"So Strange Things So Probably Told":

Epistemic Consequences of Scientific Discourse in Lunar Travel Narratives

by

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Abstract

This thesis investigates the interplay between fictionality and verisimilitude in fiction written between 1638 and 1835. Specifically, it examines the epistemic complications that arise when a single text juxtaposes "factual" and "fictional" discourses. With this in mind, it adopts as its test case the lunar travel narrative (LTN), a genre that exemplifies fiction attempting to masquerade as fact. In lunar travel narratives, narrators describe traveling to the moon before this journey was possible, and employ the seemingly-reliable discourse of empiricism in order to bolster their claims. This juxtaposition does not result merely in a clash between opposing discourses, but allows them to invade each other in uncomfortable ways. This invasion gives rise to generically indeterminate texts which exist somewhere between categories of fact and fiction and disrupt the mutually exclusive binary we imagine to be self-evident. Such blurring also challenges the received view of literature and science as independent, mutually exclusive projects. I critique this positivist view of "self-evident" categories of fact/fiction and literature/science by demonstrating how LTNs reveal scientific discourse to function using certain fictive literary elements. I also examine how these texts employ their indeterminate status to undermine established associations between the formal signature of empirical discourse and the assumed truth value of its content.

In my Introduction, I establish my aims and methods and also my contribution to the critical conversation. In Chapter One, I introduce the discourses that interact to generate LTNs' indeterminacy, and I reveal how each discourse incorporates both factual and fictive elements on its own. In Chapter Two, I demonstrate that when these discourses meet for the first time in a single text, that text becomes indeterminate, existing somewhere between fact and fiction. This indeterminacy spread to other works and became a generic constant. Chapter Three considers how the Royal Society systematized empirical discourse into its normative "plain style" and how this development re-situated the indeterminacy of the LTN, making its genre instabilities seem to satirize the narratives' own scientific discourse. Chapter Four traces LTNs' attempt to regain stability by separating their factual and fictive discourses into text and context. My examination ends as the LTN's increasingly subversive critique is quarantined within modern science fiction. My conclusion compares the LTN to the novel and considers how the history of the LTN, extinct by the 20th century, highlights aspects of the novel, and the robustness of that form up through the present.

Throughout my chapters, I discuss works by numerous authors, including Lucian, Kepler, Godwin, de Bergerac, Wilkins, Russen, Defoe, McDermot, Brunt, Poe, Locke, and Verne. I have selected these particular LTNs for their pronounced or problematic use of scientific discourse. By studying the contradictions and paradoxes of fictionality and verisimilitude that arise in these works, I hope to assemble a kind of fossil record from which we may read an evolutionary history of a developing discourse, one that generates a variety of literary genres and styles as well as the divide between the disciplines of science and literary studies, with a culmination that is intrinsically related to the emergence of the modern novel. Because we live in a world derived from the forms, values, and categories that solidified during these centuries of discursive development, it is worthwhile to investigate the process by which this occurred.

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Introduction

"One last feature unites science and literature, but this feature is also the one which divides them more certainly than any other difference: both are discourses..."

- Roland Barthes, "From Science to Literature," *The Rustle of Language*, p.4

Has the novel always been as believable as we now perceive it to be? Certain critics like Ian Watt would affirm that it has. In *The Rise of the Novel*, Watt claims that the genre has been defined from the start by an emphasis on verisimilitude, "likeness or resemblance to truth, reality, or fact" ("verisimilitude, n."). He dubs this defining feature of the novel "formal realism," so named because it "does not reside in the kind of life [the novel] presents, but in the way it presents it" (Watt 32, 11). However, this analysis has prompted further questioning and led other critics to hypothesize more complicated origins for the genre. In "The Rise of Fictionality," Catherine Gallagher claims that it is not verisimilitude but "fictionality," her term encompassing the quality of literary fictiveness, that is the novel's defining feature. This claim necessitates a more complicated generic genesis, and Gallagher delivers, describing how "from the outset, novelistic fictionality has been unique and paradoxical" (337). She claims that the novel "is said both to have discovered and to have obscured fiction," and sees the invention of "believable stories that did not solicit belief" as crucial to its development (Gallagher 338, 340).

The question that animates this project starts with the inverse of Gallagher's formulation, pondering *un*believable stories that *do* solicit belief. What happens when these paradoxes of verisimilitude and fictionality are not obscured, as in the novel, but showcased? Investigating such an alternative will not only shed light on the way in which the novel mediates a synthesis of Watt's realism and Gallagher's fictionality, but should also provide insight into the ways in

which such textual features interact in other varieties of writing.

