RELATIVITY IN TRANSYLVANIA AND PATUSAN: FINDING THE ROOTS OF EINSTEIN'S THEORIES OF RELATIVITY IN *DRACULA* AND *LORD JIM*

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This thesis investigates the similarities in the study of time and space in literature and science during the modern period. Specifically, it focuses on the portrayal of time and space within Bram Stoker’s *Dracula* (1897) and Joseph Conrad’s *Lord Jim* (1899-1900), and compares the ideas presented with those later scientifically formulated by Albert Einstein in his special and general theories of relativity (1905-1915). Although both novels precede Einstein’s theories, they reveal advanced complex ideas of time and space very similar to those later argued by the iconic physicist. These ideas follow a linear progression including a sense of temporal dissonance, the search for a communal sense of the present, the awareness and expansion of the individual’s sense of the present, and the effect of mass on surrounding space. This approach enhances readings of *Dracula* and *Lord Jim*, illuminating the fascination with highly refined notions of time and space within modern European culture.
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CHAPTER I

UNDERSTANDING REALITY THROUGH SCIENCE AND LITERATURE

Modernist literary scholarship concerning the expression of scientific ideas within literature often gravitates toward the end of the period, focusing on works that display these ideas in full bloom. Joseph Conrad’s *The Secret Agent* and James Joyce’s *Ulysses* are excellent exhibits of modernist perspectives of space and time embedded in the form of a novel. In this thesis, however, I would like to move away from those blossoms and focus on novels containing the roots of those scientific ideas. In so doing, I explore the relationship between early works in the period, specifically Bram Stoker’s *Dracula*¹ and Joseph Conrad’s *Lord Jim*.² I argue that these works contain many of the scientific seeds of thought that will ultimately germinate in Albert Einstein’s *Special and General Theories of Relativity*.³ This is not to say that Einstein was directly influenced by either of these novels. Instead, I assert that *Dracula* and *Lord Jim* explore some of the same ideas that were later explored in Einstein’s theories. Furthermore, these literary explorations are not trivial or simple, but represent profound understanding of incredibly complex scientific problems. Finally, the evolution of thought regarding space and time through these two novels shares great similarity with Einstein’s progression of ideas presented in his special and general theories of relativity.


In the following chapter I first focus on the technological and scientific advancements that brought the ideas of space and time to the foreground in the late nineteenth century. I then utilize each chapter to discuss literary and scientific stages in the evolution of spatial and temporal theories. Moreover, I examine the problem created by multiple methods of measuring time and its influence on both Bram Stoker’s *Dracula* and Einstein’s theories of relativity. This problem serves as a foundation for spatial/temporal studies at the turn of the century in both literature and science. Chapter III contrasts *Dracula*’s proposed solution of a communal sense of the present with Einstein’s later refutation of definitive simultaneity. While these responses differ in conclusion, it is interesting to note that both approaches move from an elongated linear sense of time to a single moment. In chapter IV, Joseph Conrad’s *Lord Jim* dismisses the hope of a communal present offered in *Dracula*. Instead, *Lord Jim* focuses on the expansion and awareness of an individual sense of the present much as Einstein would later attempt to comprehend the universe through our unique perspective. Chapter V explores *Lord Jim*’s study of space and the effect of increased mass on space and notes the incredibly similar conclusions reached by Einstein in his general theory of relativity. Finally, chapter IV draws enduring conclusions on these episodes of spatial/temporal study.

Within their extraordinary narratives, Bram Stoker’s *Dracula* and Joseph Conrad’s *Lord Jim* document extraordinary explorations of the nature of space and time. *Dracula* examines the confusion created by temporal dissonance and disorientation during the late nineteenth century. Throughout the opening of the novel, Jonathan Harker’s sense of time clashes with the temporal measurements and systems of those
around him. In examining the transition from temporal disorientation to synchronization, the novel presents an expansion of the present as the solution. The novel’s characters achieve this expansion by creating a textual document that weaves together numerous overlapping perspectives and technological expressions to provide a highly accurate account of each step of their journey. In this way, they create a communally expanded present. Later Einstein, inspired by the presence of three clocks notating three different accepted times on a single tower, develops his theories of relativity to reconcile contemporary physical theories of time and space with experimental results. However, in this process he finds that the geometric and physical laws of our universe necessitate differing perceptions of time, prohibiting a true communal present.

Joseph Conrad’s *Lord Jim* also rejects the hope for a communal present, instead constructing two distinct worlds, each with their own sense of space and time. In Jim’s attempt to traverse the gulf between these two worlds, he learns to become aware of his individual sense of the present and to expand it. The novel’s focus on the space between two worlds proves analogous to later cubist attempts to paint the “space between.” Moreover, the unusual narrative structure of *Lord Jim* experiments with the transmission of information through time and people. As Jim’s character within the novel grows, he begins to bend space and time around him. Many years later, Einstein utilizes the space between stars and planets to reimagine the structure of space-time, abandoning the traditional Cartesian structure in favor of a Gaussian curve. Furthermore, he finds that this curvature is created by the warping of space-time by objects of great mass.
CHAPTER II

TEMPORAL DISSONANCE

A brief overview of the popular scientific foci of the time helps establish the foundation for examining the role of science in both novels. During the late eighteenth century and early nineteenth century, technological advancements revolved around the notion of time. As a result, the mass production of watches and chronometers grew exponentially. In their book *Longitude*, Dana Sobel and William Andrews state that “the total world census of marine timekeepers grew from just one in 1737 to approximately five thousand instruments by 1815” (192). Moreover, numerous innovations were made in clocks to produce time keeping devices that could withstand temperature changes and extreme weather, while keeping time with greater precision. At the same time, the railway system in Europe was expanding at an incredible rate. The sprawling train system in Europe during the late nineteenth century complicated previous conceptions of space and time. The extreme velocity of trains relative to previous modes of travel brought the necessity of applied time standardization to the foreground. Advances in the precision of time-keeping devices created a society that became obsessed with and dependent upon an ever-increasing level of temporal precision. Trains traveled across great distances, but their arrival and departure times were listed by exact minutes. The precision of these train schedules in turn magnified small temporal discrepancies across vast spatial regions. Train passengers routinely travelled upon trains operating on different chronological standards across regions.

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operating on still other chronological standards. As a result, passengers often experienced temporal disorientation.

As Peter Galison points out in “Einstein’s Clocks: The Place of Time,” the problem of synchronization between clocks created a major problem for Europe’s train traveling population. This population had mushroomed in the early nineteenth century, and the lack of temporal uniformity among European nations would persist into the early twentieth century. Individual rail lines had long operated according to their own time. Galison states,

In England during the 1830s London time led Reading time by four minutes, marched seven minutes and thirty seconds in advance of Cirencester, and chimed fourteen minutes before Bridgewater… The Isle Tower in Geneva boasted three [clocks]: the big clockface in the center showed Geneva time (about 10:13), the face on the left showed the Paris-based time used all along the track of the Paris-Lyon-Mediterranee railroad company (9:58), and the right-hand clock boasted Bern time—a handsome five minutes in advance (10:18). (361)

One can easily see how telling the time during the nineteenth century was not a simple process. Moreover, lack of uniformity among chronologists and navigators persisted into the twentieth century. While the International Meridian Conference was held in Washington, D.C. in 1884, a meeting where representatives from twenty-six countries voted to make the Greenwich meridian the prime meridian of the world, this still served primarily as a theoretical step that would take decades to truly put into practice. In the meantime, numerous people from diverse backgrounds began exploring the relationship of space and time and the effect of this relationship on travelers.

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Meanwhile, in the laboratory, the world’s top physicists began exploring the cause and effects of temporal disorientation on a much broader scale. For them, the earth was analogous to a train traveling along an invisible track around the sun. These scientists were interested in the space that the earth moved through and the effect of this movement and space on light. Because scientists had recently learned that light sometimes behaves as a wave, they imagined that the earth moves through a space filled with an invisible water-like substance known as ether. This ether would slow down light in a predictable manner. In *Einstein and Picasso*, Arthur Miller writes,

Since the ether was so fundamental, there ought to be a way to detect it, or else it would be mere metaphysical baggage. The agreed-upon way was to measure the velocity of light from a laboratory on the moving Earth, and it went basically as follows: Ether theories of light and electromagnetism were formulated from the viewpoint of an observer at rest in the ether. By definition, these observers always measure the velocity of light as 186,000 miles per second. Then, by mathematical means, the problem situation is transferred to a laboratory on the moving Earth. The velocity of light, so the thinking went, should differ from 186,000 miles per second by the speed of the Earth’s motion through the ether. This difference was expected manifest itself though minute but predictable changes in such phenomena as optical interference. While everyone agreed that the ether existed, the issue was whether it was at rest or some portion of it was dragged along by the moving Earth. If the ether were at rest, then the Earth’s velocity relative to it is a combination of its various motions through space. These are the Earth’s orbital velocity about the Sun, its daily rotation on its axis, and the solar system’s velocity through the universe of which little was known at the end of the nineteenth century. (61-62)

In essence, scientists were attempting to synchronize the Earth’s clock with that of the surrounding universe. The difference in the speed of light on Earth compared to the vacuum of space would tell scientists precisely how quickly the Earth is traveling through the ether on its orbital track around the Sun. The experiments performed to find this difference in velocity were known as ether-drift experiments. The problem was that

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each of these experiments failed. As Miller states, they failed “because the measured velocity of light turned out to be the same as if the Earth were actually at rest in the ether. But we know that the Earth is not at rest” (63).

To understand the failure of these experiments better, let us return to the example of the train. If a traveler on the train wanted to know how fast the train was moving to a very precise degree, he should be able to measure the time for light approaching him from both a source in front of the train and from a source behind the train to reach him. Obviously, the light coming from the source he is approaching should reach him first. He can then use the difference in the two times to find his own velocity relative to each source. However, imagine his surprise when he finds that the light from both sources always reaches him at the same time, as though he were not moving at all. This is the conclusion that was reached by each of the ether-drift experiments.

In order to deal with these failures, a physicist named H. A. Lorentz introduced a concept known as local time to explain away the difference between our perception of these events and what scientists believed must be actually happening. As Miller states, Lorentz could systematically explain their failure by employing, instead of the usual time, a strictly mathematical entity he called the “local time.” The usual time, the one that squares with our sense perceptions, is not affected by our movements. A ship’s chronometer can stay synchronized with a clock in Bristol even when the chronometer, and the ship carrying it, are halfway around the world. This assumption, a cornerstone of Newtonian science, carried over into electromagnetic theory. It is the source of prediction that the velocity of light measured on the moving Earth differs from the one measured by observers at rest in the ether.

Lorentz’s “local time” is another matter altogether, because it contains two terms. One of them is the usual time, while the other depends on the clock’s motion relative to the ether. This extra term is so extremely small as to be beyond our
perceptions, a result that was taken as further evidence for this term’s, and so, too, the local time’s, lack of any real physical time. Yet explaining the failure of the ether-drift experiments to lowest-order accuracy required hypotheses that included the local time. In this way terms could be introduced into Lorentz’s electromagnetic theory to cancel effects predicted but not measured. (65)

Lorentz was attempting to resolve the difference between perceived and predicted results by utilizing the local time relative to the observer. In this way, there would be differences in the traveler’s time relative to the time of those far away, much as there was a difference between rail time, the time observed on trains, and the time observed by disparate regions across which the train was travelling. This leads us to the similar contemporaneous exploration of space and time in literature.

Bram Stoker’s literary exploration of space and time also begins at the railway station. In The New Annotated Dracula, Klinger states,

> Although the modern system of time zones based on Greenwich was adopted at the International Meridian Conference in Washington, D.C., in 1884, only twenty-seven countries attended the conference (including Austria-Hungary), and many countries were slow to adopt the system. Central Europe was far from uniform; as late as 1910, Belgium and Holland used Greenwich time, whereas Switzerland, Italy, and central Germany used the time of fifteen degrees east of Greenwich, and France had still not converted from Paris time. The 1896 Austria “Baedeker” advises that Vienna local time is five minutes in advance of central Europe time, which is observed by the railways. (Klinger 11)

While the difference between “local times” and the time of the universe were incredibly minute in the laboratory, the difference between local times and railway time were glaring. This difference in local times led travelers to experience temporal disorientation. Furthermore, travelling outside of “civilized Europe” would increase the traveler’s sense of temporal disorientation, as inhabitants of exotic destinations often held much more relaxed perspectives of time.
The opening chapter of *Dracula* presents Harker as a traveler who becomes increasingly temporally disoriented. What begins as confusion about minutes and hours turns into confusion about the current day and even month. As he moves farther away from London, Harker gradually loses his ability to interpret temporal and spatial cues until he finally surrenders in slumber.

