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Left Brain vs. Right Brain: An Analysis of Cervantes' Don Quixote

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LEFT BRAIN VS. RIGHT BRAIN:
AN ANALYSIS OF FUNCTIONALITY IN CERVANTES' DON QUIXOTE

by

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Spanish
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ABSTRACT

El ingenioso hidalgo Don Quixote de la Mancha sits at the crossroads of two defined Spanish early modern contexts, combining Renaissance ideals with Baroque elements into one Golden Age masterpiece. The theme of duality present throughout the work finds true expression in Cervantes' well-educated protagonist, Alonso Quijano. In him, the reader glimpses the struggle between antiquity versus early modernity, ideality versus reality, instability versus sanity, and unhealthiness versus healthiness. These medical themes and the underlying sociocultural facets will be investigated by thoroughly evaluating Cervantes' treatment of human consciousness. In doing so, this study aims to explore the following questions: to what extent does Cervantes present relevant medical knowledge applicable to the Renaissance and Baroque periods of Spanish history? How do these medical allusions and references influence the reader's perception of Don Quixote as insane? Could/Would a medical diagnosis of some neurologically or psychologically based disorder be applied? Finally, to what extent of the protagonist's behavior may be medically attributed and to what extent may be the result of sociocultural disconnection? Following an in-depth review of Spanish literature and medical knowledge, it will be necessary to examine the work for episodes in which Don Quixote experiences pronounced fatigue, forgetting spells, head trauma, sleep disturbances, and headaches. This psychoanalytical process of interpreting Spanish medicine through the lens of literature illuminates the scientific background inherent in the novel and establishes a foundation for uncovering the connections between medicine, culture, and literature in Golden Age Spain.

DEDICATION

For my mother Donna—the strongest woman I know—whose constant encouragement and support for my education has made me the life-long learner I am today.

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INTRODUCTION

El ingenioso hidalgo Don Quixote de la Mancha occupies a place of honor in Spanish literary canon. As the world's first modern novel, *Quixote* functions as a stand-alone masterpiece in which its gifted author, Miguel de Cervantes y Saavedra, bridges the divide between Renaissance and Baroque. Cervantes is unparalleled in his personification of characters as the competing elements of the Spanish Golden Age¹; readers are able to grasp the innovation of the Renaissance age and, may witness the complexity of the Baroque era. This Golden Age paradigm provides context for the work and beckons the reader to explore the history, culture, and movement of the period as integral parts to the understanding of *Quixote*.

Touted as the quintessential work of the age, *Don Quixote* represents the purest goal of man: the pursuit and fulfillment of dreams. It is his quest to live out his life as a true knight of the Spanish Crown that motivates Quixote to seek adventure, sallying forth time and again from his home in La Mancha. Each journey explores the themes of pastoralism and the medieval code of honor in a vein of anachronism. Cervantes recalls these past elements and presents them in the form of a character who transitions from medieval themes, to Renaissance ideals, and finally to Baroque principles.

This unlikely medieval conversion in the face of a Baroque environment is caused by the protagonist's love of literature. Seated amongst the tomes and volumes housed in his massive library, Alonso Quijano names himself Don Quixote de La Mancha and assumes the identity of a

¹ Literary period encompassing both the sixteenth century, or the Renaissance, and the seventeenth century, or the Baroque as they apply to Spain.

medieval knight modeled after the heroes in his beloved *libros de caballerías*². Encased in armor and seated atop his steed, Rocinante, Don Quixote becomes a glorified Spanish knight, completely out of touch with the society in which he finds himself. With a strict adherence to the code of honor and pronounced belief in the feudal system of the Middle Ages, Alonso Quijano (Quixote) embarks on a journey to enact justice and defend the honor of the Spanish monarchy.

During these adventures, a humble farmer named Sancho Panza accompanies Don Quixote as his squire and page. Sancho serves as a humble counterpart to the protagonist's education and knowledge of the tales of knights-errantry. However, this should not be construed to mean that Sancho is unintelligent. Rather, he functions within a well-developed sense of reality- knowing little of the world of chivalry. Sancho cannot read nor write well, but, nevertheless, throughout the entire novel, he provides degree of equilibrium to some of Don Quixote's more reckless schemes and ploys. In fact, a reciprocal relationship exists between the two in which a knight and *hidalgo*³ learns from a squire and *campesino*⁴. This bilateral education stems from Quixote's affinity for ideality and Sancho's preference for reality. Cervantes produces these characters to balance one another in the novel and evince competing values and themes. They are *hidalgo* and *campesino*, knight and squire, Renaissance and Baroque. This dynamic between both characters results in one of the most studied and well-documented phenomena in Quixote studies: the influence that Don Quixote asserts over Sancho, or the

² Books of chivalry containing epic tales of knights and their deeds.

³ Nobleman.

⁴ Farmhand.

*quixotización de Sancho*⁵ and the equal yet opposite influence that Sancho exerts on Don Quixote, or the *sanchonización de Don Quixote*⁶.

The resulting exchange of personal philosophies permits Cervantes to explore human consciousness, the real versus the ideal, and societal influences on characters' perceptions of their environment. These aspects- when taken together- constitute the basis for the classic debate amongst Quixote scholars: is Don Quixote unstable, or is there some other explanation for his strange, erratic behavior throughout much of the work? This analysis will reject the provincial view that reduces the main character of the first modern novel to a mere madman whose thoughts and actions are no more than the product of his literary confinement. Instead, an alternative hypothesis will be offered: Don Quixote is not crazy, but is rather the victim of a neurologically or psychologically based affliction and/or pronounced sociocultural dissonance.

In exploring these sources of his behavior, the following questions will come under consideration: to what extent does Cervantes present relevant medical knowledge applicable to the Renaissance and Baroque periods of Spanish history? How do assorted medical allusions and textual references influence the reader's perception of Don Quixote as insane? Could/would a medical diagnosis of some neurologically/psychologically-based disorder be applied? Finally, to what extent of the protagonist's behavior may be medically attributed and to what extent may be considered the result of sociocultural disconnection? These questions will illuminate an area rarely investigated or catalogued within Cervantine studies. In this probe into the medical background of the work and the resulting sociological, psychological, and neurological

⁵ Process by which Sancho adopts more of Don Quixote's traits.

⁶ Process by which Don Quixote exercises restraint and conforms to Sancho's attributes.

implications, special care will be given to the function of Don Quixote as both an ideal character and real Spanish citizen.

Nevertheless, it should be noted that *Don Quixote* is first and foremost, a work of fiction. Therefore, any evidence that correlates with a neurological or psychological condition must also be balanced with a discussion of the literary limitations of such a conclusion. The intention of this study is to account for both the scientific backbone of the text while considering developments from a fictional, literary, and cultural standpoint. Cervantes wove these viewpoints into the novel: to analyze one is to awaken the other and vice versa. A discussion of Quixote's hyper behavior must be accompanied by literary and cultural context to ensure that both elements are in harmony with conclusions drawn.

The discussion of these elements will proceed in a chronological fashion as each literary episode is analyzed for passages containing medical allusions and references. Before this can proceed, however, it is necessary to characterize Golden Age literature; to investigate the common themes, motivations in writing, and relevant historical and cultural backgrounds. Of exigency, too, is the need for a survey of medical history in Spain spanning both the Renaissance and Baroque periods. Another area will catalogue Cervantes' motivations in writing specifically and describe his experiences and dealings with medicine. From here, the project may lead to the text in a precise analysis of the scientific underpinnings within. This confluence of factors may provide context to the relatively unexplored subject of medicine in the first modern novel and demonstrate how a work of fiction may be integral to more than one discipline.

The Definition of Functionality

To begin, it is prudent to describe the concept of ‘Functionality’ and its importance to the study as a whole. As an author Cervantes synthesizes both literary and scientific elements in order to construct the character of Don Quixote. These themes and supporting textual evidence will be presented throughout the chapters of this work. Quixote is neither fully a fictional character nor is he a pure scientific product, but rather, he embodies facets of both of these disciplines. The crux of this study, however, contends with whether or not this protagonist is ‘functional’ in society. That is to say, does Don Quixote represent an average person in Spanish society during the Golden Age period? Do his behaviors, mannerisms, attitudes, thoughts, and overall actions merit the designation of ‘functional’ in comparison to other supporting characters of the work such as Sancho Panza? Under this terminology, the study will seek to answer the aforementioned questions as well as classify Quixote as a typical person of Spanish society.

Functionality represents both scientific and literary constructs and to this end, it will be vital to explore both of these realms. Additionally, both Cervantes’ presentations of Don Quixote as the possible victim of a medical disorder or some generalized psychological imbalance and his descriptions of the fictional literary landscape and the very real backdrop of Spanish Golden Age society portend a clash between functionality and the protagonist. This study will proceed to examine ‘functionality’ through qualitative methods rather than quantitative ones and will progress through successive stages of analysis of both literature and medicine beginning with a panorama of Golden Age literature and moving into a timeline of Spanish medicine afterwards.

Interestingly, this thesis is one of very few studies to explore the medical themes of Cervantes' most popular work alongside a detailed discussion of his literary merits and hallmarks.

CHAPTER 1: PANORAMA OF GOLDEN AGE LITERATURE

The Golden Age encompasses two distinct epochs of the Spanish landscape: the Renaissance and the Baroque. The roots of these eras crisscross into history, society, and culture to render different realities in Spain. Historians argue and vacillate over the exact starting and ending dates of the Golden Age, but it is largely agreed that the Golden Age drama period comes to life with Fernando de Rojas' *La Celestina* published in 1499 and concludes with the death of Lope de Vega in 1681 (Parker 4). It is important to note that this period does not necessarily align with the Renaissance and Baroque years of other European countries in this same timeframe. In fact, many authors, poets, and playwrights reject the siren song of Italian literary influence.