By undertaking such an inquiry, this thesis aims to sketch the complex epistemic issues arising from the interplay between fictionality and verisimilitude in fiction written between 1630 and 1835. Specifically, it will analyze how these issues arise in the interactions between various *discourses*, which in my usage specifies recognizable writing styles associated with a particular genre. To this end, I will examine fictions that purport to be facts, or in the words of Francis Bacon, "so strange things so probably told" (25). I will draw my texts from a genre that at the time served as the best example of fiction claiming to be fact: namely, the lunar travel narrative (LTN), a type of story in which a first-person participant-narrator describes traveling to the moon at a time when, of course, this journey was technologically impossible. The narrator of and in these fictions always finds the moon to be inhabited, often by humanoid creatures with whom he can communicate. The pertinent scholarship rarely regards the LTN as more than a quirky offshoot of the travel narrative genre or as an example of nascent science fiction. These stories, however, exhibit two characteristics, the combination of which makes them the perfect test case for an inquiry into issues of discourse, fictionality, and epistemology. The LTN is distinguished by its status as an epistemic failure, and by its unique discursive hybridity.

Like many other fictional travel narratives, LTNs use a rhetoric of verisimilitude that aims to elicit belief; however, these texts are unique in that they fail in an obvious, even spectacular way at this endeavor. Their rhetorical ploys are both transparent and empty, and they appeared so to contemporary readers. Percy G. Adams, a critic of travel accounts, says as much when he asserts that "[t]he lunar literature [was] not intended to fool the general reader" (81). However, this failure to convince generates consequences in the realm of epistemology, the study of the grounds of knowledge and the way in which we distinguish truth from falsehood

(Steup). The lunar setting of LTNs highlights each story's fictional status, stripping its rhetorical maneuvers of any real power to convince. Verisimilar suspension of disbelief, like that generated by the novel, becomes impossible to sustain. Like oil and water, the rhetorical conventions and the content to which these refer inevitably separate within the text. The belief-seeking agendas of these structures stand out in high contrast to the tales' frankly fictive content in a way that is obscured in texts with more plausible content. Such epistemic consequences are rarely encountered in other forms of fiction, and they distinguish the LTN as being of particular interest to students of discourse, truth claims, and believability.

LTNs also differ from other narrative genres with respect to their discursive hybridity, a characteristic that historicizes the epistemic complexity mentioned above. Dating from the second century CE, the earliest LTN establishes the genre as a form of mimetic satire aimed at discrediting the claims of travel narratives. However, when LTNs re-emerged as a popular genre in England in the mid-1630s, the scientific revolution was well under way. Therefore, their explanations of their lunar subject matter were heavily implicated in the development of empiricism, an epistemic trend holding that knowledge arises strictly from unmediated sensory experience and therefore relies on firsthand observation or experimentation for validity ("empiricism, n."). This dual heritage generates the genre's discursive paradoxes: stories which incorporate travel narratives' discourse evolve to incorporate the experimental and experiential language of empiricism as it enters into that discourse. Critic Jenny Mezciems describes this shift as occurring in the 18th century, when "romance in travel…[begins to follow] the criteria of scientific reality, so that spurious narratives ape the new manner of real ones, and fiction pretends to be fact in a new way" (15). In this century, the object of LTNs' satires switches from travel narratives to empiricism, exposing how empirical discourse may be misused to encourage

belief in fictions in the same way that travel narrative discourse originally did. Because of the genre's uniquely bifurcated literary genealogy, it offers rare historical insight into the development and interactions of various specialized discourses.

By synthesizing categories modern readers likely perceive as polar opposites, LTNs also disrupt categorical thinking and yield texts of varyingly indeterminate status. I use the term "indeterminate" to refer to texts that resist received binaries of factual/fictional, serious/satirical, and even scientific/literary. This resistance is a byproduct of the doubleness of their genealogy, which leads them to manifest qualities of each term. The phenomenon of such indeterminate texts suggests that in the long 18th century, these categories had not yet settled into the mutually exclusive binaries that we take to be self-evident, but that they were (and still are) dependent on culturally constructed discursive differences. This categorical ambiguity is a crucial feature in the epistemological infrastructure of these texts. As Michael McKeon notes, "The instability of generic categories registers an epistemological crisis, a major cultural transition in attitudes toward how to tell the truth in narrative" ("Generic" 383). By studying contradictions and paradoxes of fictionality and verisimilitude in LTNs, I hope to produce a kind of fossil record from which we may read the evolutionary history of a developing discourse, one that generates a variety of literary genres and styles as well as the divide between the fields of science and literary studies, with a culmination intrinsically related to the emergence of the novel.