The novel opens with Harker offering an account of his train ride. “On 3 May in Bistritz, Jonathan Harker writes that he left “Munich at 8:35 P.M., on 1st May, arriving at Vienna early next morning; should have arrived at 6:46, but train was an hour late.” Harker is beginning the story in a state of minor temporal disorientation. His train is an hour late, and he is in the midst of a long journey. As Klinger points out,

The Notes indicate that Hawkins received a telegram from Dracula on Monday, 24 April. Harker departed the following day for Paris, arriving there early on the morning of 26 April; he left for Munich that night. In fact, the Notes are quite specific about the trains, recording an 8:35 P.M. departure from Munich (on 1 May), a 6:45 A.M. arrival in Salzburg (2 May), an 8:25 A.M. departure from Vienna (2 May), a 1:30 P.M. arrival in Buda-Pesth to Klausenburg arriving at 10:34 P.M. (2 May), an 8:00 A.M. arrival in Klausenburg (3 May), and an arrival in Bistritz at 8:00 P.M. (3 May). (Klinger 11)

Such a specific list indicates a fixation upon the temporal precision of the rail system. Including such detail in the novel would have led to an extreme sense of temporal disorientation for the reader, thereby defeating its use as a method for building unease as Harker approaches Dracula’s castle. Instead, the novel leaves a subtle hint that Harker is already confused about the time.

The difference between railway and local time creates temporal dissonance for Harker. Harker states, “Buda-Pesth seems a wonderful place, from the glimpse which I got of it from the train and the little I could walk through the streets. I feared to go very
far from the station, as we arrived late and would start as near the correct time as possible” (9). Here Klinger notes,

In fact, Harker must have run rapidly through the streets if the arrival and departure times in the Notes are correct. The train from Vienna arrived at either the West Station of the Hungarian State Railways, at the north end of the Waitzner-Ring, or the East Station at the end of Kerepeser-Strasse, depending on whether the train traveled via Marchegg or Bruck. Both lines offered express trains which made the journey in approximately five hours, matching the schedule of the Notes. However, it is possible that Harker was confused about the local time. (11)

To expand upon Klinger’s assessment, had he arrived on time, Harker would have thirty minutes to spend exploring Buda-Pesth. Harker, however, tells us that he was late. The reader can thus conclude that the difference between the railway and local time has caused Harker to err in his calculations.

The novel magnifies this temporal disparity as Harker continues his travels. As Harker moves east, he grows more frustrated at the foreign lack of concern for punctuality. He states,

I had to hurry breakfast, for the train started a little before eight, or rather it ought to have done so, for after rushing to the station at 7:30 I had to sit in the carriage for more than an hour before we began to move. It seems to me that the further East you go the more unpunctual are the trains. What ought they to be in China? (16)

In England, the punctuality of the trains helps maintain a precise sense of time among the citizens. As Harker moves East however, he encounters a system that is much less timely. In this passage he hurries, only to have to stop and wait for an hour. Apparently, this causes him to give up on keeping hourly time altogether for the rest of his journey. After this statement, he marks time in his journal only by the location of the sun, referencing time in generalities.
Furthermore, this train moves extremely slowly in comparison with the trains in England. Harker states, "All day long we seemed to dawdle through a country which was full of beauty of every kind" (19-20). Klinger notes,

The 1896 Austria "Baedeker" indicates that the journey from Klausenburg to Bistritz is only 74 miles and should take 4 3/4 hours by rail. Although the guidebook warns that trains in Austria do not generally travel faster than 25 miles per hour, the length of this journey seems excessive. (19-20)

Klinger goes on to suggest that the Harker has not actually travelled through the region and should thus be mistrusted. Alternatively, this statement fits within the emerging pattern of trains becoming increasingly unpunctual and travelling at slower and slower rates as Harker travels farther away from London. While Harker began his journey by losing track of minutes his level of disorientation soon grows to include days.

The novel again highlights Harker’s experience of temporal dissonance as he encounters a woman operating on two completely different types of calendars than his own.

…..she asked again:
“Do you know what day it is?” I answered that it was the fourth of May. She shook her head as she said again:
“Oh, yes! I know that, I know that! But do you know what day it is?” On my saying that I did not understand, she went on:
“It is the eve St. George’s Day. Do you not know that to-night, when the clock strikes midnight, all the evil things in the world will have full sway? Do you know where you are going, and what you are going to?” (24)

Being from England, Harker is referring to the date according to the English Gregorian calendar. St. George’s Day, however, falls on April 23. May 4 on the English Gregorian calendar coincides with April 22 on the Julian calendar, utilized by Transylvania at this time. The old lady accepts his date without argument, because she is more concerned with the Catholic calendar of saints, a calendar that Harker assuredly does not follow as
he later states that he is Anglican. Thus, in this short passage Harker’s daily calendar is
discounted by the old lady. He is now operating not only in a different hour, but a
different day and in fact month. Moreover, his calendar is secular in a land where the
calendar of the saints is followed much more closely.

Following this line of thought, the reader then identifies closely with Harker as he
is deprived of any means to measure time. As Harker embarks on his carriage ride, he
keeps a general track of time by the movement of the sun, but as he nears Dracula’s
castle, night falls and he is dispossessed of even natural signs to tell the time. Harker’s
temporal ignorance is brought to the foreground as he takes cues from the coach driver.
He states,

I was already thinking what I had best do, when the driver, looking at his watch,
said to the others something which I could hardly hear, it was spoken so quietly
and in so low a tone; I thought it was “An hour less than the time.” (34)

This exchange displays Harker as an outsider who is barely able to receive even
indirect clues as to the time. The driver is placed in an advantageous position to Harker
as he possesses the watch. Moreover, his statement to the other passengers suggests
that they know what time it should be according to their present location. This is not
true for Harker, who is left in the dark.

As Harker loses the ability to measure time, he also loses the ability to measure
space. Harker’s ride upon Dracula’s coach presents a supernatural sense of time that
is unlike anything encountered by mortals. This novel sets up this alternate passage of
time just before Harker leaves with Dracula as one of Harker’s companions on the first
coach whispers, “Denn die Todten reiten schnell”—(“For the dead travel fast”) (35).
This quote signals that Dracula operates on a different sort of time than living people.
According to Harker, Dracula’s coach appears to move at a rapid pace, yet goes nowhere. Harker notes that it appears they are “going over and over the same ground again” (36). As Harker experiences complete temporal disorientation, he loses all visual spatial references as well. He attempts to compensate for this loss by listening to the howling of wolves, but then he senses that he is moving in a circle. Finally, Harker falls asleep, losing any reference whatsoever.

*Dracula* suggests that temporal disorientation varies directly in relation to the distance between two coordinate systems. As *Dracula* explores the notion that temporal disorientation increases according to the spatial distance from a central location, it also attempts to provide a solution to maintaining temporal order. The novel further suggests that temporal disorientation must synchronize mechanical and natural time. As previously discussed, within the novel the West operates almost exclusively on mechanical time while the East operates on natural time. In the West, time is marked by the precision of trains operating on schedule; in the East time is kept by the rising and setting of the sun. The novel suggests that technology must be harnessed to create a communal sense of the present that synchronizes properly with natural time, echoing the difference between scientific understanding of time and experimental results of the ether-drift experiments.

In his attempt to scientifically approach the problem of temporal disorientation, Einstein also utilizes trains as a tool to help examine the quandary. He states,

We are thus led also to a definition of “time” in physics. For this purpose we suppose that clocks of identical construction are placed at the points A, B and C of the railway line (co-ordinate system), and that they are set in such a manner that the positions of their pointers are simultaneously (in the above sense) the same. Under these conditions we understand by the “time” of an event the reading (position of the hands) of that one of these clocks which is in the
immediate vicinity (in space) of the event. In this manner a time-value is associated with every event which is essentially capable of observation. (28)

In essence, Einstein is responding to the plight experienced by Harker and numerous train travelers during this time. He has to specifically stipulate that the three points on the railway must have clocks set to the same time so that one can determine the exact time of an event. Einstein then goes on to demonstrate that each of these points along the railway provides a different experience of time.

To illustrate this point, imagine that the three points of perspective are Munich, Harker’s starting point at the beginning of the novel; the Golden Krone Hotel, where Harker boards the carriage; and Dracula’s castle. Now assume that two lightning strikes occur “simultaneously.” One of these strikes, strike A, happens halfway between Munich and the hotel. The other strike, strike B, occurs halfway between the hotel and Dracula’s castle. The light from the strike A will reach an observer in Munich before the light from strike B, leading that observer to say that strike A occurred first. The light from both strikes will reach an observer at the hotel at the same time leading him to believe that the strikes occurred simultaneously. Finally, the light from strike B will reach an observer at Dracula’s castle first, so he will believe that strike B occurred first. In this way, there is no true method to tell whether or not two events are simultaneous.

Einstein continues to attack the perception of consistent nature of time using an example very closely related to the dialogue between Harker and the woman he encounters who is operating on a different calendar. According to Einstein, any two people moving relative to each other are operating on different clocks. To understand this, imagine that a candle is lit on one side of Harker’s train carriage, directly across from a mirror. The time it takes for the light to travel to the mirror and back is twice the
distance from the candle to the mirror divided by the speed of light. For an observer standing outside however, the motion of the train will cause the distance the light travels to expand. This will make time slow for this observer, as the speed of light remains constant. In this way, it is as though the two observers are operating on different clocks or calendars.

In Harker’s calendar discussion with woman, the novel demonstrates the subjective nature of chronological measurements. Deciding something as simple as the date depends on the calendar used, and can be heavily influenced by an individual's religious beliefs. While Einstein does not go into detail about the different calendars in use at the time, he does prove that individuals riding on a train will experience time differently from individuals who are stationary. He states,

> Events which are simultaneous with reference to the embankment are not simultaneous with respect to the train, and *vice versa* (relativity of simultaneity). Every reference-body (co-ordinate system) has its own particular time; unless we are told the reference body to which the statement of time refers, there is no meaning in a statement of the time of the event. (32)

Because the woman and Harker are utilizing different coordinate systems or calendars, their determinations of the date are meaningless to one another. Harker’s assertion that it is the fourth of May proves meaningless to the woman. Likewise, her assertion that it is the eve of St. George’s Day does not affect Harker as it does the woman.

In this way, the novel suggests that temporal disorientation leads to spatial disorientation, a topic Einstein later scientifically explores in his theories of relativity. Einstein demonstrates that individuals operating in different coordinate systems will experience distance and time differently. Specifically, he states that spatial
measurements taken by an individual at rest will vary from the measurements taken by a traveler on the train. He states,

Thus the length of the train as measured from the embankment may be different from that obtained by measuring in the train itself. This circumstance leads us to a second objection which must be raised against the apparently obvious consideration of Section VI. Namely, if the man in the carriage covers the distance \( w \) in a unit of time—*measured from the train*,—then this distance—*as measured from the embankment*—is not necessarily also equal to \( w \). (35)

Einstein however, does not read this inequality as an indictment of either perspective’s validity, but a necessary consequence of nature. In fact, both perspectives remain intrinsically valid. Furthermore, space and time are not separate entities. As Kern summarizes, “All events should be conceived in a four-dimensional continuum represented by coordinates \( x, y, z, \) and \( t \), which are to be understood as the same kind of units, not entirely spatial or entirely temporal, not distances or durations but space-time intervals” (206). According to Einstein, space is measured differently by those who are stationary and those who are in motion. In the novel, space-time is measured differently by mortals and by the undead.

Moreover, according to Einstein, objects and people in motion experience a larger present than objects at rest. In the twelfth chapter of his Special Theory of Relativity, Einstein addresses time dilation. \( K \) in the following equation refers to a co-ordinate system corresponding to an embankment, while \( K’ \) refers to a co-ordinate system corresponding to a moving train. \( v \) represents the velocity of the train, while \( c \) represents the velocity of light.

Let us now consider a seconds-clock which is permanently situated at the origin \((x'=0)\) of \( K' \). \( t'=0 \) and \( t'=1 \) are two successive ticks of this clock. The first and fourth equations of the Lorentz transformation give for these two ticks:
\[ t = 0 \]

and

\[ t' = \frac{x}{\sqrt{x - \frac{v^2}{c^2}}} \]

As judged from \( K \), the clock is moving with the velocity \( v \); as judged from this reference-body, the time which elapses between two strokes of the clock is not one second, but \( \sqrt{x - \frac{v^2}{c^2}} \) seconds, \( i.e. \) a somewhat larger time. As a consequence of its motion the clock goes more slowly than when at rest. Here also the velocity \( c \) plays the part of an unattainable limiting velocity. (44)

In this passage, Einstein reveals that for objects moving relative to each other, time slows down. Movement through space varies indirectly with respect to movement through time.