To be sure, some Spanish writers like Garcilaso de la Vega adopt Italian style in composition and subject material with his adherence to the Italian sonnet of Petrarch. But for the most part, Spain embodies a Roman spirit in which it borrows from the Italian Renaissance and imbues the foreign elements with a decidedly Spanish flair. The literature evinces strong themes of defense of religion, realism, independence, chivalric deeds and accounts of heroic feats, love in human relationships, and pastoralism. In attempting to characterize everyday life, authors, poets, and artists strived to appeal to a wider audience and render Spanish society visible. During both periods, but especially during the Baroque, two styles emerged in writing. The first school of thought is preferred by intellectuals such as Lope de Vega and Francisco Quevedo. This approach to literature cuts currents through Italian influence and staves off the *commedia*

*dell'arte*⁷ movement from Italy. Instead, Lope and Quevedo employ “witticisms, poetic conceits, double meanings, subtle play on words and ideas” (Parker 5). Parker explains that the second school of thought known as the “cultivated style” submits to the pull of Italian influence utilizing “classical allusions, brilliant metaphors, hermetic language, neologisms, and Italian and Latin words” (5).

This divergence in the philosophy of writing mirrors the conflicts raging within Spain at the time. Golden Age literature evolved to shield Spanish nationalism from sharp blows from wanton foreign influence and hegemony. These Renaissance and Baroque themes are present in *Don Quixote* and in order to understand individual episodes, it is necessary to present key works that evince themes within *Don Quixote*. The authors and works presented here are representative of the Golden Age as a whole and symbolize the diverse subject material found in the poems, eclogues, plays, and essays which influenced Cervantes and his publication of the first modern novel.

Non-idealized Love and Deception

Although not much is known about Fernando de Rojas and his authorship of *La Celestina*, our discussion of Golden Age literature must begin with the work that signaled Spain’s transition from the Middle Ages to the Renaissance. The full title of the work is *La Tragicomedia de Calisto y Melibea* and it was written around 1497 and circulated beginning in 1499 (Parker 146). The work is the first to earn the distinction of *tragicomedia*, that is to say, it retains elements of both tragedy and comedy in depth of its characters and overarching plot elements. Throughout the course of the drama, Calisto, an intrepid young man, falls in love with

⁷ Whimsical Italian writing selections founded on exaggeration and distortion.

the beautiful Melibea after seeing her in her gardens. He approaches her and is subsequently rejected. Withdrawing into sorrow and solitude, Calisto enlists the help of his friend Sempronio who, with the aid of another servant, Pármene, devises a plan to assist Calisto. The two servants contract La Celestina, an old *alcahueta*⁸ who acts as a matchmaker. The character of Celestina succeeds in having Melibea return Calisto's love, but when she tries to collect her payment, she is drawn into a fight among Pármene and Sempronio where she is murdered. In turn, Sempronio and Pármene are executed for their complicity in the death of Celestina. Unfortunately, for the star-crossed lovers, their fate meets a sorrowful end as well. After trying to scale a tower to reach Melibea, Calisto falls from a ladder and dies. Hearing of this news, Melibea cannot bear the thought of living without her beloved within a society where women must preserve their *honra*⁹ in order to survive, and so, she flings herself from her tower, finding solace in suicide.

La Celestina was ground-breaking in Spanish literary canon because Rojas grounded his characters as common people. Rojas broke with the concept of idealized love and endeavored to represent the love between the central man and women in the text as flourishing under a different set of circumstances. Calisto succeeds in capturing the attention of Melibea through deception and corruption embodied by Celestina. This is not the pure love (at least not in the beginning) that hung just out of reach and drove men crazy as they pined after beautiful women. Instead, Calisto is shown as a common man who falls in love with a woman within the tradition of the *amor cortés*¹⁰. It is simple and honest, but at the same time, Rojas introduces themes of darkness, passion, and jealousy around the central relationship (Parker 147). Pármene, Sempronio, and

⁸ Literally "Go-between;" normally a mid-wife or apothecary.

⁹ Honor.

¹⁰ Platonic love between two characters.

Celestina shoulder these topics into the acts and scenes of the drama. Despite her parents' attempts to secure Melibea from the corruptible influences of the world beyond her home, Celestina is able to penetrate these carefully laid defenses in order to waylay Melibea and subdue her for Calisto. This coercion and deception at the hands of an *alcahueta* represent Spanish folklore and superstitions of witchcraft and magic of women who were motivated by "ambition, bribery, lust, sensuality, and exploitation of those suffering" (Parker 149).

Amidst the deceit in the play, Rojas posits his characters as common people who do not stand on ceremony with one another. Parker explains that they use "catchwords," and "popular proverbs" of the time to reflect the relationships of those who were not members of the court or persons of nobility. She continues that this very manner of speaking and verbal expression is the exact same that Sancho uses in *Don Quixote* (149). Rojas develops his characters within a well-developed sense of realism. He presents them as they are: a reliable representation of a complete self. They scheme, they fail, they fall, and they die. He strips away their idealism and leaves them as hollow shells, perfectly imperfect as common human beings. This perception is also observed in Cervantes and in his development of characters. Readers, time and again, are able to glimpse the complexity of the characterization of Don Quixote and Sancho Panza. Cervantes' characters are not two-dimensional representations of antiquity, but rather, are literary figures who struggle against their environment and may succeed or fail in their fictional goals and aspirations.

Humor and the Picaresque Style

As the Renaissance begins to take root and grow throughout Spain, branches of literature begin to prioritize anthropocentrism rather than the standard theocentrism (Friedman 63). This

new focus on the person was much more in line with Italian Humanism rather than the strict religiosity of the Spanish Inquisition. With this turn in subject material, *La vida de Lazarillo de Tormes y de sus fortunas y adversidades* (*Lazarillo de Tormes and of his fortunes and adversities*) takes place within this socio-cultural context. Studios/reader/scholars are not sure who penned the work and although plenty of theories have been put forth, the work remains anonymously authored. *Lazarillo* is most famously known for its *picaresque* style in which little Lázaro takes on the qualities of an *antihero*. This literary style is based on the following principles: first-person narration, feelings of alienation and absence of a parent figure, steady role changes or the use of multiple disguises, and an ending open to literary interpretation (Schroth and Smith 2014). These traits mark the life of Lazarillo throughout the work. Right away, his introduction to the world strikes a different chord as he is born in a river. His father dies and Lazarillo is raised by his mother and stepfather, Zaide. Zaide steals for his family to remain alive; it is this mischief that incubates Lázaro from his early childhood. Eventually his stepfather is found out and is jailed. Fearing she could no longer care for him, Lázaro's mother implores a blind man to raise him.

Lázaro is forced to look beyond the normal structure of a family to learn about the world around him and internalize a certain moral code. In this manner, he does not have the chance to learn how to behave in society; he does not learn the difference between right from wrong. His internal moral compass points in whichever direction the blind man instructs him. To this end, Lázaro takes on the qualities of an antihero. He is rewarded for accomplishing the tasks of the blind man, but is punished when he fails. Often, his failures are met with shocking violence dealt swiftly and without remorse. As he moves from teacher to teacher, master to master, Lázaro

employs tricks and deceit to ensure he can provide for himself. If the reader decides to believe Lázaro, the adult character, and his story knowing his pattern of inconsistency, the relationship between Lazarillo, the young character, and the blind man forms the amusing foundation of the work. The blind man, *el ciego*, is crafty, cunning, and violent towards the boy on many occasions. The comedy manifests itself in three major forms: physical, social, and self-piteous. Likewise, readers may observe a combination of these forms of humor in *Don Quixote* and while the novel is not a picaresque one by any means, it includes characters that resembles these characteristics such as Ginés de Pasamonte.

In reference to humor, the most widely recognizable humor in *Don Quixote* is the physical comedy often as a result of violence. In *Lazarillo*, similarly, Lázaro's joy at sneaking a couple of drops of wine from the blind man's jar is cut tragically short as the man wakes up and smashes the jar into the boy's face. The description of the competing emotions of elation and pain render a comic scene in which Lázaro has victory snatched from his clutches with a swift blow to the face (Maier 683). This relation of violence and comedy is common throughout much of *Don Quixote* as well. For example, in chapter eight of the First Part, Don Quixote encounters the notorious windmills, which he visualizes as giants. He intends to do battle against his fearsome foes despite Sancho's warnings that the giants are nothing more than stationary windmills. Don Quixote will have none of it, though, and proceeds to charge the nearest 'giant' with his lance outstretched. Upon impact, his lance is shattered and both he and Rocinante were "whirled aloft and overthrown in very bad plight upon the plain" (1:88). This instance in the novel is characteristic of the humor that unfolds from some of Don Quixote's more erratic choices and actions. He resolutely denies Sancho's claims that the windmills are in fact, just

windmills and instead sallies into battle like any literary knight from the *libros de caballerías*. Don Quixote is unable to move after he is thrown from the windmills, but he does not speak of his pain and suffering. Instead, Sancho entreats Heaven to “have mercy” on both his master and him for their foolishness (1: 88). Readers are able to understand the humor inherent in the episode rather than witness the pain suffered by both protagonists (i.e. possible broken bones, bruised ribs, bleeding, that a normal injury may present).

Also notable in *Lazarillo* is the relationship between the blind man and Lázaro as an archetype for the Don Quixote-Sancho relationship. Barring the obvious differences (Don Quixote is not blind, Sancho is not an orphan) the constant back-and forth nature of their conversation and the differing roles they occupy connect the two works in terms of characters. Don Quixote often incites Sancho to pursue more erratic courses of action. For example, in chapter sixty-eight of the Second Part, Don Quixote explains to Sancho that Dulcinea may be disenchanted if he is willing to undergo a series of whippings and lashings. Under this literary construct, Sancho is trapped in the protagonist’s scheme to save Dulcinea and quickly backpedals in order to sidestep the onus that Quixote imposes (2: 853). The links between the physical violence in *Quixote* as a vehicle to convey comedy and a metaphorical relationship between an unconventional student and teacher pairing demonstrate the influence that the text of *Lazarillo* may have had on the text of *Don Quixote*.