Before I map the terrain that the following chapters will cover, I wish to introduce two caveats and a convenient taxonomic system. As I indicated, my thesis uses LTNs as a test case in order to research how believability claims in fiction shifted over time in response to historical developments in scientific culture, particularly the scientific revolution and the establishment of empirical rhetoric. It does not aim to be a dedicated and/or comprehensive history of the LTN

genre; in that vein, other scholarly works exist which fill this niche to capacity.[1] While the questions I contend with in my thesis arise in relationship to genre, they are more foundational, more epistemic, and more historically oriented than the available critical literature, focusing on form rather than content, but using each to inform the other.

I wish to offer one more caveat before opening onto my analysis. Instead of a reception history focused on recoverable evidence of whether or not contemporary readers of LTNs actually believed the texts' claims, this thesis develops a history of forms and rhetorical devices, analyzing the claims that the texts themselves make, regardless of reception.

When discussing literary evolution over long stretches of history, it is useful to have a set of benchmark terms that can help calibrate gradual literary change. In *History of the Novel: A Historical Approach*, Michael McKeon identifies three phases through which the novel progressed when maturing into its modern form. "Idealized romanticism," he argues, is first opposed by "naïve empiricism," which is then in turn opposed by "extreme skepticism" (McKeon *History* 384). All three of these kinds of fiction eventually combine to generate the genre we find familiar today. These categories work surprisingly well for describing the changes that the LTN undergoes in response to scientific development in the 18th century. Accordingly, this thesis will employ McKeon's schema in order to provide a structural taxonomy for primary texts and a vocabulary for describing and analyzing processes of gradual literary change. "Naïve empiricism" will be used in reference to texts that use empirical rhetoric without satirically critiquing it, while "extreme skepticism" will refer to the texts of a later period in which this

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[1] For those seeking overviews of the genre, I recommend Marjorie Hope Nicholson's 1948 *Voyages to the Moon*, a well-researched history of the LTN, and Aaron Parrett's 2004 *The Translunar Narrative in the Western Tradition*, which takes an updated and more theoretical approach.

critique is present. These categories develop in the LTN in much the same pattern that McKeon identifies in the novel, suggesting that the two genres may share other features.

My chapters are organized chronologically so as to track the literary and cultural developments that form the crux of my investigation. My first chapter lays out the two discourses that ground the 18th-century LTN's epistemic conflict, in that each discourse exhibits epistemic complexities on its own. I open with the satirical mimicry of ancient travel narratives found in the first LTN, Lucian's *True History* (2nd century CE). Then, a discussion of empiricism provides the backdrop for analyzing empirical discourse in Johannes Kepler's *Conversation with the Starry Messenger* (1610) and *Somnium* (1630).

In Chapter Two, I trace these discourses and demonstrate the complications that occur when they intersect for the first time in a single work, the first English LTN, Francis Godwin's *The Man in the Moone* (1638). Brief analyses of references to Godwin in Cyrano de Bergerac's *Voyage dans la Lune* (1657) and the second edition of Bishop Wilkins' *Discovery of a World in the Moone* (1640) demonstrate that while writers sought to disaggregate factual and fictive dimensions, the two rhetorics had invaded each other, becoming impossible to separate.

Chapter Three analyzes how this indeterminacy was amplified by the Royal Society's codification of empirical discourse. Adopting this discourse led LTNs to become self-reflexive and self-implicating in their satirical attacks, resulting in a textual instability which I track through David Russen's *Iter Lunare, or A Trip to the Moon* (1703), Daniel Defoe's *The Consolidator* (1705), and Murtagh McDermot's *A Trip to the Moon* (1728). Such an unstable genre could not last, and in my final chapter, I sketch out the conclusion of the LTN's role as epistemic paradox as its critiques are silenced via its quarantine within modern science fiction. I

envision Richard Adams Locke's Moon Hoax of 1835 as a turning point in the LTN's development, and use Samuel Brunt's *A Voyage to Cacklogallinia* (1727), two editions of Edgar Allan Poe's *Hans Pfaall--A Tale* (1835 and 1840), and Jules Verne's *From the Earth to the Moon Direct in Ninety-Seven Hours and Twenty Minutes, and a Trip Round It* (1874) as touchstone instances of the LTN's generic subsidence and the hoax's substantial effect on it. In my conclusion, I consider parallels between the LTN and the novel and offer some conjectures about the relationship between the genres and why they met such different fates.