Throughout \textit{Dracula} the vampire hunters attempt to slow time by utilizing technology to create an expanded present. Moreover, they attempt to shift their demarcations of time from the man made mechanical units of time to natural events such as the setting of the sun. In so doing, they attempt to create a communal sense of the present.
CHAPTER III

THE SEARCH FOR A COMMUNAL PRESENT

While temporal disorientation affected travelers attempting to adjust to temporal differences between spatial regions, it also affected those trying to acclimate themselves to the ever increasing pace of English society. Racing along at breakneck speed, citizens of the late nineteenth century kept diaries and invented new tools to help them capture and record brief moments of time. This quick pace is evident within *Dracula* as well. In “Pollution and Redemption in *Dracula*,” ⁷ Anne McWhir states,

The world of the novel is busily, even obsessively, modern; between episodes, Van Helsing travels back and forth across the channel, Mina types furiously, Seward dictates professional concerns and personal feelings into his phonograph. Technology helps to outwit Dracula, who destroys the original records of his enemies unaware that Mina has prepared a typescript! The modern world races along at break-neck speed, confidently relying on Kodaks and typewriters and trains and shorthand, while Dracula emerges from centuries of waiting and makes his way to England by wind and water. (31)

While McWhir goes on to discuss the moral organization of characters and events within *Dracula*, I want to focus on her description of *Dracula* as a novel in constant motion. The rapid pace of the vampire hunters is contrasted with Dracula’s sense of time. The novel, like its contemporary physicists, is concerned with the ability to properly measure time from a collaboration of instruments in motion. Dracula presents his centuries-long history by noting turning points of civilizations. The novel argues that this form of narrative is outdated and unreliable. In order to defeat Dracula, the vampire hunters present a new narrative form. Their form consists of a series of individual detailed snapshots of time sewn together to form a super accurate account of events.

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Dracula is, at its essence, a detailed account of the battle of two narrative forms. Dracula embodies the traditional linear narrative form. He traces his lineage back hundreds of years, and he finds strength in this long history. The vampire hunters, meanwhile, present their narrative as a magnified present. By combining their experiences of the present, they are able to construct a detailed account of the present that becomes more powerful than Dracula’s long history.

The novel offers instructions for how the novel itself should be read in Harker’s notes he delivers to Dracula. He states,

At Purfleet, on a by-road, I came across just such a place as seemed to be required, and where was displayed a dilapidated notice that the place was for sale. It is surrounded by a high wall, of ancient structure, built of heavy stones, and has not been repaired for a large number of years. The closed gates are of heavy old oak and iron, all eaten with rust.

The estate is called Carfax, no doubt a corruption of the old Quatre Face, as the house is four-sided, agreeing with the cardinal points of the compass. It contains in all some twenty acres, quite surrounded by the solid stone wall above mentioned. There are many trees on it, which make it in places gloomy, and there is a deep, dark-looking pond or small lake, evidently fed by some springs, as the water is clear and flows away in a fair-sized stream. The house is very large and of all periods back, I should say, to medieval times, for one part is of stone immensely thick, with only a few windows high up and heavily barred with iron. It looks like part of a keep, and is close to an old chapel or church. I could not enter it, as I had not the key of the door leading to it from the house, but I have taken with my Kodak views of it from various points. The house had been added to but in a very straggling way, and I can only guess at the amount of ground it covers, which must be very great. There are but few houses close at hand, one being a very large house only recently added to and formed into a private lunatic asylum. It is not, however, visible from the grounds. (55-6)

In this passage, Carfax stands in for Dracula and his narrative form. The “solid stone wall” represents the long history of this form. As the passage states, this style of narrative has become dilapidated and is unable to reflect the fast pace time of the present. The four-sided house points to Dracula’s history as he later inquires, “Who
more gladly than we throughout the Four Nations received the ‘bloody sword,’ or at its warlike call flocked quicker to the standard of the King?” (67). The many trees symbolize the coffins that Dracula scatters throughout England, hence adding a sense of gloom. The “deep, dark-looking pond or small lake” refers to the blood within Dracula fed by “springs” of victim’s blood, but it also alludes to the old narrative form. That form takes bits of truth to form a murky whole.

*Dracula*’s narrative form provides a literary example of the foundational rule of contemporary architecture. In 1896, American architect, Louis Sullivan argued “form ever follows function.” In this case, however, the narrative form is to be read as “Kodak views of [the narrative] from various points.” From stenographic journal entries to phonographic recordings to newspaper articles, the narrative has “been added to but in a very straggling way.” Instead of a seamless story, the narrative of *Dracula* unfolds as a sequence of “Kodak views” taken from multiple moving trains. This form functions to expand the present. As multiple characters present accounts of overlaps in time, the present is stretched. Other times, the characters clearly reference the present tense in their writing or speech, effectively smearing the sense of the present across a journal entry. This form works to spread the present much as Einstein would later predict that time dilation occurs for moving travelers. The vampire hunters utilize this effect to create a spacious temporal present that can compete with the long linear history supporting Dracula.

Einstein later demonstrates that people in motion do experience time more slowly than people at rest. Just as the form of the novel works to expand the present for the vampire hunters who are racing around, time dilation truly occurs as speed increases.
Essentially, the present increases while the past and future decrease. I will first explain how the novel expands the present and then return to Einstein’s theory.

The vampire hunters utilize various forms of media and technology to record the events within the narrative. Recently developed stenography, the typewriter, and phonograph are used to construct the novel. Moreover, the narrative weaves together journal entries, newspaper articles, ship logs, and occasional patois to provide multiple perspectives and expand the present. Mina speaks to this argument in her opening paragraph when she states, “I shall try to do what I see lady journalists do: interviewing and writing descriptions and trying to remember conversations. I am told that, with a little practice, one can remember all that goes on or that one hears said during a day” (102). By remembering all that goes on in a day, Mina is in effect preserving the events and expanding an account of the present so that it stretches across more than a moment or even a single day. This statement becomes even more important when we realize that Mina is responsible for transcribing all of the information into the single typescript provided in the form of the novel.

If one can truly attain Mina’s goal of accurate reporting “with a little practice,” then Mina should quickly become an expert. She states,

I have been working very hard lately, because I want to keep up with Jonathan’s studies, and I have been practicing shorthand very assiduously. When we are married I shall be able to be useful to Jonathan, and if I can stenograph well enough I can take down what he wants to say in this way and write it out for him on the typewriter, at which also I am practicing very hard. He and I sometimes write letters in shorthand, and he is keeping a stenographic journal of his travels abroad. (101)

Within this passage, Mina mentions “shorthand” or “stenography” four times in three sentences. One can quickly ascertain that stenography has become an integral part of
her everyday life. This embedded nature of stenography is vital, because it demonstrates a different sort of world-view. Mina is a character in constant motion, taking stenographic “photographs” along the way.

Jonathan Harker also relies heavily on stenography in his reporting within the novel. The novel opens with a heading stating that the text is from “Jonathan Harker’s Journal— (kept in shorthand)” (9). Harker later speaks of this journal as a powerful time capsule. He states,

You know I have had the brain fever, and that is to be mad. The secret is here, and I do not want to know it. I want to take up my life here, with our marriage….Are you willing, Wilhelmina, to share my ignorance? Here is the book. Take it and keep it, read it if you will, but never let me know; unless, indeed, some solemn duty should come upon me to go back to the better hours, asleep or awake, sane or mad, recorded here. (174)

In this passage, the physical book holds time. As Harker gives the book to Mina, he is moving farther away from that time. Without a record of that time, it is as though the events of that time never occurred. However, Harker does note that the book will allow him “to go back to the better hours” if that is what he is called to do. These hours have been preserved so that the time when they occurred may now be stretched into the future.

Moreover, Harker later utilizes this stenography to provide an excellent example of writing in motion. In Harker’s journal entry for 3 October, the stretching of the present is brought to the foreground. He begins in present tense, “As I must do something or go mad, I write this diary. It is now six o’clock, and we are to meet in the study in half an hour and take something to eat; for Dr Van Helsing and Dr Seward are agreed that if we do not eat we cannot work our best” (398). Harker continues his narrative for a few
pages before returning us to the train at the closing of this particular journal entry. He writes,

    It was with a heavy heart that we sought the station and just caught the train, which was steaming in as we reached the platform.
    I have written this in the train. (409)

The placing of this final comment alone and at the end of the entry signals that it is vital to understand the nuance of the previous passage. In this case the novel is exploring the juxtaposition of being motionless in relation to the train while speeding across the countryside. Harker’s sense of the present, his “six o’clock,” is smeared along the railway.

Dr. Seward utilizes technology to preserve the present with even more clarity. He creates his journal by speaking and recording his voice on graphophone cylinders. While only the transcript of these recordings is presented to the reader by Mina’s hand, the text is granted more authority through the use of this technology. When Mina first sees the phonograph she even exclaims, “Why, this beats even shorthand! May I hear it say something?” (318). Moreover, when the graphophone was invented it was declared to be a tool specifically for recording moments in time. Klinger notes,

    In a paper read on 7 September 1888 by Henry Edmunds….to the Bath meeting of the British Association for the Advancement of Science, Edmunds crowed: “….A child may work it and communicate to those who love it, its childish prattle; or preserving the small cylinder refer in after life to how it spoke. Business men may carry on negotiations, recording each word spoken, preventing misunderstandings as to what was said. Attached to the telephone, even the fleeting words that be recorded for future reference….” (112)

In these statements Edmunds is extolling the usefulness of the graphophone specifically for its accurate recording and for its ability to capture words spoken in time for future reference. The present is no longer fleeting, but may be preserved on each cylinder.
Moreover, these moments are then expanded as the listener takes time to listen to the contents which takes up no time simply being stored.

The novel clearly argues that the power wielded by the phonograph is strong. When Mina Harker listens to Dr. Seward’s diary, the novel discusses her close connection with the phonograph in detail:

He brought back the phonograph from my room, and I took my typewriter. He placed me in a comfortable chair, and arranged the phonograph so that I could touch it without getting up, and showed me how to stop it in case I should want to pause….I put the forked metal to my ears and listened. (321)

Mina’s encounter with the phonograph is presented as a much more intimate encounter than one would have with written text. She has to prepare to take in the information from the phonograph by sitting in a comfortable chair where she can touch it and stop it if it becomes too intense. Moreover, she does not read the text, but the phonograph transmits the voice through a forked metal against her ears. Meanwhile, she states specifically that she was taught how to pause the playback, in case she needs to further expand the time.

In a less direct fashion, the novel extends the life of an old sailor by preserving his patois. The old sailor, Mr. Swale, seems to speak from a time forgotten in chapter six.

I wouldn’t fash masel’ about them, miss. Them things be all wore out. Mind, I don’t say that they never was, but I do say that they wasn’t in my time. They be all very well for comers and trippers, an’ the like but not for a nice young lady like you. Them feet-folks from York and Leeds that be always eatin’ cured herrin’s an’ drinkin’ tea an’ lookin’ out to buy cheap jet would creed aught. I wonder masel’ who’d be bothered tellin’ lies to them—even the newspapers, which is full of fool-talk. (123)

In this passage, Mr. Swale is discounting the legend that Mina has heard as outdated and foolish talk. Meanwhile, his own speech preserves an earlier way of speaking. In
this way, when the old sailor dies, his patois should die as well. However, the power of Mina’s stenography and documentation is illustrated as Mr. Swale’s speech survives in her text.

The novel argues that all of these perspectives or photographs can be sewn together to create a powerful sort of time capsule. Each entry is dated and placed in such a way as to emphasize chronological order. In this case, Mina acts as the champion of standardization as she converts all of the entries into typed text, creating a sort of collection of temporal episodes. In fact, this is the method the protagonists utilize to ultimately defeat Dracula. As they collect more and more documented episodic accounts, they create a textual body of the present rich enough to rival Dracula’s long historical narrative. Eventually, Mina is able to connect their narrative with that of Dracula through telepathy, enabling the hunters to physically catch up to him.

In the novel’s final chapter, the protagonists utilize a combination of mechanical and natural time to present the narrative and to track Dracula. Their journal remains organized by the English Gregorian calendar, but entries are now subdivided by time of day, i.e. morning, afternoon, and evening. Moreover, the characters now organize their actions according to natural events. For instance, on 2 November at night Mina Harker states, “At sunset time he hypnotized me, and he says that I answered as usual ‘darkness, lapping water and creaking wood;’ so our enemy is still on the river” (482). In fact, they hypnotize Mina each evening in accordance with the sunset.