Renewed Religious Fervor

The Golden Age represents an era in which the Spanish Inquisition was heavily active. Against the Protestant wave surging across Europe, Spain renewed the power of the Inquisition to slow the decline of Catholicism. Often times, the common people adhered to their faith to

placate the religious authorities and many professed belief in a sort of Catholic mysticism whereby, a sinner could reach spiritual unity with God through quiet contemplation and introspection (Méndez et al., 116). Since her death in 1582, no other name has been more closely intertwined with mysticism than Santa Teresa de Ávila (also known as Teresa de Jesús). Before her canonization in 1622, Santa Teresa was an author who wove religious themes into her writings at every turn. Teresa de Jesús was a strong ally of the Counter-Reformation movement where she lent her voice to female religious officials and pushed back against the Protestant masses.

At their core, Teresa's writings are a Catholic manifesto and guide to spiritual mysticism. As a nun, she endeavored to connect with God through self-reflection and prayer; she then published her experiences about her religious journey. Amidst the schisms between different Christian movements, Teresa offered penitents an attractive method of rekindling their Catholic faith and growing closer to the Divine (Méndez et al., 116). In both her autobiography, *Libro de la vida*, and in *Libro de las moradas del castillo interior*, Teresa contends that the key to understanding God lies within each person and may be unlocked if one is willing to spend the necessary time in His presence.

In *Castillo interior*, Teresa constructs a metaphor of inner "mansions" within the human mind through which Catholics may walk on their journey to discovering a deeper connection with their faith. She describes her soul as a crystal in which she found God after traveling through her own interior rooms. Only once she accepted that God and her soul could, in fact, share the same dwelling place did she realize that "God was infinitely near" and that neither spatial arrangement nor "sinfulness" could obscure her spiritual connection (Minnema 601).

Honor Conflicts

Literature of the Golden Age often incorporated themes and elements paramount to the storytelling style present in the Middle Ages. In doing so, it bridged the new literature of the Renaissance and Baroque periods with the concepts of the Medieval Pyramid and the honor code common among feudal kingdoms up until the 1500s. Honor guided nearly all interactions among common people of the Spanish kingdom and most conflicts and altercations grew from ruptures in the code of honor (Ingber 235). In literature specifically, honor conflicts manifested themselves in two ways: conjugal issues between a husband and wife and love-based obsessions that require a restoration of honor in some form or another. Ingber opines that no other Golden Age dramatist was more adept at illustrating these elements in his written works than Lope Félix de Vega Carpio.

Lope de Vega was arguably one of the most accomplished playwrights of the Golden Age. His plays are renowned for their heavily Baroque elements that garnered support from even his most begrudging critics. Although Cervantes and Lope de Vega had a rather tumultuous and dark relationship, readers may notice many similarities in subject matter and character development between their major works (Ingber 234). In *Quixote*, the protagonist encounters different groupings of characters who insult his gentlemanly sense of honor. As a knight, Don Quixote takes these offenses gravely and often rounds on his offenders to deliver a swift blow of retribution. In chapter four of the First Part, Don Quixote encounters six merchants from Toledo on the road. He entreats them to admit that Dulcinea is the most beautiful maiden they have ever met. They respond in kind that they would gladly do so upon seeing a picture of her and will still admit it if she is “squinting with one eye, and distilling vermilion and brimstone with the other”

(1: 68-69). This response enrages Don Quixote who immediately flies at the merchants; however, Rocinante loses footing and both knight and steed go tumbling down. The protagonist views this joke about Dulcinea's complexion to be a grave affront to both her honor as well as his stand. In his mind, he is justified in attacking his aggressors because they have impugned both knight and maiden. Furthermore, the concept of personal honor and how to restore it once it has been lost is explored in Vega's *El caballero de Olmedo*.

In this play, a knight, Don Alonso, falls in love with Inés at a fair and cannot avoid thinking of her beauty. However, Inés has already been promised to Don Rodrigo. Don Alonso enlists the help of an *alcahueta* named Fabia to declare his love to Inés. Similar to *La Celestina* by Rojas, *El caballero de Olmedo* employs a *tragicomedia*-like structure in which a powerful, deceitful woman creates love between two central characters. In this case, Fabia wrote and carried a letter to Inés detailing don Alonso's love and secret feelings for her. Inés instantly falls for the man behind the words, and turns her attention to Alonso. After this first act, the conflict in honor begins to take root in the plot. Don Rodrigo argues that Alonso has lost his honor in enlisting the help of Fabia to charm Inés. Fabia becomes a dark enchantress who seals the fate of our protagonists (as well as the antagonist) by manipulating the spectrum of human emotion. She creates love between Alonso and Inés and conjures jealousy between Rodrigo and Alonso. In this manner, she derails the comedy that Lope began in the first and second act and converts into tragedy. Rodrigo loses his honor after ambushing and murdering Alonso, but the great arbiter of it all, Fabia, lives on at the end of the play (Powers 53). Honor as a system of conflict and resolution prevails in *El caballero de Olmedo*. It also forms an integral part of the backbone in *Quixote*. Vega, alongside Cervantes, creates a literary environment in which individual

characters quest for their honor. Each may seek to protect theirs or to restore it; nevertheless, it is clear that honor represents the single most common cause of tension in Golden Age literature.

CHAPTER 2: HISTORY OF MEDICINE IN SPAIN

Despite its status as a fictional piece, *Don Quixote* contains medical and scientific elements from three different periods of Spanish history. Before evaluating the work for its inclusion of neuroscience and psychological topics, it is first necessary to elucidate this medical knowledge and investigate Cervantes' acquisition of it. It is well known that Cervantes traveled extensively throughout Europe during his later formative years (López-Muñoz 489). In doing so, he undoubtedly came into contact with medical history and became even more familiar with medical practice. In countries like Italy and France, medical breakthroughs were documented and chronicled as both areas faced scientific growth. During the Medieval and Renaissance ages, Spain often lagged behind its European contemporaries as the Spanish Inquisition instituted a tight vice grip on the country's societal and moral standards. Science was often viewed as contrary to religious doctrine and for this reason, many philosophers and intellectuals were punished harshly or outright silenced. This intervention on the part of the Inquisition left it difficult in many senses for medical authors to distribute and circulate their works. Medical texts that challenged the conventional wisdom of the connection between the body and the soul survived only as clandestine copies passed from family to family. This was certainly the case for Juan Huarte de San Juan and his *Examen de ingenios* that was targeted and heavily expurgated by the Spanish Inquisition for its supposed elevation of science and naturalism above religion in importance (López-Muñoz 492).

In illuminating the medical references and inclusion of scientific topics in *Quixote* it is prudent to first construct a timeline of medical knowledge and subsequent advances in medical understanding in Spain until the time of Cervantes. This study will present authors and

contributions from classical antiquity, the Medieval Age, and the Spanish Renaissance to establish considerable points from where it will be possible to trace medicine along defined historical lines. First however, Cervantes himself will serve as a harbinger of medical thought, hailing medical breakthroughs and employing scientific understandings to critique Spanish society.

Cervantes and Medicine

Despite the threat of censorship from religious officials and the difficulty in cataloguing medical knowledge, many humanists, naturalists, and philosophers were able to chronicle the medical breakthroughs and base of understanding during the Golden Age. These medical historians—sometimes practitioners themselves—risked persecution and ridicule to disseminate their findings and track the evolution of medicine. However, it should be noted that Cervantes himself was not a passive spectator in these endeavors nor was he a mere witness to these bold, new directions of scientific observation. Rather, he participated both directly and indirectly in enshrining medical innovation in the pages of Spanish history.

First and foremost, Cervantes' great-grandfather, Juan Díaz de Torreblanca, was classically trained in medicine and served in Córdoba as a surgeon (López-Muñoz et al 490). While he never met his great-grandfather, Cervantes was privy to his family's medical knowledge through Juan Díaz's grandson, Rodrigo de Cervantes. Rodrigo was an apothecary-surgeon who specialized in mixing herbal remedies, bloodletting, and patient evaluation (490). Additionally, Cervantes, sister, Andrea, was a nurse of the age. This large network of family members entrenched in the medical sphere provided a sort of inheritance for Cervantes to claim in his career.

As an avid reader, Cervantes used literature and his voracious appetite for reading to his advantage, often assimilating concepts and theories with which he was familiar into his own writing. To this end, he possessed a rather large library for citizens of the age. Throughout his life, when he had means and the ability to do so, Cervantes collected volumes and tomes for his personal library. As Daniel Eisenberg notes, over the course of his life, Cervantes gathered approximately 214 manuscripts into his personal library (94). Chief among these are renowned medical texts and important manuals on surgery and treatment authored during the Golden Age. These include the following titles: *Libro de las quatro enfermedades cortesanas* by Luis Lobera de Ávila, *Práctica y theórica de cirugía en romance y latín* by Dionisio Daza Chacón, *el Dioscórides* by Andrés Laguna, and *Examen de ingenios para las ciencias* by Juan Huarte de San Juan (Eisenberg 95). These works were well-known and designated as prominent medical texts of the day. Cervantes acquired copies of them throughout his life or as inherited copies from his father's library, but no matter how he came by them, it is certain that he retained them or sought them out for a specific purpose.

