science paper is a beautiful thing" (Stoppard 543).

Stoppard has changed the anti-epistemological postmodern science into a complete epistemological science in *Hapgood* and the language game of possibility has turned into the language game of predictability and certainty. As a result, paralogy is not the legitimization criterion for postmodern science in *Hapgood*. "Stoppard, like Einstein imagines that a classical scenario that normalizes non-classical behavior still persists" (Jernigan 2003).

Stoppard also undermines Lyotard's theory of the "death of metanarratives." It is stated in *Beginning Theory* that Lyotard believes postmodern science is incredulity towards metanarratives. This notion corresponds to the idea of the rejection of totality which is the basis of postmodernism (Barry 86). Quantum mechanics provides the ultimate incredulity to metanarratives because it resists reaching an absolute final result. Since the position and the momentum of an electron can never be determined at the same time. Therefore, quantum physics is anti-epistemological and not classical. Daniel Jernigan asserts in his article:

It is a very tenet of quantum mechanics that the best for which we can ever hope with regard to giving the life history of a quantum particle is to tell it as a probability narrative. At best we can predict that a particular pattern will result, or express the odds against a particular particle traveling along a

particular path. Contrary to Newton (whose mechanics implies that we might even predict the roll of dice if we knew all the necessary conditions involved to establish it fully), quantum physics asserts that no matter how much information we have about a particular system, prediction will always be a matter of probability. (2006)

But on the contrary, a metanarrative or an absolute result, has been gained in a reasonable way at the end of Stoppard's play.

What Stoppard does in *Hapgood* is also completely in contradiction to Lyotard's notion of "sublime" and "the unrepresentable." With Kerner's resolution, there remains nothing unknown which cannot be explained by rationality. Attaining a reasonable certainty and resolving the duality in a double agent's behavior fades away what was supposed to be unrepresentable. It is written in *The Cambridge Companion to Tom Stoppard*: "Stoppard's vision is not merely that of the mystery-solver, the sort based on a Holmesian clue that yields the pleasurable 'ah-hah!' Stoppard refuses to oversimplify the universe...he can solve the mystery of the twin spies in that play, but he cannot solve the mystery of the wave/particle controversy in the theory of light...it suggests a contemporary author who is distinctly not a postmodern one" (Zinman 121).

Kerner notes "Mathematics does not take pictures of the world, it's only a way of making sense. Twins, waves, black holes—we make bets on what makes best sense" (Stoppard 571). He chooses a "reasonable" solution, a metanarrative that makes sense and cannot be questioned.

In fact, if Stoppard was tended to end the play in a quantummic way with all of its probabilities at the end, Ridley should not have been captured. He should have gone free or at least the play should have ended unresolved in a kind of probability. In this way, the uncertainty and duality in his behavior still remained unresolved at the end of the play. But Stoppard breaks the rules and makes a classical result for a postmodern science. He decides to give a classical solution for a non-classical issue. Maybe, by repeating the sentence "I've always broken the rules" all over the play, he tries to show his own breaking of the rules of postmodern science and betraying postmodernism.

Orderly Chaos in *Arcadia*

Arcadia is Stoppard's second science-based play which was written in 1993. It deals with another postmodern science, chaos theory, at its center. It would be interesting to know whether Stoppard has a postmodern attitude towards this key concept of

postmodernism or not.

Lyotard calls Chaos Theory a postmodern science. According to Rae's article "Chaos Theory: A Brief Introduction," Edward Lorenz, the first experimenter of this theory, found out that very tiny factors in a system which are called hidden variables can have a very huge effect in the whole system. Rae asserts that a small change in the initial conditions makes a vital change in the long-term behavior of a system. Such things are not avoidable and controllable even in a lab (2006). This theory asserts that the result of a chaotic system cannot be predicted exactly or the prediction would be very hard. So chaos theory undermines predictability like quantum mechanics. It undermines grand narratives and opens up a new language game which is the language game of probability instead of the classical language game of determinism.