Abraham Van Helsing appears most attentive of the natural demarcations of time. On 4 November he states, “It is morning, and I write by a fire which all the night I have kept alive—Madam Mina aiding me. It is cold, cold; so cold that the grey heavy
sky is full of snow, which when it falls will settle for all winter as the ground is hardening to receive it” (483.). The novel dates this passage according to the English Gregorian calendar and yet the text speaks directly about natural temporal events such as the transition from night to morning, the “grey heavy sky” offering winter’s first snow, and the hardening of the ground with the transition to winter. This poetic description demonstrates that Van Helsing understands this moment in time. Even with the cloudy sky, there is no mention of confusion about the time of day.

Most importantly, the slaying of Dracula is timed to coincide precisely with the setting of the sun. On 6 November Mina states,

As I looked, the eyes saw the sinking sun, and the look of hate in them turned to triumph. But, on the instant, came the sweep and flash of Jonathan’s great knife. I shrieked as I saw it shear through the throat; whilst at the same moment Mr. Morris’s bowie knife plunged into the heart. (496)

The synchronization of Jonathan’s and Mr. Morris’s knives stabbing Dracula demonstrates that neither character is experiencing any sort of temporal disorientation. The setting of the sun tells both men that now is the instant to act. Moreover, it points to an essential element of the perspective of simultaneity at this time.

Inventions in the late nineteenth century led people to a new understanding of time. A perceived certainty of the universal nature of the time could be found in the present. Specifically the telephone, as Kern documents, was instrumental in bringing about this paradigm shift. He states, “Within a few years of its invention in 1876 the telephone was used for public ‘broadcasts.’ In 1879 sermons were broadcast over telephone lines in the United States, and in 1880 a concert in Zurich was sent over telephone lines fifty miles to Basel” (69). The telephone allowed people separated by

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large distances to share the present. A new sense of duality pervaded society’s view of the experience of simultaneity during this time. Events were now experienced simultaneously by people at the site of the event and by people far away. This created a sort of solution to the temporal difference and disorientation experienced by people across various time zones.

The coinciding of Dracula’s death with the sunset reinforces this universal nature of the present. The novel clearly states that the vampire hunters act in concert, but the reminder of the setting sun allows the camera-like perspective to pan out and see this as an event which is shared by mankind. The disconnected histories of Dracula and the vampire hunters have come together to create a moment shared by all.

As *Dracula* challenges the traditional linear form of narrative, Einstein challenges classical physics through relativity. In “The Lorentz Transformation,” chapter eleven of Einstein’s *Special Theory of Relativity*, Einstein imagines an event observed from both a moving train and a stationary observer on the embankment. He states,

How are we to find the place and time of an event in relation to the train, when we know the place and time of the event with respect to the railway embankment? Is there a thinkable answer to this question of such a nature that the law of transmission of light *in vacuo* does not contradict the principle of relativity? In other words: Can we conceive of a relation between place and time of the individual events relative to both reference-bodies, such that every ray of light possesses the velocity of transmission $c$ relative to the embankment and relative to the train? (37)

And later,

Up to the present we have only considered events taking place along the embankment, which had mathematically to assume the function of a straight line. (37)

In this passage, Einstein tests his theory against a more complex scenario than classical physics was able to accurately handle. Previous experimental results involving
light propagation only proved precise when handling simplified linear events. In “Relativity and the Camera: An Observational Approach to the Lorentz Formulae in Special Relativity,” J. Riversdale Colthurst asserts, “The essence of relativity lies in the comparison and combination of observations by different observers, so as to obtain results on which they can agree” (455). Scientists attempted to reconcile the difference between predicted and actual results by determining the interaction between earth and the ether in “ether-drift experiments” as previously discussed. Einstein, however, uses relativity to prove that one can work within a single consistent coordinate system to mathematically describe and predict the propagation of light to both stationary and moving receptors. Moreover, Einstein demonstrates that this mathematical description lies in the equations known as the Lorentz transformation. Observing an event from multiple perspectives proves essential to Einstein’s theories of relativity, just as it remains vital for the vampire hunters in *Dracula*.

The busy characters of *Dracula* work diligently to document each moment, thereby expanding and preserving the present. They utilize stenography, the graphophone, Kodak cameras, and the typewriter to record events. Mina creates an organized, detailed collection of texts including journal entries, newspaper articles, epistles, articles, ship logs, and even the patois of an old sailor in an attempt to create a textual account of the present that outweighs Dracula’s historical narrative. Attempts to expand the sense of the present are later realized in Einstein’s theory of special relativity as he uses the first and fourth equations of the Lorentz transformations to prove that the present is increased for people in motion.
Similar to the synchronization between the defeat of Dracula and the setting of the sun, Einstein’s theories of relativity were proved experimentally during an eclipse of the sun. In 1919 Sir Arthur Eddington and his research team witnessed a change in the position of stars visually near the sun, demonstrating that the sun’s gravity was bending space and thus the path of light travelling from the stars.

The novel exposes defects in man’s measurement of time and suggests that this measurement should be reconciled with the temporal cues of nature. As Harker moves farther away from London, this chasm between man-made and natural time increases until it overwhelms him. Van Helsing reintroduces the importance of natural time and the vampire hunters eventually defeat Dracula at a moment coinciding with the setting of the sun. Einstein later recognizes the difference between human and natural perceptions of time and attempts to reconcile this difference through his theories of relativity. Interestingly, his theories are proved correct coinciding with the hiding of the sun in a solar eclipse.
CHAPTER IV

THE AWARENESS AND EXPANSION OF THE INDIVIDUAL’S PRESENT

When examining the heavy influence of colonization on late nineteenth century British literature, scholars often focus upon racial conflicts and the influence of the “other.” While this focus is certainly justified, it often leads to a diminution of other types of clashes accompanying colonization. In this chapter, I shift the focus to some of the scientific challenges that faced colonizing nations, specifically the treatment of time. Colonization forced the British to question their own scientific views and abilities. Entering other lands with firm understandings of an orderly systematic nature of space and time, many found that their “universal” physical laws no longer applied. Furthermore, I demonstrate that these clashes on the frontier of science would ultimately lead to Einstein’s theory of relativity.

By the nineteenth century maritime personnel were keenly aware of the connection between space and time. A century earlier, Queen Anne had issued the Longitude Act offering prize money for methods developed to determine longitude accurately (Sobel and Andrews 66). Numerous methods were attempted, from making a wounded dog yelp to observing the passing of Jupiter’s moon. By early in the nineteenth century however, the accepted method was to find longitude by chronometer. In order to determine a ship’s longitudinal position, the navigator used a chronometer to determine the temporal difference between their current position and a specific location on the mainland. This temporal difference would in turn allow them to calculate their longitudinal position. According to Sobel and Andrews, “Half a degree of longitude equals two minutes of time.” Sea travelers in the late nineteenth century dealt
daily with the connection between space and time. Joseph Conrad served in the merchant navy for nearly twenty years, embedding this connection into his consciousness. Thus, it should be no surprise that fifteen years before Einstein would publish his special theory of relativity, authors such as Joseph Conrad were using literature to explore the relationship between space and time.

*Lord Jim*, a novel whose protagonist makes his living upon the sea, is itself shaped by this relationship between space and time. The narrative’s structure and plot work in tandem to specifically explore and examine temporal perception versus reality. The novel argues that modern atomistic views of time are incompatible with natural time. As Conrad wrote in a letter to the *New York Times* (1901),

> The only legitimate basis of creative work lies in the courageous recognition of all irreconcilable antagonisms that make our life so enigmatic, so burdensome, so fascinating, so dangerous—so full of hope. . . . [The] barren struggle of contradictions assumes the dignity of moral strife.\(^9\)

Numerous scholars have focused on the moral dilemmas pervading the text. In this chapter, however, I want to focus on the contradictions between European and non-European views of time, and between man-made and natural systems of marking time. While these contradictions do not stand on the foreground as prominently as in Conrad’s *The Secret Agent*, they do rise to the surface several times throughout the novel. Moreover, I argue that temporal tensions held in place throughout the novel, namely a continuous versus atomistic nature of time, are the same challenges that later faced Einstein as he attempted to understand the relationship between time and space. This leads to my argument in the following chapter, specifically that through *Lord Jim*,

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Conrad creates a new type of space holding surprising similarities to the space later discussed in Einstein’s general theory of relativity.

*Lord Jim* consistently maintains a dissonance between natural and modern perceptions of time. The novel sets these systems up in two distinct manners. It expresses the natural temporal perception as the view that time is continuous. In this view, the past, present, and future are all seamlessly connected and inseparable. Characters such as the Malaysian pilgrims and the natives of Patusan share this perspective. Moreover, the novel sets this perspective as the antithesis of the modern perspective of time. In the modern perspective of time, essential to seafarers, time is atomistic. Sailors must be able to make critical decisions in the moment, without worrying about the past or future. Such ability proves vital if captains are to follow a maritime code of ethics that includes going down with the ship.

The novel displays the conflict between these two perspectives early on. The Malaysian pilgrims on the *Patna* maintain this perspective. In “Seeing the Animal: Space and Movement in Joseph Conrad's *Lord Jim,***10 Sanjay Krishnan discusses the following episode:

[Jim] stood on the starboard side of the bridge, as far as he could get from the struggle for the boat, which went on with the agitation of madness and the stealthiness of a conspiracy. The two Malays had meantime remained holding to the wheel. Just picture to yourselves the actors in that, thank God! Unique episode of the sea, four beside themselves with fierce and secret exertions, and three looking on in complete immobility, above the awnings covering the profound ignorance of hundreds of human beings, with their weariness, with their dreams, with their hopes, arrested, held by an invisible hand on the brink of

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annihilation…. These beggars by the boat had every reason to go distracted with funk. Frankly, had I been there I would not have given as much as a counterfeit farthing for the ship’s chance to keep above water to the end of each successive second. (60)

Krishnan states that the Malaysian pilgrims in this episode act as animals, unable to anticipate their fate. In reality, however, these voyagers are displaying a different perspective of time not necessarily inferior to the modern perspective. For these pilgrims, time is continuous and their death will be succeeded by an eternal afterlife in paradise. Meanwhile, the passage also contains the key to understanding the modern temporal perspective.

This modern perspective views time as atomistic. Marlow, the narrator of the preceding passage, concentrates on moments of time in his description, filling it with frozen images of the pilgrims. He states, “Just picture to yourselves…. three looking on in complete immobility…. arrested” (61). To Marlow, a seafarer, these pilgrims lack the ability to react within the moment. He goes on, “Frankly, had I been there I would not have given as much as a counterfeit farthing for the ship’s chance to keep above water to the end of each successive second” (emphasis mine) (62). The modern temporal perspective moves along a path divided into individual seconds.

Much of the novel presents the ability to act in the moment as a way to demonstrate power over nature, while conversely displaying the inability to actively command each moment as powerless against nature. Moreover, it portrays several events and images that challenge Jim’s ability to work in atomistic time. This is portrayed as a weakness throughout the novel and ultimately leads to Jim’s death as he is unable to disconnect the present moment from his past.
Jim begins the novel unable to master this perspective of time. In the first chapter, the novel places Jim at the top of the class among his fellow officers-in-training of the mercantile marine. From this position, however, he becomes a target. Nature demonstrates his weakness, manifested through his inability to react in a temporal fashion.

While Jim has learned “a little trigonometry” and navigation, he is powerless against nature. After setting up the scene by noting Jim’s excellent standing among his colleagues, the novel describes the talk of the sailors as “babel,” conjuring images of a group who mistakenly imagine themselves as omnipotent. The novel furthers this comparison by using nature to scatter the boys into chaos. It is Jim, however, who takes the brunt of the admonition in his inability to react in time.

It was the dusk of a winter’s day. The gale had freshened since noon, stopping the traffic on the river and now blew with the strength of a hurricane in fitful bursts that boomed like salvoes of great guns firing over the ocean. The rain slanted in sheets that flicked and subsided, and between whiles Jim had threatening glimpses of the tumbling tide, the small craft jumbled and tossing along the shore, the motionless buildings in the driving mist, the broad ferry-boats pitching ponderously at anchor, the vast landing-stages heaving up and down and smothered in sprays. The next gust seemed to blow all this away. The air was full of flying water. There was a fierce purpose in the gale, a furious earnestness in the screech of the wind, in the brutal tumult of earth and sky, that seemed directed at him, and made him hold his breath in awe. He stood still. It seemed to him he was whirled around. (Conrad 5)

This scene demonstrates Jim’s inability to handle atomistic time. The sheer power of nature within this scene overwhelms Jim. Again, images of immobility accompany the inability to master time. The stillness and quietude first perceived in “the dusk of a winter’s day” is quickly dashed against the rocks as hurricane winds boom like great guns. Man-made items are displayed as powerless against the power of nature. River
traffic is stopped. Slanted rain falls across motionless buildings while boats bounce up and down in the waves. In a single gust, all of this seems to be blown away. Moreover, the passage states that this “brutal tumult of earth and sky” was directed at Jim. His sense of location in the world is disrupted. Jim is frozen in time as nature swirls around him. All Jim can do is stand still, and yet he still feels whirled around.