Furthermore, Cervantes had experiences with a hospital during his residence in Sevilla. The Hospital de los inocentes was a treatment center that functioned more as a prison whereby those who were considered crazy or demented were sequestered away from the rest of Spanish society (López-Muñoz 490). The prevailing belief in some literary circles is that Cervantes mentions the hospital and some of its patrons in *Quixote* in order to venture a social commentary on the state of mental health and or the treatment of psychiatric patients in Spanish society (Alonso-Fernández 47). It was often the case that patients at the hospital were abused and neglected and were treated with very little dignity. Some of these patients may have served as

archetypes for some of the more erratic characters in his works (López-Muñoz 490). Further evidence of Cervantes' relationship with the Hospital de los inocentes can be seen in the preface of the second part of the novel in which Cervantes gives a brief description of "a certain madman" in Seville with the "most diverting whim that ever entered the brain of a lunatic" (2: 545). "Another idiot in Cordova" is mentioned a little later in the preface in order to establish a greater presence of Cervantes' understanding of hospitals and interaction with those on the margins of society (2: 545).

Classical Antiquity

Before exploring the tumultuous events of the Middle Ages, it is necessary to begin any discussion of Spanish medical history in classical antiquity. It is during this period where medicine reaches a proverbial fork in the road and two schools of thought develop to answer a singular question: what is the role of a physician in society and what should characterize him? In seeking a true, open answer to this question, intellectuals and medical scholars turned to the theory of medical Galenism modeled after the writings and observations of the scholar Galen.

Before Galen however, Hippocrates ruled the intellectual world of medicine in Greece. His ideas and observations influenced Galen and served as reference points to a much lesser extent in modern medicine. Many Greek works on medicine are attributed to him, even though it is not clear how many of them were concretely written by him. The Hippocratic School is credited with developing the prevailing theory of sickness in medieval medicine governed by imbalance of the four humors. According to Hippocrates, the four humors, or cambia, are as follows: yellow bile (hot and dry), blood (hot and wet), black bile (cold and dry), and phlegm (cold and wet) (Emery 198). Each of the humors was related to an organ in the body and an

element. In his article, “Hippocrates and the Oath,” Alan Emery explains that yellow bile was connected to the lungs and represented water; blood the gallbladder and signified fire; black bile the spleen and embodied earth; and finally, phlegm the head and stood for air (199). He furthers that human dissection was largely forbidden in Greece and so medical practitioners explained disease as an imbalance of the four humors. This idea prevailed in many regions because of the Church accepting the humors as the basis for causative agents of disease (199).

In the second century A.D. Galen was born in Pergamon. In true Roman fashion, he accepts the ideas and findings of Hippocrates, but expands upon them, constructing a new base of medical knowledge. He studied medicine in Alexandria for four years and is largely considered the foremost source on the knowledge and information contained within the massive library at Alexandria. As a philosopher and anatomist, Galen understood some of the complex relationships with the human body. He espoused a belief in the encephalocentric theory in which the brain occupies the seat as the main control center of the body for movement and sensation (Frutos 418). Arguing that a “mental pneuma” diffuses from the brain, to the blood, and finally into the nerves to fully disseminate throughout the body, Galen believed the brain was the true seat of coordination of the principle of life. This neurological theory is one of the first in the Roman Empire to superficially assess the brain and nervous system (Martín-Araguz 878). This observation alone speaks to the focus and expertise of Galen as he nearly identifies the connection and role of the brain in the body.

Galen respected Hippocrates and often argued in favor of his views on the four humors. As a new voice, however, Galen demonstrated that anatomy could not be separated from medical discovery and that if people were to understand disease and impairment of function, a greater

focus on anatomy would be necessary. Working in Alexandria, Galen dissected animals and related his discoveries of function to humans. During his studies, he was able to correctly describe the “upper palpebral muscle, the buccinators muscle, and the palm, sole, and interosseous muscles of the hands and feet” (García-Ballester, 19). Though neither Hippocrates nor Galen lived during the Middle Ages, their medical discoveries and contributions to the field heavily influenced the practices evinced during the Renaissance.

The Medieval Age

As one of the few western countries fortunate enough to experience two periods of rebirth in the humanities, arts, and sciences, Spain accelerated breakthroughs in key fields and enjoyed new advances in the functioning of daily life (Martín-Araguz et al 877). The first of these renaissance periods was the Muslim acquisition of the Iberian Peninsula in 711. During this foreign occupation of Spain by the Moors, the country experienced a renewed intellectual focus whereby many fields grew and produced new ideas, texts, and even inventions (Cruz-Arroyo 54). Chief among these areas of science and the arts was medicine in which gifted Arabic philosophers added their voices and expertise to the ever-changing mosaic of medicine in Western Europe. These medical philosophers will be discussed for their contributions to society and their adoption of Galenic values from classical antiquity with a focus on their understanding of neuroscience. Each of the intellectuals mentioned authored texts or left behind detailed records of his observations so that his purview of medicine might be catalogued and read by later generations.

Abulcasis

Abul Qasim Khalaf ibn al-Abbas al-Zahravi, or Abulcasis, was born in 936 A.D. in Córdoba. A surgeon and medical specialist, he sought to improve the then widely accepted practices of surgery by devising new surgical instruments and tools. Additionally, he wrote one of the first medical encyclopedias for a universal audience (Martín-Araguz et al 883). However, his crowning achievement and contribution to the medical world of Spain is undoubtedly his work in the field of neuroscience. His written work *Kitab al-Tasrif li man ajaz an-il-talif*, contained thirty treatises on medicine and illustrations demonstrating his ideas on surgery and his development of new tools (885). In startling detail, he covers a slew of neurological disorders and abnormalities and accompanied them with images to enhance his discussion. These included: trepanation and in tandem evaluations of intracranial hematomas¹¹, infantile hydrocephalus¹², cauterization of vessel wounds inside the brain, and the neurological implications of vertebral fractures in the spinal column (Goyanes-Capdevilla 202).

Avenzoar

Abu Marwan Abd al-Malik ibn Zuhr, or Avenzoar, was born in 1091 and was often considered the most important medical philosopher since Galen (Martín-Araguz et al 885). Avenzoar was a true renaissance man in that he authored medical texts, founded a medical school for the instruction of contemporary practices and prevailing medical thought, engaged in clinical practice himself, and began discussions of a holistic sense of health in society. He covered many different topics in collective health including the importance of nutrition and

¹¹ A collection of blood in the brain caused by a ruptured blood vessel within the brain.

¹² Condition that affects infants whereby their brain is compressed by excessive fluid.

hygiene, the need for therapy and psychotherapy, and the case for simplifying surgery and other medical techniques (Vernet 451). His approach to medicine emphasized experimentation and careful observation rather than discussion of the soul and body as interconnected vehicles to describe imbalances in health. Avenzoar was the first to clinically elucidate meningitis, intracranial thromboses as a result of internal ear infections, tumors of the mediastinum, and symptoms of an early understanding of myasthenia gravis¹³ (Vernet 455).

Averroes

Abul Walid Muhammed ibn Ahmed ibn Rushd, or Averroes, was born in 1126 in Córdoba. Today, he is often cited as the most influential scientist and Arab thinker of the Iberian Peninsula and is touted for his thoughts and ideas that accelerated changes in Spanish technology and society as a whole (Cruz-Hernández 239). He understood Aristotle very well and often wrote about the Greek philosopher's ideals in his own works. This classical influence served as a template from which Averroes was able to articulate his own ideas about medicine and the greater field of science in Spain. Besides medicine, Averroes was experienced in technology, astronomy, pedagogy, jurisprudence and law, philosophy, and music (Martín-Araguz et al 886). Nevertheless, he was arguably most active in the field of medicine and public health where he became one of the first medical scientists to identify the eye as the organ for reception of light. As a pupil of Aristotle, he conducted experiments to verify the effects of inhaled vapors on epilepsy and the possible causes for migraines (Martín-Araguz et al 886). Finally, he authored *Los comentarios a Galeno* in which he described—for the first time in the scientific community—the symptoms of parkinson's (Rodríguez-Molero 55).

¹³ Weakness and fatigue of muscles under voluntary control (e.g. legs, arms, hands).

Renaissance

Medicine in the Renaissance era was marked by a resurgence of Galenic values and the belief in the humors as determinants of health and disease. Doctors and physicians were able to recognize and classify diseases and sicknesses with much more ease, but their efforts in actually curing conditions remained at the level of the Middle Ages. Principal amongst their techniques in diagnosis were evaluation of the humors and body temperature. Medicines and curative agents were classified according to temperature and whether or not each had a ‘dry’ or ‘wet’ component. Most agents included laxative elements or “evacuants” like hellebore or parasites such as leeches (López-Muñoz 434). Additional materials employed were quinine, mercury, wormwood, wax, assorted cordials, and cantharis powder. Manipulation of the skin using friction and cauterizing agents were also utilized. The belief remained that maintenance of the humors was vital to health and each level could be adjusted using the aforementioned agents to rid the body of too much of one type.

The Renaissance period is also well known for documenting medical advances and progress in treating certain illnesses and conditions. This was the age of alchemy, the predecessor to modern chemistry, and while a certain air of mystery surrounded the process, it laid the foundation for a more empirical process. Legends of creating gold by mixing chemical substances and finding the famed philosopher’s stone initially hindered the birth of a true scientific process. However, the desire to learn more about the properties of nature and experiment with different substances to create oils and ointments with restorative properties spurred intellectuals to develop alchemy into chemistry. Their efforts yielded the first ‘pharmacopoeia’ in Florence in 1498 and the second one in 1511 in Barcelona (López-Muñoz

434). These pharmacopoeias existed to standardize formulas and compile chemical information across regions in Renaissance Europe. Previous medical texts experienced a resurgence in importance, especially el *Dioscorides*, a classical text edited by Andrés Laguna. Cervantes references this work in *Don Quixote* by integrating elements of pharmacotherapy into his masterpiece as evidenced in the next section.