Stoppard compares the process of a biographical research in *Arcadia* to a chaotic system. Chaos theory has been used to show the difficulties of biographical literary researchers. Hannah and Bernard want to relate the events that occurred in Sidley Park in April 1809. The play lingers between two periods of time in Sidley Park estate. Bernard claims that Lord Byron had been present in the house in 1809, seduced Ezra Chater's wife and wrote a harsh review of his work, killed him in a duel and then left for Europe as a self-exile.

Bernard presents some evidence for his theory. He found a letter of Chater to someone unnamed, challenging him to a duel because of an insult to his wife. He had found this letter in Chater's book of poem that was in Byron's possession for some time. Thus he assumed that they belonged to Lord Byron and the duel had been between him and Chater. Bernard had also assumed that the harsh review of Chater's work was written by Byron according to some evidences.

Since the play dramatizes 1809 too, the reader of the play knows that what Bernard has concluded is not true. He's achieved this false result because of some trivial mistakes. He's made mistake about the duel letter since it was not addressed to Byron and the harsh review on Chater's book was not written by Byron either. In fact, Bernard's truth was a self-constructed truth and the final result was untrustworthy. This chaotic system, the process of their biographical research, didn't reach the truth because of small initial factors intervening the whole system of the biographical research.

Hannah's challenge with Bernard is a turning point for the play since Stoppard deviates from postmodern track at this point. From Lyotard's point of view, Bernard's truth is a "little narrative." It is a kind of personal truth that has been made by him. Right or wrong, Bernard claims his theory which can claim its own validity as

a personal truth or little narrative. But Hannah refuses to accept his self-constructed theory. All the time that Bernard tells her about the proofs that he has, she treats rationally and uses her logical mind in order to find the accuracy or inaccuracy of Bernard's theory.

Hannah keeps saying to Bernard that Chater could have died of anything else, at anywhere else because she believes that Bernard does not have enough proof for his claim. In Act One, Scene Four, she uses her rationality again and refutes Bernard's claim about the duel between Byron and Chater or even the presence of Byron in Sidley Park at that time. She asserts "You haven't established it was fought, you haven't established it was Byron. For God's sake, Bernard, you haven't established Byron was even here!" (Stoppard 72). In fact, Hannah believes that Bernard does not have a leg to stand on and his theory is not acceptable for a rational mind.

In Act Two, Scene Five Hannah again explains it does not seem rational to imagine that Byron has killed Chater in a duel in April 1809, relaxed till July and then left the country in a cloud of panic and mystery. She ridicules Bernard's theory and says "Nobody would kill a man and then pan his book. I mean, not in that order. So he must have borrowed the book, written the review, posted it, seduced Mrs. Chater, fought a duel and departed, all in the space of two or three days. Who would do that?" (Stoppard 85). She says it is in no way rational.

What Hannah does, is in fact using a logical scientific method of conjecture and refutation. She fights with Bernard to find the real truth. The truth that Bernard achieves, is the one that he wants to get. It's a kind of personal truth or a little narrative. On the other hand, Hannah tries to catch the absolute final result, the real truth. She examines every step of Bernard's theory and refuses the anti-logical ones until she reaches the final truth. This procedure is classical. This is not the way of postmodern science because it is believed in postmodernism that no matter how much knowledge and information one has, ration is not anymore a metanarrative that leads him/her to a final result. "In general, the postmodernists claim that reason, being situated rationality, can no longer aspire to certainty" (Steuerman 1).

As a result, by using a classical, rational, scientific method, Hannah constantly insists on calling Bernard's theory under question in order to reach the truth in a chaotic system and this is how Stoppard moves out of postmodern track. Susan Veas-Gulani, in Jernigan's article, asserts that "Stoppard believes firmly in scientific method of conjecture and refutation, a process that chooses some data to be less flawless than other data on seemingly arbitrary criteria" (qtd. in Jernigan 2006). Consequently, by giving credibility to reason, Stoppard challenges Lyotard's thought.