One of the most important figures within Lord Jim, Stein, expresses great respect for the power of nature. He states,

“Marvellous!' he repeated, looking up at me. ‘Look! The beauty—but that is nothing—look at the accuracy, the harmony. And so fragile! And so strong! And so exact! This is Nature—the balance of colossal forces. Every star is so—and every blade of grass stands so—and the mighty Kosmos in perfect equilibrium produces—this. This wonder; this masterpiece of Nature—the great artist.’ ….

‘Sometimes it seems to me that man is come where he is not wanted, where there is no place for him; for if not, why should he want all the place?’” (126)

Stein argues that man cannot overpower nature, and yet he gets caught up in describing his proudest moment, when he feels that he grasped power over nature for an instant. He speaks here of an episode when he captured an extremely rare butterfly. He states,

One step. Steady. Another step. Flop! I got him! When I got up I shook like a leaf with excitement, and when I opened these beautiful wings and made sure what a rare and so extraordinary perfect specimen I had, my head went round and my legs became so weak with emotion that I had to sit on the ground. I had greatly desired to possess myself of a specimen of that species when collecting for the professor. I took long journeys and underwent great privations; I had dreamed of him in my sleep, and here suddenly I had him in my fingers—for myself! In the words of the poet….

“So halt’ ich’s endlich denn in meinen Handen, 
Und nenn’ es in gewissem Sinne mein.”

11 “I hold it, then, at length within my hands,/ And in a certain sense can call it mine.” (Goethe, Torquato Tasso, I, iii, 393-394, from the translation by Anna Swanwick, 1882.)
Stein describes his obsession with capturing this butterfly. Moreover, his ability to capture and control this specimen of nature brings about a sense of euphoria. Finally, Stein’s poetic quotation reveals that his almost maniacal craving could only be satiated by his possession of and dominance over the butterfly. This is the same obsession that intoxicated European society as they strove to demonstrate dominance by recording and measuring space and time. Just as Stein filled his life with “his books and his collection, classing and arranging specimens, corresponding with entomologists in Europe, writing up a descriptive catalogue of his treasures,” so did Europe spend enormous energy mapping and dividing space, and attempting to synchronize clocks across the western hemisphere.

While the novel provides little detail about Stein’s beginnings, the European obsession with demonstrating power over space and time has been well documented. Kern reminds us that Newton’s calculus “conceived of time as a sum of infinitesimally small but discrete units,” and that clocks were constant visual reminders of this atomistic nature as they did not have a sweeping second hand until 1916. Moreover, through efforts such as the International Meridian Conference in 1884, countries attempted to systematically bring spatial and temporal order to the world. Power accompanies the ability to measure, and scientists were working to more precisely measure space and time around the globe. Rigid spatial and temporal units of measurement allowed scientists to enjoy a new sort of dominance over the world.

Kern goes on to explain,

In the late 1870s two pioneers of the cinema studied atomized movement by means of a series of still photographs. Eadweard Muybridge recorded the motion of a galloping horse by setting up some cameras in line along the course with a thin wire strung across the track that triggered the shutter as the horse ran
by. He went on to make sequential photographic studies of human and animal movements. In 1882 the French physician E. J. Marey began to study movement with a technique he called chronophotography—literally, the photography of time: "a method which analyzes motions by means of a series of instantaneous photographs taken at very short and equal intervals of time." Marey was particularly interested in the aerodynamics of flight and developed an apparatus for photographing birds simultaneously from three different points of view. He believed that the best way to understand motion was to break it up into parts and then reassemble them into a composite picture or plastic model. (21)

Like Stein, these men are utilizing science to study nature. As Stein captures his butterflies and preserves them in display cases, these men capture their specimens in photographs for study. As Stein has broken down the event of capturing his butterfly into individual moments, Muybridge and Marey are studying behavior by breaking down movement into atomistic moments in time. In the age of photography and cinema, each individual moment matters.

In *Lord Jim*, Marlow also expresses the benefit of being able to focus on a single moment in time. His use of a mental image study of the French lieutenant is akin to Muybridge and Marey’s use of photographs to study birds. In retelling his conversation with the Frenchman, he states

I kept him company; and suddenly, but not abruptly, as if the appointed time had arrived for his moderate and husky voice to come out of his immobility, he pronounced, ‘Mon Dieu! How the time passes!’ Nothing could have been more commonplace than this remark; but its utterance coincided for me with a moment of vision. It’s extraordinary how we go through life with eyes half shut, with dull ears, with dormant thoughts. Perhaps it’s just as well; and it may be that it is this very dullness that makes life to the incalculable majority so supportable and so welcome. Nevertheless, there can be but few of us who had never known one of these rare moments of awakening when we see, hear, understand ever so much—everything—in a flash—before we fall back again into our agreeable somnolence. (87)

Marlow goes on to list numerous details of the Frenchman’s appearance which he acquired during this moment. However, in this one section, we see the tension between
the continuous feeling of time passing and the conscious decision to stop and focus on a brief moment in time. Interestingly, he suggests that the Frenchman is moving in synchronization with natural time stating, “the appointed time had arrived for his moderate and husky voice to come out of his immobility.” Furthermore, his “immobility” is the same term utilized to describe Jim or the pilgrims when they are not working in atomistic time.

The novel quickly brings Jim’s inability to master the moment again to the forefront as he is training. During this training two ships collide, sending sailors in a scramble past him, trying to help. Jim, however, stands still until it is too late.

“Lower away!” He saw the boat manned, drop swiftly below the rail, and rushed after her. He heard a splash. “Let go; clear the falls!” He leaned over. The river alongside seethed in frothy streaks…. A yelling voice in her reached him faintly: “Keep stroke, you young whelps, if you want to save anybody! Keep stroke!”….. Jim felt his shoulder gripped firmly. “Too late, youngster.” The captain of the ship laid a restraining hand on that boy, who seemed on the point of leaping overboard, and Jim looked up with the pain of conscious defeat in his eyes. The captain smiled sympathetically. “Better luck next time. This will teach you to be smart.” (6)

Again Jim is frozen in time while those around him spring into action. By the time he realizes what is happening, it is too late. The other men are able to react to the moment. Their sense of time continues to be separated by their synchronized strokes as they rush toward the scene of the collision. For Jim, however, the moment is connected to both the time preceding and following the event so that he appears motionless.

The novel does not always maintain the position that the modern temporal perspective is superior to the natural view of time. Later on the Patna, Jim displays an understanding of the necessity to act within the moment, but is unable to execute this
task. Having learned from the episode on the training ship, Jim struggles to keep up with time. As Jim believes the *Patna* is rapidly sinking, he panics.

You must remember he believed, as any other man would have done in his place, that the ship would go down at any moment; the bulging rust-eaten plates that kept back the ocean, fatally must give way, all at once like an undermined dam, and let in a sudden and overwhelming flood. He stood still looking at these recumbent bodies, a doomed man aware of his fate, surveying the silent company of the dead. They were dead! Nothing could save them! There were boats enough for half of them perhaps, but there was no time. No time! No time!

(53)

In reality, there is plenty of time. The sleeping pilgrims are at peace as their coordinate system is aligned with that of the Patna and of nature. Jim, on the other hand, perceives the future on a trajectory to achieve perfect disaster, and he panics. This passage emphasizes the role of temporal misrecognition in disrupting Jim’s behavior. He claims that his actions are a direct result of his belief that the pilgrims would die at any moment.

In foreshadowing Jim’s death through Brierly’s suicide, the novel places the blame on temporal rejection. Randall Stevenson comments on this in “Greenwich Meanings: Clocks and Things in Modernist and Postmodernist Fiction.” He states,

Yet there is evidence in Conrad’s fiction, *The Secret Agent* included, to suggest its author at least recognized (perhaps prepared after all by that early career at sea, and at any rate well in advance of other modernist writers) the kind of stresses imposed on the “total human personality” by great and perfect new systems Greenwich had helped impose on modern life. Something of this is suggested in *Lord Jim* when Captain Brierly neatly charts his ship’s position “with a tiny cross and [...] the date and time” then carefully ties his “gold chronometer watch”, a reward for outstanding service, to the rail of his ship and jumps overboard to lose himself for ever in the vastness of the sea. (130)

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Stevenson then turns his attention back to The Secret Agent. It is important for this discussion, however, to examine Brierly’s actions more closely. As Brierly charts his ship’s position the novel demonstrates that he is connected to a specific location and time. Moreover, Brierly was rewarded for outstanding service by receiving an instrument that would further help him determine his specific place and time. By leaving the chronometer behind, and losing “himself for ever in the vastness of the sea,” Brierly is suggesting that happiness can only be found by escaping from the man-made notions of time and space. Furthermore, his actions demonstrate an attempt to surrender to nature, and that this surrender must include the abandonment of human attempts to chart the earth and time.

Later, Jim moves to Patusan. The novel presents Patusan as a timeless land. Marlow remarks upon reading Jim’s letter from Patusan, “The Fort, Patusan.” No date, as you observe. What is a number and a name to a day of days? (207). The people of Patusan mark time by natural events, not second by second. The novel suggests that even within Patusan, however, Jim is reluctant to admit that he cannot master time. Jim’s problems in Patusan mirror those of the Europeans trying to conquer space and time.

…all these things that made him master had made him a captive, too. He looked with an owner’s eye at the peace of the evening, at the life of the old mankind, at the secrets of the land, at the pride of his own heart; but it was they that possessed him and made him their own to the innermost though, to the slightest stir of blood, to his last breath. (152)

As Europe drew closer to creating a system to bring space and time under control, the effects of this system enslaved its pursuers. Jim, however, has become a literal
prisoner within his land. During his imprisonment, and tempted by his captors, Jim entertains the possibility of fixing his past.

Now and again “some fussy ass” deputed from the council-room would come out running to him, and in honeyed tones would administer amazing interrogatories: “Were the Dutch coming to take the country? Would the white man like to go back down the river? What was the object of coming to such a miserable country? The Rajah wanted to know whether the white man could repair a watch? They did bring him a nickel clock of New England make, and out of sheer boredom he busied himself in trying to get the alarum to work.” (154)

The interrogator’s “honey toned” questions are spiked with temptation. Jim would like to “go back down the river” to correct his past. Perhaps things would be easier if he had just stayed in the west. Is there a way to fix his past? As this story is now being told in flashback, Jim’s excuse of “sheer boredom” only brings attention to his self-regret that he has allowed himself to think that Patusan was a mistake.

Just as Brierly discards his gold chronometer as a way to escape time, the clock elicits a visceral reaction from Jim. “He dropped the thing—he says—‘like a hot potato,’ and walked out hastily, without the slightest idea of what he would, or indeed could, do” (155).

Perhaps this insight gives Jim renewed confidence in his ability to master time. Shortly afterward the novel states,

He told me that he remembered suddenly the courtyard, as you remember a place where you had been very happy years ago. He longed—so he said—to be back there again, mending the clock. Mending the clock—that was the idea. He made efforts, tremendous sobbing, gasping efforts, efforts that seemed to burst his eyeballs in their sockets and make him blind, and culminating into one mighty supreme effort in the darkness to crack the earth asunder, to throw it off his limbs—and he felt himself creeping feebly up the bank. (155)

Jim again dreams of going back to mend his past. He strives with every part of his being to figure out a way to correct the past, but his fight proves feeble against nature.
It quickly becomes evident that Jim’s escape from Allang also serves as an escape from his past.

Later Jim demonstrates a newfound patience, expressed in the novel as his ability to act in accordance with an atomistic progression of time, and is rewarded.

Jim noted all this. He told me he was experiencing a feeling of unutterable relief, of vengeful elation. He held his shot, he says, deliberately. He held it for the tenth part of a second, for three strides of the man—an unconscionable time. He held it for the pleasure of saying to himself, That’s a dead man! He was absolutely positive and certain. He let him come on because it did not matter. A dead man, anyhow. He noticed the dilated nostrils, the wide eyes, the intent, eager stillness of the face, and then he fired. (183)

This scene echoes Marlow’s account of the moment when he became fully aware of the details of the French lieutenant’s appearance all in an instant.