Pharmacotherapy

Pharmacotherapies during the Renaissance consisted of assorted poultices, ointments, oils, syrups, and balms prepared by various professionals. These mixtures had different properties and not much care was given to cross-reactions or taste if the remedy was administered by mouth. In these instances, pharmacological preparations could be astringent, caustic, bitter, purgative, or cause rather unpleasant side effects. One of the best illustrations of this concept was the balm of Fierabrás mentioned ubiquitously in *Don Quixote*. Most notably, the preparation- once ingested by Sancho Panza- induces violent vomiting and an entire cleanse of his stomach. The main element in the balm is identified as rosemary, and in classical texts of the period, rosemary is designated as a purgative element in many pharmacological preparations. Another common purgative was Chinese rhubarb (monk's rhubarb). Medicinal plants and 'phytotherapeutic agents' were described in detail in many of the tomes and volumes of the ages. Sedatives were used as well and the most common, of course, was opium. Often times, opium was mixed with cinnamon, saffron, and cloves and "dissolved in wine" and then used in various therapies (López-Muñoz 435).

Neurophysiology

In a different current entirely, Miguel Sabuco developed his own ideas about medicine during the sixteenth century. Enraptured with emotion and its applications and relationship to health, Sabuco articulated theories about holistic health. In his work, *Nueva Filosofía* (1587), he wrote extensively about emotion and its effect on health; he documented both positive and negative impacts and their subsequent changes and modifications on behavior. Before any other author who made reference to emotion and medicine, Sabuco is credited with elucidating the concept of psychosomatic sickness- that is to say- the capability of emotion or a state of mood to affect health (Martín-Araguz 1194).

His contributions to psychology and the study of the brain extend beyond the realm of emotion, however. In an empirical sense, he conducted experiments and observed patients to learn more about the brain and its associate processes. He is the first scientist and intellectual of the Renaissance age to justify his ideas of a “suco nerveo” or “jugo nervioso” (Martín-Araguz). This substance was a rudimentary explanation of the neurotransmitter substance known to be the mode of transmission of action potentials in nerve cells. Sabuco’s observation and description of this phenomenon speaks to his knowledge as a scientist and a medical historian. As a pioneer in the field of neurochemistry, Sabuco paved the way for researchers after him to publish their findings and add their collective knowledge to an existing body. His discoveries advanced neurology of the age and opened new doors to research in order to ascertain the true origins of functions. He accorded the brain more coordination of function and general importance than even Galen did. In this manner, Sabuco vaulted the brain and its mystery into the Renaissance spotlight (Martín-Araguz 1197).

CHAPTER 3: THE PREVALENCE OF PAIN

The majority of this following analysis shall stem from scrutiny of individual episodes and occurrences in both, the first and second part of *Don Quixote* in order to gather evidence on neurological and psychosocial phenomena. It has already been determined that Miguel de Cervantes had developed and professed a supreme knowledge of medicine despite having no formal training as a physician of the times. This idea is further evinced as he describes pain in corresponding chapters and the lack of it in others. Pain in his work constitutes both a plot element and a tool by which the author reveals details about Don Quixote's motivations and actions. There is a great deal of confrontation within the work itself and which stems partly from Don Quixote's seeming inability to step away from his constructed reality of knighthood under the Monarchy of Spain. Max Ubelaker Andrade makes the argument that Don Quixote meets two types of characters during his adventures: those who willingly participate in his reality where he is a knight and has a squire named Sancho Panza and those who reject this ideal world in favor of labeling the protagonist as a madman (89). This section will select representative character-character interactions to evaluate that this 'what?' is largely the case for the duration of the text. Furthermore, each character that chooses to believe or participate in Don Quixote's interpretation of events and subsequently is injured by him, quickly "exits" their role and labels the protagonist as a *crazy* person (Andrade 88).

The Fork in the Road

Cervantes constructs Don Quixote's landscape as an amalgam of different plots and facets of the *libros de caballerías*. These epics are largely inconsistent and out of touch with the Baroque society in which the protagonist actually lives and exists. He is a viable anachronism, a

relic of the past living in the distant future. As such, his mannerisms, interactions, and thought processes are incongruent with those of the literary characters whom he encounters in various chapters of the work. When confronted with the seeming madman before them, Cervantes' characters arrive at a proverbial fork in the road: they can either accept his altered version of reality in which the Spanish Monarchy still sanctions knights to travel the land on righteous adventures, or they may reject Quixote's world and refuse to partake in his antics. Those who choose to participate in his constructed version of reality are well aware of what they are undertaking; they accept the risks and rewards of entertaining the protagonist and his literary personality.

The first time this choice is elicited is in the third chapter of Part I in which the patrons of the inn attempt to move Quixote's armor. Fearing someone is attempting to get the better of him, the protagonist attacks both men and lays them out. In response, others at the inn begin to stone him and incense his anger. The innkeeper fears a true confrontation between the knight and the other characters at the inn in which the strange man might harm or kill those throwing stones. The innkeeper quickly agrees to 'knight' Quixote and convinces him to leave thereafter before more pain may be inflicted on any innocent bystanders (1: 61). As this scenario may illustrate, the innkeeper and patrons of the inn quickly realize that there are severe repercussions for entertaining the idiosyncrasies of the knight. Each exits his or her role as a supporter of the reality envisioned by Don Quixote and swiftly rejects his behavior. This exiting of roles and choosing of interactions allows Cervantes to selectively describe pain and its relevance as a plot element. While the characters Don Quixote meets are free to choose their path at the literary crossroads, the protagonist is constrained by his literary prison. He wears his characterization as

armor and cannot function outside of his concept of knight-errantry. His violent outburst at the inn demonstrates that he does not understand others' seeming rejection of his choices and actions. Andrade presents another strong example of this phenomenon in Part II, chapter fourteen in which Don Quixote vanquishes Sansón Carasco, the Knight of the Mirrors. During their duel, Don Quixote unhorses Sansón Carasco and he is revealed as an imposter. The protagonist requires that Carasco travel to Toboso to tell of his defeat to Dulcinea. Together with his squire, Tomo Cecial, Carasco in "exceedingly bad humour and evil plight" departs to "beplaister and besplinter" his ribs (2: 653). The Knight of the Mirrors and his squire are unmasked quite literally by Don Quixote and Sancho after Quixote succeeds in defeating the knight in a duel. After their trick is revealed, Cecial and Carasco sidestep their temporary literary commitment to the protagonist's version of reality and instead return to the non-imagined world of their lives. The pain that Sansón Carrasco experiences at the hands of Don Quixote convinces him that the protagonist's perceived farce is not innocuous.

This exiting of roles after willingly choosing to participate in the knight's "farce" recurs often throughout both Part I and II of the novel (Andrade 89). Characters can fluidly move in between the boundaries of one existence or the other, but Don Quixote is trapped between his self-imposed literary constraints. Charmed and enchanted by the *libros de caballerías* he has no choice but to continue his adventures and journey as a true knight. He experiences pain and suffering in a manner divergent from the supporting characters of the novel. When each of them experience pain, especially at the hands of the protagonist, they escape his version of reality and reject his interpretation of societal events.

Italian *Commedia Dell'arte*¹⁴ and the Slapstick Humor

Andrade furthers that episodes in which the protagonist experiences physical pain are equally important-if not more so- in understanding Cervantes' literary constraints on his knight (90). However, not every scene that involves violence in the work merits a discussion of pain and its possible meanings. Some of the violence presented in the different chapters of both parts of the novel seeks to incorporate a comedic undercurrent. For example, in the fourth chapter of the First Part, Don Quixote meets merchants traveling on a road and entreats them to recognize that Dulcinea of Toboso is the most beautiful maiden in all of the land. The merchants jibe that even if a picture of Dulcinea showed her "squinting with one eye" and "distilling vermillion and brimstone" with the other, they would confess that she is the most beautiful (1: 69). This sample of humor becomes a personal affront against the honor of Dulcinea, and so, an enraged Don Quixote levels his lance and charges the merchant caravan. Unfortunately for him, Rocinante loses footing and both knight and horse topple to the ground. Responding in kind, a merchant vents his anger, snaps the knight's lance, and proceeds to mercilessly beat him with the shards. This profound anger and beating leaves Don Quixote unable to move at its conclusion. The weight of his armor and the pain he experiences precludes him from righting himself and continuing on with Rocinante. The situation is presented as a comedic event because Don Quixote does not complain of pain immediately, and his folly is the sole result of Rocinante being unsteady on his feet. This type of scene is characteristic of the Italian *commedia dell'arte* in which characters perform actions designed to elicit laughs from an audience rather than gasps of horror (Andrade 90). Another example of pain for comedy's sake occurs in chapter twenty-six

¹⁴ Artistic movement from Italy that used improvisation and masked characters to create comedic situations.

of the First Part in which Sancho fails to deliver a letter to Dulcinea. In his frustration and disappointment in himself, he grasps fistfuls of his beard and forcefully pulls them. In ripping out his beard hairs, little droplets of blood form on his face. Any average person would elicit distinguished signs of pain, would show agony, and would complain of his misfortune and self-inflicted suffering. Instead, Sancho does none of these things. His pain and misfortune is woven into the text to introduce his forgetfulness as a sense of humor. The reader is encouraged to laugh rather than scream at the grotesque description of facial mutilation (Andrade 91). The use of humor as a literary device segregates instances of suffering/violence/harm into two categories: either the characters-usually Don Quixote or Sancho- experience pain where the reader can reasonably expect there to be evidence of it, or they make no mention of pain and the reader is invited to view the scene as humorous.