As it has been mentioned, the end of postmodern science is a kind of probability that cannot be resolved by ration. "Postmodernism elevates the irrational as sublime and decries metanarratives and the idea of transcendence as nihilistic" (Scolomb 57). However, Hannah found out the truth that Chater had actually died in 1810 and of a monkey bite. This is an epistemological ending for this play which is in complete contradiction with chaos theory as a postmodern science. Daniel Jernigan argues in his essay "Tom Stoppard and Postmodern Science" that 'Because stoppard's use of chaos theory is not especially anti-epistemological, it might be even argued that Stoppard only delves into chaos theory because he is convinced that chaos theorists really have seen 'what things meant' and that if the universe happens to be so complex that it fails to be deterministic, so be it. At least we know the truth" (2006).

What Stoppard does is trying to find order out of chaos. He asserts this fact when Valentine, another character of the play, says "See? In an ocean of ashes, islands of order" (Stoppard 107). Actually, his use of a logical process and quest to find order is not postmodern but it is classical since order can be found in Classical science because it believes that the future could be exactly computed and predicted and there could be a definite final result for every experiment.

Michael V. Heuvel, one of the main critics of Stoppard's works, notes in his article that "Stoppard is always more interested in the interplay of order and disorder than in maintaining a prevailing belief in one or the other" (229). Heuvel fortifies what has been said so far. Actually, Stoppard does not stick to one track but changes his line all the time. He is not fully faithful to postmodern beliefs. In fact Stoppard puts postmodern science and classical science, the opposite facts, beside each other and plays with them.

According to what Lyotard believes about postmodern science, Stoppard absolutely contradicts the main postmodern notions. As Stuart Sim states in his book, Lyotard believes postmodern science is a kind of language game that searches for instabilities in a system rather than stabilities. It deals with undecidables and limits of precise control. Postmodern science, as Lyotard believes, does not reach a unified knowledge. Probability is the end in this kind of science (339). On the contrary. Stoppard tries to make stability in the play and leaves nothing out of control.

Daniel Jernigan notes Stoppard does not transfer the postmodern incredulity. At the end, everything becomes certain and for sure. Daniel Jernigan argues in his article that:

Stoppard's narrative is decidedly traditional. The reverbrations that result from the various chaotic deteriorations are simple enough that careful application of

scientific method can result in progress. Thus Stoppard refuses to experience any of the ‘atrocious solitude and anxiety’ which is the postmodern product of such feedback. Thoroughly, postmodern work might, by contrast, simultaneously raise ontological questions about the nature of the past and epistemological questions about how we are to know the past – and remain incredulous about that past’s grand metanarrative. Indeed that a postmodern squeal is the end result of such investigation. (2006)

Another important point about the play is the irreversibility of a chaotic system. One cannot reach the input or the past in a chaotic system through the result or the output. Actually, a chaotic system is irreversible because of the principle that is called dependence on initial factors. Susanne Veas-Gulani explains the irreversibility of chaos theory. Gulani believes that one cannot reach from the result or the output to the input or the past in a chaotic system. Jernigan states that Gulani points out “... it increases the difficulty not only of predicting the future, but also of describing the past. She sees ‘the consequence of sensitive dependence on initial conditions’ as the ‘irreversibility of chaotic systems’. Hence she asserts the impossibility of speculation not only about the future of the system, but also about its past. Even though the output of a system is determined by its input, it is impossible to reconstruct this input exactly” (qtd. in Jernigan 2006). However, Hannah has made this chaotic system reversible and could reach the input through the output.

Moving against Lyotard’s theory of “death of metanarratives” is another evidence of leaving the postmodern track at the end of the play. As it has been mentioned, Lyotard believes every little narrative is claiming its own authority because postmodern school of thought is on the basis of plurality and not totality. However, this doubt cannot be seen at the end of *Arcadia*.