The story of Jim is ultimately a narrative about the ability to master time through learning to live in the moment. Jim makes three major leaps within the novel. In the first leap, Jim is completely unable to master time, as he jumps almost unconsciously. Jim makes the second leap, but loses himself in the moment. Finally, at the end of the novel Jim makes the leap to death, but maintains complete mastery of the moment. Examining these three leaps in detail demonstrates Jim’s ability to conquer time. However, Conrad maintains the tension by allowing Jim to demonstrate this mastery only through death.

I present here the novel’s primary accounts of the three leaps in succession. I have separated each account into three sections to compare.

The first leap is described:

“I had jumped . . .” he checked himself, averted his gaze . . . “it seems,” he added. . . . “I knew nothing about it till I looked up,” he explained hastily....
He had landed on somebody and fallen across a thwart. He felt as though all his ribs on his left side must be broken; then he rolled over, and saw vaguely the ship he had deserted uprising above him, with the red side-light glowing large in the rain like a fire on the brow of a hill seen through a mist.

“She seemed higher than a wall; she loomed like a cliff over the boat... I wish I could die,” he cried. “There was no going back. It was as if I had jumped into a well—into an everlasting deep hole...” (68)

The second leap:

He started off “from under his very nose,” went over “like a bird,” and landed on the other side with a fall that jarred all his bones and seemed to split his head. He picked himself up instantly. He never thought of anything at the time....

He saw the creek, and as it were mechanically put on more pace. The earth seemed fairly to fly backwards under his feet. He took off from the last dry spot, felt himself flying through the air, felt himself, without any shock, planted upright in an extremely soft and sticky mudbank. It was only when he tried to move his legs and found he couldn’t that, in his own words, “he came to himself.”

.... The higher firm ground was about six feet in front of him. “I thought I would have to die there all the same,” he said. He reached and grabbed desperately with his hands, and only succeeded in gathering a horrible cold, shiny heap of slime against his breast—up to his very chin. It seemed to him that he was burying himself alive, and then he struck out madly, scattering the mud with his fists. It fell on his head, on his face, over his eyes, into his mouth. He told me he suddenly remembered the courtyard, as you remember a place where you had been very happy years ago. (155)

The third leap:

It was beginning to grow dark. Torches twinkled here and there. Those they met seemed awestruck, and stood aside hastily to let Jim pass. The wailing of women came from above. The courtyard was full of armed Bugis with their followers, and of Patusan people.... “He came! He came!” was running from lip to lip, making a murmur to which he moved. “He hath taken it upon his own head,” a voice said aloud. He heard this and turned to the crowd. “Yes. Upon my head.” A few people recoiled.

Jim waited awhile before Doramin, and then said gently, “I am come in sorrow.” He waited again. “I am come ready and unarmed,” he repeated.... and then, while Jim stood stiffened and with bared head in the light of the torches, looking him straight in the face, he clung heavily with his left arm round the neck of a bowed youth, and lifting deliberately his right, shot his son’s friend through the chest....
The crowd, which had fallen apart behind Jim as soon as Doramin had raised his hand, rushed tumultuously forward after the shot. They say that the white man sent right and left at all those faces a proud and unflinching glance. Then with his hand over his lips he fell forward, dead.

All three episodes are linked by common actions and symbols. Each proceeds with a leap, an expression of self-awareness, and an image of death. The similarities are strong enough to merit closer examination of the differences between the three events.

Examining the first section of each leap we notice a progression of awareness. Jim makes the first leap completely unaware of the moment. It is as though the moment of the leap never existed. The second episode actually contains two leaps. The first leap in this episode compares him to a bird and states that he “never thought of anything at the time.” Jim chooses to leap, but he is acting only on instinct. Jim performs the second leap in this episode “mechanically.” This time he chooses to make the leap, but then feels motionless as the earth seems “fairly to fly backwards under his feet.” In the third episode, Jim states, “Upon my head,” making it clear that he is responsible for this decision and is fully aware of what he is doing.

In the next portion of the first episode, Jim falls onto someone else and injures himself in the process. In the second episode, he realizes that he cannot move his legs and “comes to himself.” In both of these cases Jim has jumped almost aimlessly; he is able to jump, but then loses control of his body and injures himself. However, in the last case when he states, “Upon my head,” others recoil. Furthermore he states, “I am come in sorrow,” and “I am come ready and unarmed” (emphasis mine). The inclusion of the word am in these two sentences at first seems odd. Both sentences would flow much better without this word. However, the word am is truly key to understanding the
importance of time within the passage and indeed, the novel. In these two statements, Jim is conveying his acceptance of an atomistic nature of time. These statements echo the sentences previously revealed in Jim’s letter to Marlow, when he stated, “I must now at once . . .” (207). He is master of this moment. The past and future no longer matter. For Jim, this is victory; he has learned how to exert complete control over the moment.

Viewing the earlier two episodes through this lens allows us to see the full progression of Jim’s character throughout the novel. Initially, Jim proves unable to maintain an atomistic perspective of time. This leads to his failing on the merchant marine ship and on the *Patna*. When escaping from Allang, Jim demonstrates the ability to begin an action, but he is unable to break free from his past, leading him to obsess about “mending the clock.” Finally, Jim approaches his death with an atomistic view of time. However, in keeping with Conrad’s concern with tension, Jim only achieves mastery over the moment as he seals his deathly fate.

While Jim worked to eventually master the modern perspective of time, the novel suggests that others will now have to toil to deal with the natural temporal perspective. The novel utilizes the final two paragraphs to maintain the tension between these two perspectives of time. The narrator states,

> Now he is no more, there are days when the reality of his existence comes to me with an immense, with an overwhelming force; and yet upon my honour there are moments, too, when he passes from my eyes like a disembodied spirit astray amongst the passions of his earth, ready to surrender himself faithfully to the claim of his own word of shades. (253)

While Jim has transcended these perspectives of time through death, the narrator is able to keep Jim’s existence when dealing in natural time, but he now finds himself unable to hold on to Jim’s memory in modern time. Stein now seems to be moving on a
journey antithetical to Jim. “Stein has aged greatly of late. He feels it himself, and says often that he is ‘preparing to leave all this; preparing to leave . . . ’ while he waves his hand sadly at his butterflies” (253). Jim’s journey began with a terrible moment in which he had no control. Stein felt completely in control in the moment of capturing the butterfly but is now rapidly aging and losing the ability to stay in that moment. In this way, the tension remains despite Jim’s death.

Within the novel, the attempt to reconcile atomistic and natural time ends in Jim’s destruction. While this difference between atomistic and natural time seems completely theoretical, in the late nineteenth century the difference was also quite practical. Albert Favager sums up the importance of the matter in a speech to the International Congress on Chronometry at the 1900 Exposition Universelle\(^{13}\) when he states,

> Serait-ce donc qu’en réalité nous n’avons pas encore éprouvé le besoin impérieux, absolu, j’allais dire collectif, d’une heure exacte, uniforme et régulièrement distribuée?
> Voila, dira-t-on, une question qui frisé l’impertinente, lorsqu’elle s’adresse au public affaire et toujours presse de la fin du xix siècle, qui semble avoir fait sien définitivement le célèbre adage: *Le temps c'est de l'argent!*\(^{14}\) (209)

Money always makes innovation important and practical. Moreover, the crux of this technological problem lies in creating a coordinated system that accounts for the continual nature of time while correctly marking each moment. In attempting to synchronize all clocks with a central clock serving as the master of time, one has to

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\(^{14}\) Could it be possible that we have not experienced the imperious, absolute, I would say collective need of time exactly, uniformly, and regularly distributed? .... Here’s a question that borders on impertinence when addressed to a late nineteenth-century public, laden with business and always rushed, a public that has made its own the famous adage: *Time is money!*
account for the time that passes as the signal is sent from the central clock to the others, and one has to find a way to understand what it actually means for two events to happen simultaneously across distance. And while cities were busy synchronizing clocks within municipalities, they remained unable to find a logical method to link clocks across Europe.

This attempt to coordinate different perspectives of time ultimately led Einstein to his theories of relativity. As Galison tells,

Meanwhile, all around him, literally, was the burgeoning fascination with electrocoordinated time. Every day Einstein took the short stroll from his house, left down the Kramgasse, to the patent office; every day he must have seen the great clock towers that presided over Bern with their coordinated clocks, and the myriad of street clocks branched proudly to the central telegraph office. After all, he had to walk under one of the most famous of them, the Zeitglockenturm, and by many others. Sometime in the middle of May 1905—and we note that Einstein moved to the edge of Bern’s unified time zone on 15 May—he and his closest friend, Michel Besso, cornered the electromagnetism problem from every side. “Then,” Einstein recalled, “suddenly I understood where the key to this problem lay.” He skipped his greeting the next day when he met Besso: “Thank you; I’ve completely solved the problem.’ An analysis of the concept of time was my solution. *Time cannot be absolutely defined*, and there is an inseparable relation between time and signal velocity.” Pointing up at a Bern clock tower—one of the famous synchronized clocks in Bern—and then to a clock tower in nearby Muri (not yet linked to the Bern mother clock), Einstein laid out his synchronization of clocks. (375) (emphasis mine)

As it turns out, Conrad’s refusal to declare either the natural or modern perspective as superior was incredibly accurate. And as Brierly leaves his chronometer tied to the ship as he plunges to the ocean’s depths, so Einstein leaves behind the notion of absolute time as he charts a new course for physics.

In chapters twelve and twenty-three of his theories of relativity, Einstein illustrates the connection between space and time through a discussion of the “behaviour of measuring-rods and clocks in motion.” First Einstein demonstrates that the length of a
measuring-rod in motion shortens according to the Lorentz transformation. He states, “It therefore follows that the length of a rigid metre-rod moving in the direction of its length with a velocity \( v \) is \( \sqrt{1 - \frac{v^2}{c^2}} \) of a metre. The rigid rod is thus shorter when in motion than when at rest, and the more quickly it is moving, the shorter the rod” (43). He then goes on to explain that a clock in motion experiences time more slowly, again according to the Lorentz transformation.

As judged from \( K \), the clock is moving with the velocity \( v \); as judged from this reference-body, the time which elapses between two strokes of the clock is not one second, but \( \sqrt{1 - \frac{v^2}{c^2}} \) seconds, i.e. a somewhat larger time. As a consequence of it motion the clock goes more slowly than when at rest. (44)

In these two examinations Einstein demonstrates that the notion of a universal spatial or temporal system is fundamentally flawed. Much as the sailors on the \textit{Patna} and the inhabitants of Patusan hold different perspectives of space and time, people moving relative to each other inherently experience space and time differently. Later, in chapter twenty-three Einstein again refers to moving metre-roses and clocks. In this case, he argues that our gravitational field creates the same effect in rods and clocks, and he again speaks against the possibility of a communal perspective of space and time, stating:

Thus on our circular disc, or, to make the case more general, in every gravitational field, a clock will go more quickly or less quickly, according to the position in which the clock is situated (at rest). For this reason it is not possible to obtain a reasonable definition of time with the aid of clicks which are arranged at rest with respect to the body of reference.... Moreover, at this stage the definition of the space co-ordinates also presents unsurmountable difficulties. (95-96)
Einstein is stating that the gravitational field causes clocks in various positions to move at different rates. Furthermore, this field means that space itself is nonlinear. In a similar way, the *Patna* and Patusan represent two distinct worlds which are not connected by a simple linear path. The concepts of time and space differ greatly between these two worlds, and they are not easily connected. While time and space can be mathematically consistently explained among these worlds, the experiences of their inhabitants are very different. Abandoning the notion of a universal perception of time and space, Einstein moves forward to explain the nature of space.
CHAPTER V

STUDIES OF SPACE AND THE EFFECT OF MASS ON SURROUNDING SPACE

In this chapter, I discuss the concept of space within Lord Jim. This proves to be a timely issue. During the writing of this paper, The University of Amsterdam held a conference to discuss “Space in Literature: Questioning Space in Fiction” with the stated goal to “bring together classicists and modern literary theorists on the concept of space.” Moreover, the university offers a brief history of the scholarship concerning the relationship between literature and space and time.

In a brief essay called ‘Des espaces autres’ which was written in 1967 but published in 1984 Michel Foucault announced that after the nineteenth century, which was dominated by a historical outlook, “l’époque actuelle serait peut-être plutôt l’époque de l’espace.” His prophecy has been fulfilled: the end of the twentieth century witnessed a “spatial turn” in humanities, which was perhaps partly due to the globalization of our modern world.