Pain as Evidence of Multiple Identities

As previously discussed, in chapter IV of Part I, after soliciting a compliment about Dulcinea's beauty from two strangers, Don Quixote is beaten senseless with a broken lance. The two strangers cease joking with the protagonist and instead become enraged at his demands. Don Quixote falls from Rocinante, his horse, and becomes dazed, unable to move in his hulking armor. At first, no mention of pain is made in the text. Don Quixote lies along the path and is physically unable to move. However, as Andrade furthers, he experiences a literary constraint as well. He must first remember a story from his knights-errantry books in which a similar knight, brave Valdovinos, is similarly injured (Andrade 94). Then and only then, the reader may note that the protagonist begins to lament his pain and recount his ill fortune. This episode in particular is noteworthy since it demonstrates evidence that Don Quixote feels the need to

channel a different personality or wear other knights' attributes as he would armor. In chapter five of Part I, Quixote's neighbor happens upon the immobile knight in the middle of a path and endeavors to help him back to the village of La Mancha. Upon being placed on his neighbor's steed, Don Quixote forgets his previous channeling of the story of Valdovinos, and instead "recollected the story of Abindarraez" whom was taken prisoner by Rodrigo de Narvaez and was "carried in captivity to the place of his residence" (1: 72). The protagonist even converts Dulcinea into Xarifa, the love of the "captive Abencerraje." Pedro Alonso, the neighbor of Quixote, rejects these different invocations of literary figures saying, "your worship" is neither "Valdovinos, nor Abindarraez, but the worthy gentleman, signor Quixada" (1: 73). To all other characters, this splintering of personalities and refusal to portray the gentleman Alonso Quixada, represents a descent into madness. They feel that Don Quixote must see reason and swear off the *libros de caballerías* if he is to return to normal. This collective vestry of knights-errantry directs how he should behave in certain situations. In another well-documented example during the second part, the duke and duchess orchestrate a bag with cats (who have bells tied to their tails) to be dropped on the knight from above. In the darkness, Don Quixote attempts to discover the source of the noise and during the fray, a cat jumps on his face gravely injuring him. Andrade explains that the knight curses the demons and enchanters he believes are behind the tricks being played on him, and responds by affirming his own identity (96). He parades around as Don Quixote de la Mancha, the righteous knight who quests for adventures and justice to bring honors to his name and the sweet Dulcinea del Toboso. Finally, in chapter eight of the First Part, Don Quixote encounters the Biscayan in battle. After a particularly violent altercation, the protagonist succeeds in knocking his opponent so forcefully that he "began to spout blood from his nostrils,

mouth and ears, and seemed ready to fall from his mule” (1: 101). Additionally, Quixote’s left ear is partially chopped off in the scuffle. Instead of exclaiming in pain and lamenting his injury, the protagonist continues on his way with Sancho. It is not until the next chapter that Don Quixote mentions the pain, and even then, he is prompted by Sancho to discuss the injury. In this exchange, the reader encounters Cervantes’ tendency to tether the medieval hero to his literary environment. His pain and suffering does not allow him to exit his role as a character as it does for supporting characters in the novel. He must withstand his experiences and interpret them through the lens of chivalry as a knight-errant. This literary prison that Cervantes imposes on the protagonist indicates that he is incapable of returning to his true identity as Alonso Quixada. He is Don Quixote de la Mancha and exists in the new personality he has adopted as a result of his fascination with the *libros de caballerías*.

Pain as a plot element and literary device presents characters with varied options for interaction with the protagonist throughout much of the novel. While some characters may come and go, entering and exiting different roles, the protagonist and to a certain degree, Sancho Panza, do not have this chance. They are sealed into their literary roles and in the case of Don Quixote, pain serves as a vehicle to convey his fractured personality to the reader.

CHAPTER 4: MEDICAL AND PSYCHOLOGICAL EVIDENCE OF DISEASE

Accompanying descriptions of pain and its influence on the protagonist's actions and thoughts is the inclusion of references to medical knowledge and scientific phenomena as they relate to disease states. As previously discussed, Cervantes was inherently qualified to discuss medical terminology and processes as they appear between the pages of the world's first modern novel. Don Quixote functions as a literary character within the limitations of the novel, but this should not be construed to mean that every action he takes or every thought he processes is the sole product of his fictional environment. On the other hand, great care must be taken to ensure that characterization of a disease state or evidence of neurological disorders be balanced with a discussion of the prevailing literary/fictional elements of the work. Cervantes integrates both scientific principles, cultural aspects, and literary elements to produce a work that exists as both a masterpiece of storytelling and a medical source of knowledge. This analysis will highlight individual factors that may relate to an eventual diagnosis of the protagonist as he moves between the literary domains of the work.

Sleep Disturbances

A myriad of psychosocial symptoms accompany Don Quixote's ailments and complaints throughout the work. The most notable of these are sleep disturbances and irregularities. Most of the descriptions of these sleep anomalies apply to Don Quixote, and when taken together, they may suggest an underlying disorder or psychosocial condition. For example, in chapters one and eight of Part I, Cervantes suggests that Don Quixote suffers from generalized insomnia. The

books of chivalry have so consumed his interests that he often does not sleep through the night and has trouble putting his mind at ease. In *Neurology and Don Quixote*, José-Alberto and Fermin Palma contend that worrying over Dulcinea kept Don Quixote awake throughout much of the night. This insomnia signals his generalized fatigue during the day in many of the chapters of the work (249).

In chapter thirty-five of Part I, Don Quixote experiences a strange wakefulness and clarity in his dreams. In the sequence, he is fighting a giant, but in reality he is hacking wineskins apart. This inability to remain still while sleeping or at best to remain in a recumbent posture tells of a possible REM disease. Rapid Eye Movement (REM) disorder refers to the body's inability to control the muscles and prevent a sleeper from acting out even their most vivid dreams. In a 2015 study by Wiesner et al, memory consolidation was tested for emotional events in both REM-permitted patients and in REM-deprived patients. The purpose of this experiment was to determine the effect of REM cycles on a person's ability to remember vivid emotional events that are believed to be incorporated into the collective consciousness during the stages of sleep (Wiesner et al 2015). This idea of memory consolidation is part of a larger scientific hypothesis known as the 'sleep to forget and sleep to remember' hypothesis in which sleep becomes necessary to cement certain memories and dump other daily information that is not important enough to encode.

As early as 1960, researchers and scientists alike suspected REM cycles of having no particular function or exigency to neither the human body nor psyche. However, this determination was deemed premature when Dement and colleagues effectively demonstrated the pernicious effects of sleep deprivation on behavior and personality in the later half of the 20th

century. These effects included generalized “psychological disturbances” such as anxiety, irritability, and panic. To this end, Dement was able to encourage researchers to adopt a new stance according to sleep studies and became instrumental in pioneering studies about further effects of sleep deprivation—especially during the REM stage (1705).

These findings and previous scientific studies are highly important because they shed light on Don Quixote’s own possible psychological issues. While the only mention of a possible REM disorder occurs in the First Part of the work, the implications of this singular event portend a slew of symptoms just below the surface of the protagonist’s psyche. Don Quixote frequently displays erratic, irritable, panicked behavior in many of the chapters. These hallmarks are indicative of sleep disturbances overall and may signal an issue with his ability to progress into the REM stage of the sleep cycle each evening. Here, this analysis must reiterate that without more key descriptions of this nature, the *hidalgo* cannot be infallibly diagnosed with a REM disorder or other generalized sleep disorder. Nevertheless, as the ability to fall asleep, stay asleep, and remain asleep is absent in Don Quixote according to various chapters, he may be suffering from a generalized sleep disorder (Palma and Palma 250). Sleep disturbances, whether it be generalized insomnia or periods of wakefulness followed by deep sleep, indicate possible mental instability and may be associated with psychological conditions.

Hallucinations and Delusions

Throughout much of the novel, there is pronounced evidence of Don Quixote experiencing distortions of reality and mental hallucinations. Right from the beginning, the reader has the opportunity to witness this phenomenon within the first five chapters. In chapter two of the First Part, the protagonist rides up to an inn to lay his head for the night. Approaching

the inn from the road, he perceived the inn as “ a stately castle with its four towers and pinnacles of shining silver, accommodated with a draw-bridge, deep moat, and all other conveniences” (1: 52). He is so charmed by the castle and its environs that he continues his hallucinatory survey of the land; he remarks that the serving girls at the inn are- in actuality- “beautiful maidens, or agreeable ladies” (1: 52). He is unable to view the inn as it plainly sits atop the plain. Instead, the knight aggrandizes the place where he endeavors to pass the night, using his experience in reading to conjure the image of an impressive castle and fortress suitable for a knight of his stature.

The most common and well-known example of Quixote’s delusions and hallucinations manifests in the skirmish between the protagonist and windmills in chapter eight of the First Part. Riding along his chosen route, Don Quixote is taken aback at the brazen appearance of giants with large arms and battle-ready stances. Sancho makes every attempt to warn him that the giants are in fact just static windmills situated against the backdrop of La Mancha. Of course, his master does not listen and charges into battle without so much as a response to his squire. In a stroke of misfortune, the wind picks up enough to turn the arms of the windmill just right to catch the lance of the knight. He and Rocinante are both lifted into the air and are subsequently tossed aside. His accompanying inability to move and bruises are the direct result of his false vision (1: 89). Don Quixote, additionally, makes reference to countless enchanters and other sinister spell casters in the work. Often, these characters are normal literary figures whom he imagines as magically-inclined foes that through guile and the arcane arts, are able to trick him and impugn his honor. This belief in enchanters and illusionists signifies his departing from

reality and entrance into a fictional landscape. Both his physical and mental sight work to convince him that what cannot be, is, and exists in his sense of reason.

Traumatic Head Injury

In many episodes and scenes from the novel, characters are dealt blows to the head after participating in general conflicts and character-character altercations. As the great aggressor and instigator of much of the literary violence, Don Quixote is frequently the recipient of head injuries. In many of these cases, he is violently attacked and brutally assaulted by characters who reject his version of constructed reality. The best example of this phenomenon occurs in the seventeenth chapter of the First Part where an officer at the inn attacks the knight-errant for insulting him. “lifting up the lamp, oil and all,” he “discharged” it on the protagonist’s “pate, which suffered greatly in the encounter” (1: 159). Don Quixote is so injured by this blow that he requests ingredients of Sancho to distill a balsam that he claims will alleviate his pain and restore him entirely.