If this play had ended in a postmodern mood, it shouldn’t have been ended in a kind of certainty about the truth. It should not have ended up in an absolute metanarrative. Stoppard should have ended the play in a shadow of doubt. It means Hannah shouldn’t have reached the true theory or the play should have ended up in a kind of postmodern uncertainty by not revealing the accuracy or inaccuracy of Bernard’s theory; Hannah and Bernard should have remained uncertain about their theories.

Consequently, it seems that Stoppard is not following the postmodern Lyotardian idea of death of metanarratives but he is following a kind of “speculative grand narrative.” What Stoppard does is mixing classical result and postmodern science. He has made a kind of epistemological postmodern science. Stoppard has used the

anti-epistemological chaos theory and made it epistemological. After all, Stoppard undermines himself as a postmodern writer.

Conclusion

The study of postmodern science in these two plays shows a kind of duality in Stoppard's style. He is putting two antinomies, postmodern science and classical (or Newtonian) science, beside each other and reconciles them. In fact, he reconciles epistemological and anti-epistemological views toward science. Actually, there is an interplay of order and disorder, certainty and uncertainty and finally he makes one lead to the other one. There is a kind of classical reasonable result for the "quantum" situation in *Hapgood* and an orderly chaos in *Arcadia*. Niederhoff was so right when he called *Arcadia* 'a play of ideas'. Burkhard Niederhoff says in his article that "Stoppard allows for the cooperation of opposed principles" (2001).

In Stoppard's plays, one feels an inability to decide whether Stoppard is dealing with quantum and chaos theories as postmodern sciences or classical Newtonian sciences. Actually, what Stoppard does is considering postmodern and classical as two little narratives and does not stick to just one of them; he mingles them in each other. In fact, Stoppard prefers this kind of uncertainty and shows every concept, world-view or narrative contains the traces of its antinomy in itself. Kerner states in *Hapgood* that "The priest is visited by the doubter, the Marxist sees the civilizing force of the bourgeois, the captain of industry admits the justice of common ownership" (Stoppard 73).

It is concluded in this paper that this kind of duality in Stoppard's attitude can be considered a postmodern trick. Jacques Derrida defines uncertainty as the "impossibility of deciding between two or more competing interpretations" (Bennett & Royle 179). This is what Derrida explains in his concept of "deconstruction." By deconstruction Derrida tries to find another center in order to decenter one. He tries to reverse binary oppositions to decentralize.

It was mentioned that Stoppard has considered "postmodern/Newtonian" as a binary opposition; each side of this binary has the traces of the other side in itself and gets meaning by the other one. When we say "postmodern," we mean "not Newtonian." So "Newtonian or classical" is absent in the meaning of "postmodern." But "absent signs leave their trace in what is present (say, in our word postmodern); they are there and not there at the same time" (Schmitz 2007, 119); it's like the behavior of an electron. It can be said that Stoppard has deconstructed this binary by reversing it and not giving privilege to the first side of the binary. He does that by mixing them and reaching a classical epistemological result for the postmodern

sciences in these plays and therefore questioning himself as a postmodern writer. But this decentralization is exactly the aim of postmodernism.

What is trying to be said is that Stoppard's duality in dealing with postmodern science is not an anti-postmodern characteristic. Actually, unlike what it seems, Stoppard celebrates postmodern plurality by his dualistic behavior. Derrida believes "In the universe there are no absolutes or fixed points, so that the universe we live in is decentered" (Barry 67).

By looking in a different way, it is seen that since Stoppard gives credibility to different antinomies, he is fortifying Lyotard's notion of 'death of metanarratives' which are classical science and postmodern science. Heuvel claims that opposite concepts have something in common with each other and a little bit of one lives in the other one. He asserts Stoppard has a similar claim and quotes from Stoppard that "even the facility to perceive and define two ideas such as classical and romantic in opposition to each other indicates that one shares a little bit of each" (Heuvel 213).