This shift in attention from time to space is noticeable in particular in literary theory. Until recently space was neglected in favour of time as parameter of literary analysis. (http://www.hum.uva.nl/asca-news/news.cfm/B7421226-BC23-479B-95DC494446A3490C)

Recently, scholars have begun to shift toward studies of space in literature, but many of these explorations, especially regarding Conrad’s works, have focused on the connection between space, mapping, and colonialism. While this aspect is very important, I wish to focus on the nature of the space itself created within Lord Jim.

I explore three distinct elements of the space created within the novel. The first exploration revolves around the two distinct spaces of the western world and Patusan, and Jim’s journey between them. In stretching the narrative from Jim’s days in the merchant marine navy to his ultimate destiny embedded in Patusan, Jim becomes a
symbol for the “space between,” a way to write about this space in a way very similar to cubists’ attempts to paint the “space between.” Next, I examine how the textual structure creates a space that is nonlinear in form and how the various narrators offer clues as to its shape. Finally, I demonstrate how the character of Jim begins to warp the space around him as his character develops and gains mass within the novel.

Lord Jim and works of cubism both investigate a new type of space. Moreover, the most important part of this space is the area between two distinct places. Braque describes this method when he states,

What attracted me—and was the principal direction of Cubism—was the materialisation of that new space that I sensed. Then I commenced to focus on still lives, because in nature there is a tactile space, I would say almost manual. I have written about it thus: “When a still life is no more accessible to the hand, it ceases to be still life.” That answered for me the desire that I have always had to touch the thing and not only to see it. This is the space which especially attracted me, because it was what early cubist painting was about, research into space. (130-131)

In a similar way, Conrad researches space as he creates a novel that is understood by the reader in a fashion much closer to real life than the traditional linear narrative. Furthermore, the key to understanding this form is the novel’s treatment of the space between two events, Jim’s time on the Patna and his time in Patusan. Even within these spaces, often two sequential but separate events will be described before the novel goes back to focus on the important details in between. In this way, one finds even more parallels between the novel and Braque’s “research into space.” Braque complains that many painters, “totally ignore that what is between the apple and the plate can be painted too…. This in between space [entre deux] seems to me just as important as the objects themselves” (131). This is the very space on which Lord Jim focuses.
The plot structure of *Lord Jim* sets up as events on two distant planets, each with a telescope gazing in the other one's direction. In "*Lord Jim* and *The Return of the Native*: A Contrast,"\(^{15}\) Kellogg W. Hunt notes that

Conrad does not cut his action up into five or six discrete packages…. He does not have enough action to make that many packages. The most he could make would be two. But the fact of the two-ness is a profound advantage to this moral novel. The first package deals with moral failure. The second deals with success. Each mirrors the other. The second without the first would lose its sense of fulfillment. The first without the second would make nothing but a shallow sort of vivid psychological tale. (450)

Jim stands pulled between these two packages or planets. Thus the focus within the novel is not on the *Patna* or on Patusan but on the way these events are linked through Jim.

Patrick Tourchon also touches on this structure of space within *Lord Jim* as he writes in "Polyphony in *Lord Jim*: On Ubermensch."\(^{16}\) In his section, “Two Perceptions of Space,” he states,

Thus, it is not a Pyrrhonian skepticism that makes Marlow recognize Patusan’s existence in his mind only (“it is only through me that he [Jim] exists for you”) as he doubted that the Western world would exist to Jewel (“I ask myself whether she were sure that anything else existed. What notions she may have formed of the outside world is to me inconceivable”) (Conrad 224, 307). Marlow instead reveals his temporalization of space, his treating space as he treats time, by submitting both to a necessity, to an *anagkh*: Marlow will be able to come back from Patusan only if he never fully enters it, only if he perceives the place without merging with it; conversely, Jewel, who has *merged* with it since her birth, will never be able, according to Marlow, to perceive anything about the Western world. (73-74)

As Tourchon argues, the Western world and Patusan are two distinct worlds which cannot be traversed by fully merged residents of either side. The novel sets up Jim as


one who is not fully merged with either world and thus can move from one to the other as a beam of light travels between two planets. Moreover, Marlow’s “temporalization of space” is a concept which speaks forward to Einstein’s construction of a space-time continuum.

For most, the space between the western world and Patusan eludes sight. As Marlow states, in an attempt to make sense of Jim’s final communication with him, “There’s nothing more; he had seen a broad gulf that neither eye nor voice could span. I can understand this. He was overwhelmed by the inexplicable; he was overwhelmed by his own personality—the gift of that destiny which he had done his best to master” (207). In examining Jim, the reader is in fact analyzing that “broad gulf” through the eyes of the various narrators.

As Marlow remembers leaving Jim for the final time he states,

You remember that when I was leaving him for the last time he had asked whether I would be going home soon, and suddenly cried after me, ‘Tell them . . .’ I had waited—curious I’ll own, and hopeful, too—only to hear him shout, ‘No—nothing.’ That was all then—and there will be nothing more; there will be no message, unless such as each of us can interpret for himself from the language of facts, that are so often more enigmatic than the craftiest arrangement of words. (206)

The novel does not afford Jim the opportunity to provide unfiltered details regarding his journey. Instead, Jim’s crossing between two worlds is narrated through increasingly thick filters and from numerous temporal perspectives. Each of these narrative/temporal perspectives provides various clues into the shape of the text constituting Lord Jim.

For this discussion it is helpful to examine Lord Jim as a space defined by Kantian terms. Kant writes, “Space is not something objective and real, nor a
substance, nor an accident, nor a relation; instead, it is subjective and ideal, and originates from the mind's nature in accord with a stable law as a scheme, as it were, for coordinating everything sensed externally.” (Ak 2: 403) In this way, Conrad creates a new space as he writes *Lord Jim*. More importantly, this space is not formed in the same traditional method that can easily be associated with the traditional Euclidean linear narrative.

The novel illuminates the space between by including narratives of characters to compare and contrast with Jim. Much of *Lord Jim* contains stories that do little or nothing to propel the plot, but instead provide multiple perspectives to gaze on Jim’s plight. We return to Hunt who states,

> Of such interpolated narratives there are many, and each provides an essential illuminating sidelight upon the character and behavior of Jim. Brierly’s suicide shows how one man reacts to the discovery that he below his own standard, like Jim. Chester and Robinson show how men can retreat from reality and decent company after they are convicted, like Jim. The French gunboat captain, bearing scars, shows the cool courage Jim lacked. (451)

As a result of these numerous perspectives, the reader not only creates a more informed image of Jim’s character, but also an analysis of the collection of various narratives. The reader is now given the responsibility of synchronizing the various accounts.

The novel utilizes various narrators and narrative schemes as it progresses. An omniscient narrator tells the beginning of the tale, offering glimpses of Jim’s internal thoughts. In chapter five however, Marlow begins narrating the story, accompanying and assisting the reader in analyzing Jim. The shift changes the space through which the reader views Jim. The reader no longer has access to Jim’s interior motives and the narrative is now delivered out of sequence creating a Kantian space that is nonlinear.
Earlier I discussed how the scientists utilized photography to study the movement of animals. With *Lord Jim* the reader experiences a similar study, but the photographs have been jumbled. This new arrangement is much closer to what Virginia Woolf later describes in *The Common Reader*\(^\text{17}\) when she states,

> Look within and life, it seems, is very far from being “like this.” Examine for a moment an ordinary mind on an ordinary day. The mind receives a myriad of impressions—trivial, fantastic, evanescent, or engraved with the sharpness of steel. From all sides they come, an incessant shower of innumerable atoms; and as they fall, as they shape themselves into the life of Monday or Tuesday, the accent falls differently from the old; the moment of importance came not here but there…. Let us record the atoms as they fall upon the mind in the order in which they fall, let us trace the pattern, however disconnected and incoherent in appearance, which each sight or incident scores upon the consciousness. (149-150)

While Woolf is speaking of the manner in which thoughts enter and accumulate in our minds, the same imagery of atoms works for describing how the pieces of *Lord Jim* fall to the reader. Moreover, this atomistic perception of time stands in direct contrast to many of the non-Europeans within *Lord Jim*.

Throughout the novel, the narrative jumps forward in time before going back and filling in the details of the space in between. This creates a constant focus on the spaces in between events. For instance, at the end of chapter three the reader sees Jim aboard the *Patna* in calm waters. Chapter four begins with Jim in the courtroom and then goes back to fill in the details of what happened in between. Later in chapter five the narrative again leaps forward, this time to Jim and Marlow sitting on a verandah, before falling back to the misfortunate tale of the *Patna*. Again in chapter sixteen the narrative jumps ahead to inform the reader of Jim’s honorable future, before returning to the present tale presented in past tense. This sort of action continues throughout the

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novel, constantly moving from past to future and then filling in the gaps. In this way, the novel creates a space that is nonlinear and indeed very complex.

Returning to the consequences of Marlow as narrator, all judgments of Jim are now filtered through Marlow's eyes. Furthermore, the novel reminds the reader that Marlow's view of Jim is neither complete nor without bias. In chapter eleven Marlow states,

The dim candle spluttered within the ball of glass, and that was all I had to see him by; at his back was the dark night with the clear stars, whose distant glitter disposed in retreating planes lured the eye into the depths of a greater darkness; and yet a mysterious light seemed to show me his boyish head, as if in that moment the youth within him had, for a second, glowed and expired. (78)

Notice how even here, the passage does not emphasize Jim's true self, but the light that illuminates him in the dark night. Moreover, the passage reminds the reader of the space, the "retreating planes," much like the retreating narratives that form the novel. The final narrative of Jim's time in Patusan leading to his death is delivered through Marlow's written account in a letter to one of his earlier listeners on the veranda. In this way, the reader is pulled into the space of the narrative as one feels he is reading along simultaneously with the listener. This leads to an exploration into Jim's ability to pull in space and time as his character gains critical mass within the novel.

As Jim progresses through the novel, he gains a literary mass that begins to pull in the space and time around him. In analyzing this progression, I will focus on three episodes similar in language, action, and result. In moving between each episode, the distance between the narrator increases even as Jim's power multiplies.

In the beginning, Jim carries no real weight and we see the world swirl around him. The final man through which the story passes is forced to remove himself from the
space and time of the outside world and enter the space of the novel. The novel details this transition, and I present it here interspersed with resonating earlier episodes from the novel.

Having a steady head with an excellent physique; he was very smart aloft. His station was in the fore-top, and often from there he looked down, with the contempt of a man destined to shine in the midst of dangers, at the peaceful multitude of roofs cut in two by the brown tide of the stream, while scattered on the chimneys rose perpendicular against a grimy sky, each slender like a pencil, and belching out smoke like a volcano. He could see the big ships departing, the broad-beamed ferries constantly on the move, the little boats floating far below his feet, with the hazy splendour of the sea in the distance, and the hope of a stirring life in the world of adventure. On the lower deck in the babel of two hundred voices he would forget himself… (5)

In this first passage, Jim is placed above the outside world, but he has no bearing on it. His view of the world is dirty as he looks upon “chimneys belching out smoke like a volcano against a grimy sky.” His stature is diminished as he forgets himself in the “babel of two hundred voices.” The episode continues:

It was the dusk of a winter’s day. The gale had freshened since noon, stopping the traffic on the river and now blew with the strength of a hurricane in fitful bursts that boomed like salvoes of great guns firing over the ocean. The rain slanted in sheets that flicked and subsided, and between whiles Jim had threatening glimpses of the tumbling tide, the small craft jumbled and tossing along the shore, the motionless buildings in the driving mist, the broad ferry-boats pitching ponderously at anchor, the vast landing-stages heaving up and down and smothered in sprays. The next gust seemed to blow all this away. The air was full of flying water. There was a fierce purpose in the gale, a furious earnestness in the screech of the wind, in the brutal tumult of earth and sky, that seemed directed at him, and made him hold his breath in awe. He stood still. It seemed to him he was whirled around. (5)

Jim’s strength is here contrasted with the brutal force of nature. Jim’s vision of water traffic and big ships and small boats floating in the “hazy splendour of the sea” explodes before his eyes. Jim is “holds his breath in awe” and loses his sense of place. In fact, we soon see that Jim has withdrawn to a fantasy world of books:
…and beforehand live in his mind the sea-life of light literature. He saw himself saving people from sinking ships, cutting away masts in a hurricane, swimming through a surf with a line; or as a lonely castaway, barefooted and half naked, walking on uncovered reefs in search of shell-fish to stave off starvation. He confronted savages on tropical shores, quelled mutinies on the high seas, and in a small boat upon the ocean kept up the hearts of despairing men—always an example of devotion to duty, and as unflinching as a hero in a book…. “Too late, youngster.” (5)

Even here, the stories are described as the stuff of “light literature.” Jim is viewed as a half naked castaway among savages. His influence on time is void as the captain tells him, “Too late, youngster.” Jim’s presence in this episode is little more than ethereal; he demonstrates no influence on the world around him.