Another occurrence of grave head injury occurs in chapter nine of the First Part in which the conflict between the Biscayan and Don Quixote is finished. Narrowly dodging a sword stroke that would have split him to his hip, Don Quixote retaliates against his opponent, striking him in perfect formation where it was as if “a mountain had fallen on him,” for, “he began to spout blood from his nostrils, mouth and ears” (1: 101). This description of blood flow as a result of a savage blow against the cranium is indicative of a basilar skull fracture that impedes blood flow through the basilar arteries within the skull. This type of injury can bring about unconsciousness and is cause for serious concern if left undiagnosed and untreated (Palma and Palma 252).

Headaches

Although few and far between in the individual episodes themselves, headache does accompany some descriptions of pain in the work. For example, in chapter seventeen of Part I, Don Quixote is knocked on the head with a lamp. Afterwards, he complains of pain in his head as a dull ache rather than an acute pain associated with the blow (Palma and Palma 252). His acknowledgement of the pain is unique in that he admits his head hurts rather than discussing pain in a limb or another area of the body. This discussion of the pain is consistent with the medical belief of the times that some pain was directly associated with the brain (Martín-Araguz et al 886). As the seat of thinking and mental cognition, the brain could evince and experience pain like any other part of the body; this became a hallmark of the medical wisdom of the age.

Cervantes' inclusion of headaches and other pains associated with—either directly or indirectly—the brain and head signify his understanding of this condition. Contemporarily, headaches have become an area in neurological and psychological studies that provide key insight into the realm where biology and cognition meet. Typically, a confluence of factors is responsible for generalized, dull aching and throbbing sensations felt in the temples or other areas of the head/skull. These diverse factors may include dehydration, extreme emotional experience, physical trauma, neurochemical imbalances, etc. (Lake 715). In *Don Quixote* specifically, it is evident that the protagonist's complaints of headaches and generalized pain around his skull may be the result of some of these influences. In the chapter discussed above, the protagonist experiences headaches likely from the fracas in which he is smashed on the head with a lamp. This example of physical trauma is probably the most common source of his aches and pains throughout episodes of the work.

Cultural Dissonance

Don Quixote experiences a profound sense of cultural dissonance as well throughout the text. Because he has internalized the books of knights' chivalry and their heroic deeds, he lives within a Middle Ages-Renaissance mindset. However, Cervantes published the first part of the work in 1605, at the beginning of the Baroque period. In this respect, many of the interactions between Don Quixote and the supporting characters of the novel are disorienting because these interfaces among characters operate firmly within the modern mindset of the Baroque period while the protagonist functions within the past, evoking the tradition of medieval chivalry (Méndez, Harpring, and Ballesteros 301).

CONCLUSIONS

Despite its fictional characteristics, *El ingenioso don Quixote de la Mancha* exists as a veritable medical text. The descriptions of medical specialties within the work, especially those concerning neurology, psychology, and associated diseases and disorders are prevalent and well defined. Don Quixote is a complex character who experiences forces and factors associated with the literary constraints imposed on him by the author and the symptoms he exhibits as the result of a possible disease state. In diagnosing the character, it is important to integrate both of these elements to ensure that neither completely dominates the discussion of the primarily fictional character. However, before progressing to discuss possible disease states and confer a diagnosis on the protagonist of the novel, it is prudent to review the methodology of the study and revisit the research questions presented at the outset of this research probe.

Review of Methodology

Interestingly enough, a 2008 study compiled by the American Headache Society led by Dr. Lake, reviewed the past literature in headache studies. In this article, an excerpt from Shakespeare's *Othello* makes an appearance. The selection is used to illustrate Othello complaining of headache after considering whether or not he believes his wife was unfaithful to him (Lake 714). The inclusion of a scene from British literature in a prominent scientific article mirrors the methodology and breadth of this study in which a fictional text and novel served as the basis for scientific analysis. This movement evinced in the 2008 article is indicative of a greater movement in literature to exhume texts and pieces of literature typically considered for their merit in writing style or discussion of historical and societal contexts of the time periods in which they were written, and instead shifts them behind the magnifying glass of science whereby

researchers and accomplished professionals investigate the works for evidence of breakthroughs and general evolution and innovation. As the second chapter of this thesis demonstrates, the progression of medical knowledge in Western Europe—and more specifically—in Spain was staggering considering the society’s lack of contemporary medical technology and understanding of the human body and psyche. Most of these breakthroughs (as noted in the second chapter) were extracted from medical texts and other works of literature at the times by scholars, historians, physicians, and other professionals. What is even more fascinating is that this method of learning about medicine through literature is not a new one.

Gifted scholars and medical professionals alike have cited *Don Quixote* throughout the ages, praising Cervantes for his understanding of medicine and his inclusion of insightful descriptions of health complications and psychological disturbances. References to the novel and the protagonist himself may be seen between the pages of Dostoyevsky and Twain and on the canvases of Dalí and Goya (Palma and Palma 248). In medicine, Freud frequently discussed *Don Quixote* as a model case for analysis, the neurologist Santiago Ramón y Cajal referenced the work in many of his writings about his discoveries, and even Sir William Osler (often considered the ‘father of modern medicine’) included the novel in his “list of bedside books for medical students” (Palma and Palma 248). In the eyes of these accomplished researchers, the novel served much more than a literary purpose; for them, they were able to identify its scientific roots and laud Cervantes for his understanding of medicine as someone who was not directly related to the scientific practice. These citations lend validity to this current study in which modern applications and standards of medicine are interpreted through the lens of functionality.

The term *functionality* takes on a new meaning here in which it can be used to diagnose Don Quixote as if he were a patient in a modern doctor's office. In diagnosing him, it is necessary to look at both the physical and psychological sources of his pain as a deviation from the normally accepted standards of a *functional member of society*. To this end, the next section will discuss his symptoms as they are presented throughout the work and will then proceed to a logical, step-by-step analysis of the most likely disease or disorder that the protagonist displays in the novel.

Diagnosis

In arriving at a concrete diagnosis of Don Quixote, it is important to reiterate that medical evidence taken from the work was counter-balanced by a discussion of the literature of the age and the fictional basis of the novel itself. In other words, not every description of pain in the work or changes in behavior is indicative of medical imbalance or merits scientific inquiry. *Don Quixote* was first and foremost a work of fiction and as such, readers and investigators must keep this tenet in mind when analyzing the work for evidence supporting theories and ideas of disciplines outside literature. Discussions of the literature and the norms covered in the genres of the Golden Age are included in the first chapter of this study in order to provide the counterpoint to a pure scientific analysis.

Furthermore, in the fourth chapter of this study, evidence of both neurological and psychological disturbances and conditions were presented as clues to what overall disease state the protagonist may actually have. Together with descriptions of pain as evidence of mental, emotional, and psychological anguish, this study makes the determination that at some minimum basis, a designation of disease may be reliably applied. However, as diagnosing a literary

character with whom the researcher cannot query and with whom the reader cannot openly interact is a delicate process. This analysis will now advance to demonstrate how Don Quixote may be diagnosed with a psychological mood disorder.

Other authors and studies have proposed disorders ranging from simple malnutrition and scurvy to cerebellar disorder and cognitive impairment (Palma and Palma 255). The most specific disorder was proposed by Palma and Palma in their 2012 article, “Neurology and Don Quixote.” In the study, they read the work from their perspectives as neurologists and extracted the areas of medicine that contribute to today’s understanding of neurological disorder. In so doing, they arrived at the conclusion that the *hidalgo* may be diagnosed with a type of dementia known as Lewy Body disease in which plaques of neuronal cells build up in the brain and impair cognitive function—especially memory recall (Mayo Clinic). Lewy Body disease normally presents with confusion, parkinsonian-type movements, lapses in memory, and disturbances in sleep like REM disorder. From the evidence presented in the novel, this disease state is a likely diagnosis for the protagonist based off of the descriptions Cervantes provides to the readers of Quixote’s strange behavior. However, as Mayo Clinic’s studies indicate, normally an EEG (electroencephalogram) and/or a brain imaging technique such as a CT scan or MRI scan is used to differentiate Lewy Body Disease (LBD) from Alzheimer’s or another neurodegenerative disease such as Creutzfeldt-Jakob syndrome. Here the 2012 study encounters a significant constraint in its ability to assign a diagnosis to the character. In the day and age of Don Quixote, medical scanning technology and other cursory diagnostic tools were not available. As such, diagnoses that require a discussion of physical etiology—as is the case with the plaques in LBD—will be less accurate since they fail to meet those standards in diagnosing.

Along this line of thinking, this thesis proposes a more psychological and cognitive disorder rather than one based off of physical causes. In this case, the most likely diagnosis for Don Quixote is a mixed-type delusional disorder that incorporates both a *grandiose* subtype and a *persecutory* subtype. As *Psychology Today* concludes, a *grandiose* type of delusional disorder encompasses thoughts and cognitions in which a person believes they he or she has a “special identity or talent” and describes a *persecutory* type disorder as one in which a person believes he or she is being spied upon, swindled, or being taken advantage of. Evidence for both of these are documented throughout the work as Don Quixote frequently adopts the mantle of a knight of the Spanish Crown. Additionally, the pain he experiences at the hands of others who do not agree with his version of events or interpretation of society eclipses a sense of persecution he feels frequently.