What Stoppard has done in these plays is the representation of Lyotard's differend. Differend is a case of conflict, between two parties, that cannot be resolved. According to Malpas, Lyotard believes a differend is an unstable state in which no impartial metalanguage is possible in order to decide between the different language games (60-61). Stoppard cannot decide between antinomies and therefore switches from one of them to the other one. In fact, Stoppard is doing justice to them. He does not make one of them silent, but lets both of them exist. He lets both postmodern science and classical science speak. Honi Fern Haber comments on Lyotard views that heteronomy and multiplicity is the basis of justice. He defines multiplicity as the demands of justice and says a just situation is when all potential narrators are allowed to narrate from their individual perspectives and none of them hold privilege over the other (16-18).

Since inconsistency is the nature of postmodernism, it can be claimed that Stoppard has done his mission as a postmodern writer skillfully by his doubt and uncertainty. Stoppard has an "electron-like behavior" himself. He is not fully "here" or "there." He is sometimes here, sometimes there, and sometimes in both; a little bit here and a little bit there; a little bit postmodern and a little bit "not postmodern." He doesn't stick to just one world-view and this is exactly what postmodernism tries to convey.

Works Cited

Barry, Peter. *Beginning Theory*. Manchester: Manchester UP, 2002.

- Bennett, Andrew, and Nicholas Royle. *An Introduction to Literature, Criticism and Theory*. Hertfordshire: Prentice Hall Europe, 1995.
- Haber, Honi Fern. *Beyond Postmodern Politics*. London: Routledge, 1994.
- Heuvel, Michael Vanden. "Is Postmodernism?: Stoppard Among/Against the Postmoderns." *The Cambridge Companion to Tom Stoppard*. Ed. Katherine E. Kelly. Cambridge: Cambridge, 2001.
- Jernigan, Daniel. "Tom Stoppard and Postmodern Science," 2003. Available at: <http://www.questia.com/PM.qst?a=o&d=5002081542/> (accessed 24 June 2006).
- Malpas, Simon. *Jean Francois Lyotard*. London: Routledge, 2003.
- McEvoy, J.P, and Oscar Zarate. *Introducing Quantum Theory*. New York: Totem, 1996.
- Niederhoff, Burkhard. "Fortuitous Wit: Dialogue and Epistemology in Tom Stoppard's *Arcadia*," 2001. Available at: <http://www.unituebingen.de/uni/nec/niederhoff111.htm/> (accessed 29 September 2006).
- Polkinghorn, John. *Quantum Theory: A Very Short Introduction*. New York: Oxford, 2002.
- "Quantum Theory." *SMB (on-line dictionary)*, 22 June 2006. Available at: <http://searchsmb.techtarget.com/sdefinition/o,,sid44-gci332247,oo.html/> (accessed 24 November 2006).
- Rae, Greg. "Chaos Theory: A Brief Introduction," 2006. Available at: <http://www.imho.com/grae/chaos/chaos.html/> (accessed 27 June 2006).
- Schmitz, Thomas. *Modern Literary Theory and Ancient Texts, An Introduction*. Massachusetts: Blackwell, 2007.
- Scolomb, Will. *Nihilism and Sublime Postmodern*. New York: Routledge, 2006.
- Sim, Stuart. *A Routledge Companion to Postmodernism*. London: Routledge, 2001.
- Steuerman, Emilia. *Bound of Reason*. London: Routledge, 2000.
- Stoppard, Tom. *Plays 5: Arcadia, The Real Thing, Night and Day, Indian Ink, Hapgood*. London: Faber and Faber, 1999.
- Woodward, Ashley. "Jean Francois Lyotard," 2006. Available at: <http://www.iep.utm.edu/l/Lyotard.htm/> (accessed 8 July 2006).
- Zinman, Toby. "Travesties, *Night and Day*, *The Real Thing*." *The Cambridge Companion to Tom Stoppard*. Ed. Katherine E. Kelly. Cambridge: Cambridge, 2001. 120-135.