Mary Baine Campbell has said that "*openly* imaginary voyages [are] an obvious resource for the project of anthropology" ("Impossible" 1), and it is not a great stretch to suggest that these texts are similarly valuable within the fields of literary studies and the history of science. I envision my thesis as investigating the overlap between these two fields and their accompanying perspectives. I also see it as examining the interaction between texts' formal elements and historical contexts. Too often, these factors are isolated from each other – or so the popular division between formalists and historicists so-called might have one believe. This thesis explores new territory by not only investigating the point where these critical perspectives intersect, but by investigating the grey area implied but not explored in many modern binaries, and doing so through analysis of a genre perfectly suited to the task but largely ignored in our literary criticism. As Mezciems notes, "As long as new emphases and experiences are presented through old forms…they continue to be related to old values in spite of themselves, and to be constrained by the very vehicles through which they seek acceptance" (Mezciems 10). We are living in a world derived from the forms, values, and categories that solidified because of discursive developments, so it is worth our while to investigate the process by which this occurred. As discourses have built our world, we should find out how our discourses were built.

Chapter One: Mixing Fact and Fiction in Two Discursive Traditions

The paradoxes that characterize lunar travel narratives (LTNs) stem from a mismatch of two distinct discourses or styles of writing: the trusted experiential language of empiricism, and the suspicion-inducing claims of travel accounts. In the early 17th century, each of these discourses found the moon to be a topic of interest: Galileo wrote about observing it with his new telescope in 1610, and it was also tied to the genre of travel narratives, accounts notorious in the day for their ability to lie about exotic locales. The texts discussed in this chapter all predate the first English LTN's publication in 1634; however, analyzing them provides the context in which to discuss the significance of this work, the first point at which these discourses of empiricism and travel narratives appear in a single text and begin to generate epistemic and discursive complications. In preparation for analyzing this intersection, this chapter examines texts that exemplify each of these discourses in order to introduce them and characterize their similarities and differences.

Readers, imagining a binary of empirical fact facing travel narratives' ostentatious fiction, might expect the differences between these discourses to outnumber their similarities. My reading complicates this assumed simplicity, showing instead that each discourse incorporates both factual and fictive elements, and that the empirical style relies as much on imaginative speculation as imaginary travel accounts rely upon factual details. Seeing that each of the LTN's two formative discourses is a mixture of factual and fictive elements will help to explain the indeterminate status that results when they are juxtaposed in later narratives.

"I confidently pronounce for a truth, that I lie"[2]: LTNs as Satirical Puzzles

Debates about textual believability did not of course originate in the 18th century; we find instances in the 2nd century CE, and from these we can deduce a crucial environment enabling the emergence of one of the first LTNs, *True History*.[3] This text aims to entertain while exposing and critiquing travel narratives' attempts to elicit belief by using proto-empirical discourse. Examining this debate and *True History*'s place in it will ensure that readers can identify how later LTNs reprise similar methods to critique a different discourse.

One of the texts at the center of the ancient debate about textual believability was Herodotus' *Histories*. While this account of the Persian Wars led to its author being called "The Father of History," it also relates numerous details that are problematically fictional, such as giant gold-digging ants, the bones of flying snakes, and sheep whose tails are so big they cannot move without the help of wooden wagons (Herodotus 3.102-105, 2.75, 3.113). "[Herodotus] loves a good story and recounts *thõmata*, astounding facts," notes critic Carolyn Dewald (xviii). However, she also emphasizes that "Herodotus himself does not expect us to believe everything we read," indicating a passage where he remarks, "I am obliged to record the things I am told, but I am certainly not required to believe them—this remark may be taken to apply to the whole of my account" (Dewald xxviii, Herodotus 7.152). While Herodotus directly performs his skepticism by interrupting his narrative in this manner, he elsewhere attempts to elicit belief. He occasionally "tell[s] us directly about efforts he has made to ferret out or investigate a particular problem, including eyewitness investigation (*opsis*)" (Dewald xxx). An ancestor of the genre of

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[2] Lucian 7
[3] The other LTN that may be considered the first is *Icaromenippus*. Also written by Lucian sometime between 100-200 CE, it is a simpler satire, neither participating in a larger critical debate nor foregrounding paradox.

travel writing, Herodotus' *Histories* mixes factual and fictive elements, and its narrator performs the appropriate responses so that the account may appear plausible overall.