Pain informs the reader that as Don Quixote progresses through the novel, sojourning more and more in search of new adventures, he experiences pain countless times. His aggressors inflict pain on him as they reject his ideal world of chivalry and the medieval code of honor or as they receive pain and injuries from the protagonist. Pain presents supporting characters with a choice in the novel: they may continue to corroborate the knight’s version of events and background, or they may “exit” their role in his world and return to their primary objectives and fictional constructs. Readers are able to understand that pain signifies continued damage and injury to the protagonist’s mind and body. While there are specific scenes of pain that elicit a laugh and encourage the audience to ascribe humor to the situation, the overwhelming majority of chapters that include pain do not inspire this interpretation.

In synthesizing the plethora of signs and symptoms Don Quixote exhibits at one point or another in the novel, it is reasonable to conclude that a medical diagnosis of some neurological or psychological disorder may be affixed. Head trauma and headaches may lead to any number of serious issues involving increased intracranial pressure, loss of memory, and/or associated symptoms or disease progressions. Hallucinations and delusions, on the other hand, are indicative of a psychological disorder involving issues with the parietal lobe (the sensory cortex of the brain that accepts and transmits information as it relates to the five senses). Together with sleep disturbances brought on by the protagonist's constant worrying over Dulcinea and his preoccupation with the *libros de caballerías* point to a more concrete damage or impairment of different lobes of the brain. Therefore, keeping in mind the lack of resources to assure a concrete diagnosis, this thesis defaults to a label of mixed-type delusional disorder that is supported by both neurological and psychological symptoms.

Future Plan of Study

As has been detailed extensively before, this study is one of the first of its kind to consider literature and medicine side-by-side in the same arena to reach a more interdisciplinary conclusion about the character of Don Quixote. The implications and discoveries from this thesis fit well with the current vein of historical investigation in literature in which experts in chosen fields pore over classical texts and popular novels of given periods. These experts seek to establish a timeline whereby academia may evince evolution of a given field (in the case of this specific project: medicine). Therefore, this study remains a starting point from where medicine in Spain may be further examined through the lens of other Cervantine works or by carefully

reading other texts from later periods in Spanish history to advance the medical timeline in the direction of contemporary society.

Consequently, a second research project has sprouted from the roots of this current one in which *Don Quixote* is used as a standard by which *La Divina Commedia* by Dante Alighieri may be evaluated for its contributions to medicine of its age. In writing, Dante includes a unique structure of punishment in the first *cantico*¹⁵, *Inferno*, in which many of the sinners in Satan's realm are locked into cyclical agony and pain. This study provides the framework for future comparative studies between authors, languages, and literary styles the world over.

¹⁵ One of three principal divisions of content.

WORKS CITED

- Alonso-Fernández, F. "Dos especies psicopatológicas: Don Quijote y el licenciado Vidriera." *Torre de los Lujanes* 2005; 25: 45-64.
- Capuano, Thomas M. "Las huellas de otro texto médico en *Don Quijote*: Las virtudes del romero." *Romance Notes* 45.3 (2005): 303-10.
- Cervantes Saavedra, Miguel de. *El ingenioso don Quixote de la Mancha*. Trans. Tobias Smollett. New York: Random House Inc., 2001. Print.
- Chul, Park. "Home Remedies in *Don Quixote*." *Instituto Cervantes* 2005: 241-61. *Centro Virtual Cervantes*.
- Cruz-Arroyo, M. *Mil años de historia en España*. Madrid: Alianza Editorial; 2000.
- Cruz-Hernández, M. "Esencia y estructura de la medicina de Averroes: La medicina en al-Ándalus." Granada: Fundación el Legado Andalusi; 1999: 237-54.
- "Delusional Disorder." *Psychology Today*. Wellness Resource Center, 17 February 2015. Web.
- Dement, W. "The effect of dream deprivation." *Science*. 131 (2015): 1705-07.
- "*Don Quixote de la Mancha*." *Voces de España*. Ed. Francisca Paredes Méndez, Mark Harpring and José Ballesteros. Boston: Heinle Cengage Learning, 2005. 300-15. Print.
- Eisenberg, D. "Did Cervantes Have a Library?" In Miletich JS, ed. *Hispanic studies in honor of Alan D. Deyermond: a North American tribute*. Madison: Hispanic Seminary of Medieval Studies: 1986 93-106.
- Emery, Alan EH. "Hippocrates and the Oath." *Journal of Medical Biography* 21.4 (2013): 198-99. *Historical Abstracts*.

- Friedman, Edward H. "Miguel de Cervantes Saavedra." *Spanish Dramatists of the Golden Age: A Bio-Bibliographical Sourcebook*. Ed. Mary Parker. Westport: Greenwood Press, 1998. 63-73. Print.
- Frutos González, V. de, and A.L. Guerrero Peral. "Original Article: Neurology in Medieval Regimina Sanitatis." *Neurología* (English Edition) 26 (2011): 416-424. *ScienceDirect*.
- García Ballester, Luis, and Jon Arrizabalaga. *Galen and Galenism: Theory and Medical Practice From Antiquity to the European Renaissance*. Ashgate, 2002.
- Goyanes-Capdevilla, J. "La cirugía de Albucasis." *Gaceta Médica Española* 1954; 27: 601-603; & 28: 201-04.
- Ingber, Alix. "Lope Félix de Vega Carpio." *Spanish Dramatists of the Golden Age: A Bio-Bibliographical Sourcebook*. Ed. Mary Parker. Westport: Greenwood Press, 1998. 229-243. Print.
- Lake AE, III. "Headache and Behavioral Medicine: a 50-Year Retrospective." *Headache: The Journal Of Head & Face Pain* 48.5 (2008): 714-718 5p. *CINAHL Plus*.
- "Lewy Body Dementia." *Mayo Clinic*. Diseases and Conditions, 17 April 2013. Web.
- López-Muñoz, Francisco, Cecilio Álamo, and Pilar García-García. "The Herbs That Have the Property of Healing...": The Phytotherapy in *Don Quixote*." *Journal of Ethnopharmacology* 106.3 (2006): 429-441. *Medline*.
- Maier, Maximilian C. "Comic Confluence in *Lazarillo de Tormes*." *Bulletin of Hispanic Studies* 7 (2012): 681. *Academic OneFile*.
- Martín-Araguz, A. et al. "La neurociencia en Al Ándalus y su influencia en la medicina escolástica medieval." *Revista de Neurología* 34.9 (2002): 877-892. *Medline*.

- Martin Araguz, A, C Bustamante Martínez, and V Fernández Armayor. "Sabuco's Suco Nerveo and the Origins of Neurochemistry in the Spanish Renaissance." *Revista de Neurología* 36.12 (2003): 1190-98. *Medline*.
- Minnema, Lourens. "Spatial Imagery as Key to Two Mystical Experiences of Transformation: A Comparison between Teresa of Avila and John of the Cross." *Mental Health, Religion & Culture* 15.6 (2012): 587-609. *Academic Search Premier*.
- Palma, José-Alberto and Fermín Palma. "Neurology in *Don Quixote*." *European Neurology* 68 (2012): 247-57.
- Parker, Mary. "Fernando de Rojas." *Spanish Dramatists of the Golden Age: A Bio-Bibliographical Sourcebook*. Ed. Mary Parker. Westport: Greenwood Press, 1998. 145-173. Print.
- Parker, Mary. Introduction. *Spanish Dramatists of the Golden Age: A Bio-Bibliographical Sourcebook*. By Parker. Westport: Greenwood Press, 1998. 1-17. Print.
- Peleg, Roni, Howard Tandeter and Aya Peleg. "The Medical Cervantes." *Canadian Medical Association Journal* 165.12 (2001): 1623-24.
- Pinto, Carmen. "Medical Classics: *Don Quixote de la Mancha*." *British Medical Journal* 335.7627 (2007): 997.
- Powers, Harriet B. "Unity in *el caballero de Olmedo*." *Bulletin of the Comediantes* 27 (1975): 52-59.
- Rodríguez-Molero, FX. "Originalidad y estilo de la anatomía de Averroes." *Iberoamericanos de historia de la medicina* 1950; 25: 47-63.

Schroth, Terri, and Bryant Smith. "Muddled Origins in Picaresque Literature: The

Foreshadowing of Chaotic Lives." *Interlitteraria* 19.2 (2014): 293-306.

Ubelaker Andrade, Max. "Don Quixote: Pain, Space, and Artifice." *Cervantes* 32.2 (2012): 81-121.

Vernet, J. "Los médicos andaluces en el *Libro de las generaciones de médicos* de Ibn Yulyul."

Barcelona: *Anuario de Estudios Medievales* 1968; 5: 445-62.

Wiesner, Christian D., et al. "The Effect of Selective REM-Sleep Deprivation on the

Consolidation and Affective Evaluation of Emotional Memories." *Neurobiology Of*

Learning and Memory 122 (2015): 131-141. *PsycINFO*.

WORKS CONSULTED

Bartra, Roger. *Melancholy and Culture: Essays on the Diseases of the Soul in Golden Age Spain*.

Cardif: University of Wales Press, 2008. Print.

Castro, Americo. *Hacia Cervantes*. Madrid: Taurus ediciones, 1967. Print.

Graf, E.C. *Cervantes and Modernity: Four Essays on Don Quixote*. Cranbury: Rosemont

Publishing and Printing Corp, 2007. Print.

Hatzfeld, Helmut. *El Quijote como obra de arte del lenguaje*. Madrid: Imprenta Aguirre, 1966.

Print.

Peers, E. Allison. *Spanish Golden Age in Poetry and Drama*. New York: Phaeton Press, 1974.

Print.

Ricapito, Joseph V. *Consciousness and Truth in Don Quijote and Connected Essays*. Newark:

Juan de la Cuesta—Hispanic Moographs, 2007. Print.

Riley, E.C. *Cervantes's Theory of the Novel*. Newark: Juan de la Cuesta—Hispanic Monographs,

1992. Print.

Rivers, Elias L. *Talking and Text: Essays on the Literature of Golden Age Spain*. Newark: Juan

de la Cuesta—Hispanic Monographs, 2009. Print.