In the next episode, we witness Jim begin to mentally collect the world around him. As a planet speeding through the ether, Jim begins to pick up the action swirling about him, although he still lacks influence over it.

“…the light touch of the canvas on his face nearly knocked him off the hatchway ladder…. He saw here and there a head lifted off a mat, a vague form uprise in sitting posture, listen sleepily for a moment, sink down again into the billowy confusion of boxes, steam-winches, ventilators. He was aware all these people did not know enough to take intelligent notice of that strange noise.” (53)

Again Jim is placed above the crowd. The chimneys are replaced with the lifted heads of pilgrims, the traffic of boats with “the billowy confusion of boxes, steam-winches, ventilators.” Instead forgetting himself in a chaotic babel of noise, Jim alone is able to intelligently interpret the strange noise.

“You must remember he believed, as any other man would have done in his place, that the ship would go down at any moment; the bulging, rust-eaten plates that kept back the ocean, fatally must give way, all at once like an undermined dam, and let in a sudden and overwhelming flood. He stood still looking at these recumbent bodies, a doomed man aware of his fate, surveying the silent company of the dead. (53)
Jim now senses the powerful destructive force of nature, but it is held off as mere threat. The space around Jim remains calm and his company keeps silent. As the episode continues:

They were dead! Nothing could save them! There were boats enough for half of them perhaps, but there was no time. No time! No time! It did not seem worth while to open his lips, to stir hand or foot. Before he could shout three words, or make three steps, he would be floundering in a sea whitened awfully by the desperate struggles of human beings, clamorous with the distress of cries for help. There was no help. He imagined what would happen perfectly; he went through it all motionless by the hatchway with the lamp in his hand—he went through it to the very last harrowing detail. (53)

Jim’s imagination remains on the real peril of his situation. Despite the triple repetition of “no time,” the reader now knows that the sinking of the ship was delayed indefinitely. The present moment collects and expands in Jim’s mind as he imagines every last harrowing detail. Marlow later surmises that Jim stood there for “two minutes—perhaps.” In continuing his story, the space begins to gravitate toward Jim as he states, “Some of the crew were sleeping on the number one hatch within reach of my arm” (54-55). Finally, the reader begins to sense that Marlow has been pulled into Jim’s universe as he asks,

Which of us here has not observed this extreme weariness of emotions, the vanity of effort, the yearning for rest? Those striving with unreasonable forces know it well—the shipwrecked castaways in boats, wanderers lost in a desert, men battling against the unthinking might of nature, or the stupid brutality of crowds. (54)

The images of castaways and despairing men upon the ocean in a small boat now fill Marlow’s mind as well. The stature of Jim’s narrative is now beginning to influence the outside world. Moving toward the end of the novel, we see that the gravity of Jim’s story now pulls in the western world even as Jim has died across the great gulf of space in Patusan.
The privileged man opened the packet, looked in, then, laying it down, went to the window. His rooms were in the highest flat of a lofty building, and his glance could travel afar beyond the clear panes of glass, as though he were looking out of the lantern of a lighthouse. The slopes of the roofs glistened, the dark, broken ridges succeeded each other without end like somber, uncrested waves, and from the depths of the town under his feet ascended a confused and unceasing mutter. The spires of churches, numerous, scattered haphazard, uprose like beacons on a maze of shoals without a channel; ... (205)

This “privileged man” has never met Jim, and yet he stands in Jim’s position. Notice the comparisons to the first episode. Jim was “smart aloft” and stationed in the “fore-top,” while the privileged man stays in the “highest flat of a lofty building.” As Jim “looked down at the peaceful multitude of roofs cut in two by the brown tide of the stream,” the privileged man’s glance travels across glistening slopes of roofs, the dark, broken ridges succeeding each other without end like somber, uncrested waves. The belching chimneys, later replaced by the uplifted heads of doomed pilgrims, are now “spires of churches.” The “babel” and “strange noise” have now been reduced to a “confused and unceasing mutter.” The gravity of Jim’s narrative has now transformed the world around him. The space of the outside world has been pulled into the imagery of the narrative. The episode continues:

the driving rain mingled with the falling dusk of a winter’s evening; and the booming of a big clock on a tower, striking the hour, rolled past in voluminous, austere bursts of sound with a shrill, vibrating cry at the core. He drew the heavy curtains. (205)

Again, the imagery of nature is now pulled into the scene earlier depicted. Time has now collapsed to the dusk of a winter evening from the first episode. A driving rain continues to fall. The booms “like salvoes of great guns firing over the ocean” are now booms “of a big clock on a tower, striking the hour.” The span of time from Jim’s first encounter on the merchant-marine ship to the present has collapsed into a single
moment, allowing Jim’s narrative to become truly timeless. Meanwhile, the privileged man draws the heavy curtains as we watch the space of the outside world collapse in the gravity of Jim’s narrative.

The light of his shaded reading-lamp slept like a sheltered pool, his footfalls made no sound on the carpet, his wandering days were over. No more horizons as boundless as hope, no more twilights within the forests as solemn as temples, in the hot quest of the Ever-undiscovered Country over the hill, across the stream, beyond the wave. The hour was striking! No more! No more!—but the opened packet under the lamp brought back the sounds, the visions, the very savour of the past—a multitude of fading faces, a tumult of low voices, dying away upon the shores of distant seas under a passionate and unconsoling sunshine. He sighed and sat down to read. (205)

The narrator begins with the horizon and pulls the outside world in from “over the hill,” to “across the stream,” to “beyond the next wave.” Time literally stops as the hour continues to strike. “No more! No more!” Everything reverts to the past of Jim’s narrative. Earlier Jim held his breath, but now his narrative sucks in the breath of the reader as he sighs and sits down to become immersed in Jim’s story. While the second episode lasted maybe two minutes, this final story will encapsulate two years. The mass of Jim’s narrative now bends the fabric of space and time in towards itself like a black hole.

Einstein’s description of space proves very similar to this scene involving Jim’s final narrator. According to his general theory of relativity, objects of large mass bend the fabric of space surrounding them. He states.

In order to find out the general law-of-field of gravitation we still require to obtain a generalization of the law as found above. This can be obtained without caprice, however, by taking into consideration the following demands:

(a) The required generalization must likewise satisfy the general postulate of relativity.

(b) If there is any matter in the domain under consideration, only its inertial mass, and thus according to Section XV only its energy is of importance for its effect in exciting a field.
(c) Gravitational field and matter together must satisfy the law of the conservation of energy (and of impulse). (120-121)

Here Einstein is laying down the rules, stating that the law of gravitation should be powerful enough to handle every experimental observation within the universe. He goes on to state that Newton’s theory holds for every planet save one, much as Marlow maintained that there was one special listener. For Einstein, this attentive listener bearing light on the laws of the universe is the planet Mercury. He continues,

…if Newton’s theory be strictly correct, we ought to obtain for the orbit of the planet an ellipse, which is fixed with reference to the fixed stars. This deduction, which can be tested with great accuracy, has been confirmed for all the planets save one, with the precision that is capable of being obtained by the delicacy of observation attainable at the present time. The sole exception is Mercury, the planet which lies nearest the sun. (123)

He goes on to state that the gravitational field of the sun bends light waves, an effect only possible if this field is creating a curvature in space as light moves in a straight path. As Jim bends the space around him, drawing in the light, the sounds, and the closest listener toward him, the sun also bends space and draws light and its closest planet toward itself.
CHAPTER VI
ENDURING CONCLUSIONS

Intense study of the nature of space and time infused the culture during the late
nineteenth century. Technological advancements in spatial and temporal precision led
to a problem of temporal dissonance. Society’s first response was to attempt to come
together to create a temporal system that would accommodate everyone. When this
failed, attempts were made to increase personal awareness of time and expand the
present. Explorers then investigated the structure of space-time itself.

While records of these explorations may be viewed in all disciplines, this thesis
focuses on the similarities between literary and scientific studies. It is not meant to
suggest a direct influence between the specific works of Dracula, Lord Jim, and
Einstein’s theories of relativity. Nonetheless, the discussion of the space and time
heavily infiltrated these and numerous other works during this time period.

It remains fascinating how similar some of the language in these novels
compares with that of Einstein’s scientific work. The invention of the pocket watch and
the sprawling train system in Europe led to a greater awareness of the disparate
measurements of time across the continent. The novel Dracula opens on a train with
the date and time clearly notated. Bram Stoker’s notes indicate a fascination with the
temporal aspect of train travel, and Jonathan Harker’s journal entries along his trip
magnify the importance of time within the novel. Einstein then relies heavily on the
image of a train to illustrate his theories.

In an even closer comparison, Lord Jim compares the journey of the Patna
through calm waters to a planet traveling through the ether.
The thin gold shaving of the moon floating slowly downwards had lost itself on
the darkened surface of the waters, and the eternity beyond the sky seemed to
come down nearer to the earth, with the augmented glitter of the stars, with the
more profound somberness in the luster of the half-transparent dome covering
the flat disc of an opaque sea. The ship moved so smoothly that her onward
motion was imperceptible to the senses of men, as though she had been a
crowded planet speeding through the dark spaces of ether behind the swarm of
suns, in the appalling and calm solitudes awaiting the breath of future creations.
(Conrad 24)

The novel stretches these sentences slowing the reader’s sense of time to a near
standstill, focusing attention on a simile that now appears to speak into Einstein’s future
work. In Albert Einstein and Leopold Infelds’ *The Evolution of Physics*,\(^\text{18}\) the scientists
describe a mental experiment with imagery very similar to the previous passage from
*Lord Jim*. The experiment involves two people observing the behavior of light within an
imaginary room moving through space.

But we can equally well imagine the opposite: that the room travels through the
ether as a ship through a perfectly smooth sea, not carrying any part of the
medium along but moving through it. (Einstein 167)

The similarity between these two images is incredible, and demonstrates the
pervasiveness of this belief in the ether. Einstein is concerned here with the behavior of
light as it passes through the ether. In a very similar way, *Lord Jim* explores the
behavior of information as it passes through various narrators. Moreover, *Lord Jim’s*
image of a planet speeding through the ether works well for analyzing the narrator
progression of the novel and for comparing the novel to the universe. As previously
discussed, scientists at the time believed that the Earth dragged along part of the ether
as it moved through space.

This suspicion of the rigid nature of space and time constructed by modern society serves as a precursor for Einstein’s dismantling of the Euclidean space-time continuum. In his General Theory of Relativity, Einstein replaces Euclidean space-time with Gaussian curvature.

In chapter twenty-seven, Einstein leaves behind the world’s chronometer as he discards Euclidean geometry in order to find a more adequate system for describing the shape of the universe. He states,

In the first part of this book we were able to make use of space-time co-ordinates which allowed of a simple and direct physical interpretation, and which, according to Section XXVI, can be regarded as four-dimensional Cartesian co-ordinates. This was possible on the basis of the law of the constancy of the velocity of light. But according to Section XXI, the general theory of relativity cannot retain this law. On the contrary, we arrived the result that according to this latter theory the velocity of light must always depend on the co-ordinates when a gravitational field is present. In connection with a specific illustration in Section XXIII, we found that the presence of a gravitational field invalidates the definition of the co-ordinates and the time, which led us to our objective in the special theory of relativity.

In view of the results of these considerations we are led to the conviction that, according to the general principle of relativity, the space-time continuum cannot be regarded as a Euclidean one, but that here we have the general case, corresponding to the marble slab with variations of temperature, and with which we made acquaintance as an example of a two-dimensional continuum. Just as it was there impossible to construct a Cartesian co-ordinate system from equal rods, so here it is impossible to build up a system (reference-body) form rigid bodies and clocks, which shall be of such a nature that measuring-rods and clocks, arranged rigidly with respect to one another, shall indicate position and time directly. Such was the essence of the difficulty with which we were confronted in Section XXIII. (111-112)

*Dracula* and *Lord Jim*, like Einstein, dismiss the Euclidean linear system. In literature, this dismissal is signaled by their deviation from the traditional narrative form. Einstein meanwhile, deviates from the classical form of physics which ruled the universe since Newton.
Understanding the influence of spatial/temporal studies on these two novels leads to a more informed reading and a better understanding of the culture surrounding them. Furthermore, it elevates the importance of both works in contributing to the scientific discussion of space and time. Finally, it proves that incredibly sophisticated explorations into the physical laws that would ultimately lead to Einstein's theories of relativity were well underway and documented in the realm of literature. Einstein's training in the patent office may have led him to deny any real connection between his theories and previous works, but one can now see that if he had chosen, he might have located the roots to his theories in stories of vampires and romantics.