Hearing stories that combined factual and fictive elements "would have seemed natural…to Herodotus' fifth-century…audiences as the normal way to hear about things from the past (it was the way Homer did it, after all)" (Dewald xxvii). However, Herodotus' innovation of attempting to elicit belief and doubt in different parts of a single text left many readers skeptical of the work as a whole; Thucydides, Aristophanes, Ctesias, Plutarch, and Cicero all doubted the authenticity of its claims (Dewald xxxi). Cicero criticized it for its fictive elements by calling it a work "full of legends," while Ctesias took it upon himself to "[write] a Persian history that systematically contradicted Herodotus' version of events" (Dewald xxxi); this led to his reception as a figure "[whose] unreliability makes Herodotus seem a model of accuracy" (Barker 9). The skeptical reception of *The Histories* hasn't yet subsided, as "[s]ome scholars…have come to the conclusion not merely that it is unhistorical, but that it was intended by Herodotus to mislead us by persuading us through its rhetoric to read it as history" (Dewald xxxiii).

Whether or not *The Histories* aims to mislead, its use of rhetoric to elicit belief is what one of the first LTNs, *True History*, sets out to expose. Written by Lucian of Samosata in the 2nd century CE, the work disrupts its own narrative coherence in order to expose the veneer of reliability generated by travel narratives' discourse and rhetoric. The text emphasizes its logical rupture with humor in order to amplify its criticism; after all, what better way to make audiences devalue a serious text than by making it laughable? Along with humor, Lucian underscores his opposing logical positions with different styles of writing: one works to make his text seem true by emphasizing verisimilar details, the other emphasizes its fictionality by mimicking the discourse of classical epic. The satirical intention of *True History* justifies its shift from one style

to another, as by mimicking travel narratives' attempted verisimilitude while also declaiming those tales as lies, Lucian satirically demonstrates the emptiness of travel narratives' claims.

Lucian's introduction lays the foundation for his satire, specifying its target as "the old poets, historiographers, and philosophers, [who] in their writings have recorded many monstrous and intolerable untruths" (4). Of these, Lucian's narrator is especially critical of travel narratives, complaining that the unreliable historiographer Ctesias "wrote of the region of the Indians and the state of those countries, matters which he neither saw himself, nor ever heard from the mouth of any man" (5). He also implicates Homer's *Odyssey* as the first problematic travel narrative:

> …the first father and founder of all this foolery was Homer's Ulysses, who tells a long tale to Alcinous of the servitude of the winds, and of wild men with one eye in their foreheads that fed upon raw flesh, of beasts with many heads, and the transformation of his friends by enchanted potions, all which he made the silly Phaeakes believe for great sooth. (Lucian 5-6)

Today's readers may be surprised to encounter a fictional text at the heart of a complaint concerning narrative believability. However, Lucian is right to recognize both fact and fiction in Homer's work; modern critics like Herman Strasburger have since recognized "how much genuine historical impulse is to be found…in Homer" (Dewald xxxii), but his works also include fictional elements like those Lucian harangues above. *The Odyssey* is a fiction that includes historical details, just as Herodotus' *Histories* is a history that includes fictional elements. Though they may be categorized differently today, Lucian critiques both travel narratives and epics because they each involve fictional elements and masquerade as truthful in some capacity.

True History grounds its satire in a logical paradox formed when its two narrators elicit different interpretations of its story. The introduction's narrator claims that the work is a fictional imitation of travel narratives, while the narrator of the story proper repeatedly assures readers

that his account is historically accurate. Lucian uses this paradox to satirize travel narratives by characterizing their work as humorously self-contradictory, just like his own. The paradox begins to emerge at the end of the introduction, when its narrator declares that he intends to lie:

> …I turned my style to publish untruths, but with an honester mind than others have done: for this one thing I confidently pronounce for a truth, that I lie…I write of matters which I neither saw nor suffered, nor heard by report from others, which are in no being, nor possible ever to have a beginning. Let no man therefore in any case give any credit to them. (Lucian 7)

The passage's length, its placement at the end of the introduction, and its emphatic repetition of the narrator's intentions establish the story that follows as overtly fictional in the reader's mind.

Throughout the body of the text, the narrator contradicts his blatant intention to lie by assuring readers that they are hearing the absolute truth. This generates logical problems, such as when the narrator claims to observe a form of purgatory and notes that "the greatest torments of all are inflicted upon them that told any lies in their lifetime, and wrote untruly, as Ctesias the Cnidian, Herodotus, and many other[s]…" (Lucian 95). Evoking the introduction, which attacked Ctesias in particular, these lines encourage a fictional reading of the text. However, the narrator elicits another interpretation as he continues, remarking, "…which I beholding, was put in great hopes that I should never have anything to do there, for I do not know that ever I spake any untruth in my life" (Lucian 95). Because of the strained emphasis Lucian's narrator first places on the work's mendacity, and later on its veracity, the reader sees the contradiction as deliberate and humorous, rather than as an unwitting defect in the text's internal logic.

Lucian's humor isolates and explores the standoff between fictive and factual readings of the text, revealing the workings of its truth claims. It raises serious logical and epistemic questions about undecidability and how logic defeats itself under certain circumstances due to an

element of reflexivity. It evokes the problem of the Cretan liar, the Cretan who declares that "all Cretans are liars," creating a self-referential paradox. By arranging such a paradox between factual and fictive readings and embedding it in his narrative, Lucian amplifies his critique by creating a puzzle that disrupts the narrative's stability, ensuring that readers can't ignore it. This paradox is only humorous in that its categories do not mingle, but rather remain separate and clashing. The text is witty because it says one thing and then another, not because it exists in some sort of indeterminate middle space as later LTNs do.

Lucian uses humor to underscore his logical paradox, and also emphasizes it by employing within his narrative discursive modes that evoke both factual and fictive sources. This manipulation of discourse is consciously effected, as the introduction demonstrates by describing the work as consisting of "many notorious lies delivered persuasively and in the way of truth" (Lucian 4). However, Lucian's rhetoric is complex, as not all of his claims are delivered purely "in the way of truth." He uses one style to emphasize his text's mendacity, and another to emphasize its veracity, transposing his logical paradox into stylistic terms for further emphasis.

In the text proper, Lucian undermines the narrator's assertion that his story is historically accurate by having him employ the style of classical epics. When describing a battle between solar and lunar armies, Lucian's style evokes that of the catalogue of ships from Homer's *Iliad*, as literary critic Aaron Parrett notes (17-18). As previously discussed, the classical epic occupies a middle space between truth and fiction as a fictionalized narrative of real historical events. However, Lucian imports an epic rhetoric into a context that stresses that the events portrayed actually occurred as described. As a result, *The Iliad*'s fictional element taints the verisimilitude of Lucian's narrator's prose by suggesting that his catalogue, too, involves fictional elements, despite his claims to the contrary. In this way, a stylistic parallel to a literary work undermines

the narrator's claims to veracity in the text proper, creating discursive instead of logical contradiction.

In contrast to his use of epic rhetoric, Lucian's narrator situates his story as having actually occurred when he appeals to visual evidence, embodying a sort of proto-empiricism by describing his supposed reliance on immediate observation. Such "eyewitness investigation (*opsis*)" is one of Herodotus's tactics (Dewald xxx), and Lucian's use of it reveals it to be an empty gesture. Lucian's narrator occasionally withholds claims in the purported absence of direct observation, such as when he hears of a monstrous army approaching the lunar-solar battle and notes, "…I had no sight of them, for they were not yet come, and therefore I durst write nothing, though wonderful and incredible reports were given out of them" (Lucian 19). The narrator's putative avoidance of these "wonderful and incredible reports" suggests that his report, by contrast, is true. When Lucian's narrator does provide this description, he qualifies it in terms that emphasize his observation of them, declaring, "And when they drew so near unto us that we could take full view of them, it was a strange sight to behold such monsters…" (25). While the narrator's supposed reliance on ocular evidence would normally encourage belief, Lucian situates this proto-empiricism in a satirical context where the tale's interpretive paradox and the scene's tale's fantastic content reveal the rhetorical ploy to be empty. Just because discourse claims immediate observation doesn't mean that its content is true.

Lucian also reveals the use of banal details to elicit belief through verisimilitude to be another empty gesture by using it to describe overtly fictional events. Parrett asserts that "this air of verisimilitude strengthens Lucian's satirical technique…[adding] force through credibility" (16). For instance, when the narrator describes how his ship leaves the Earth by way of a giant whirlwind before sailing to the lunar kingdom, he peppers quantitative measurements throughout

the scene. He makes note of the wind conditions before the incident ("the wind serving us weakly…"), the time of the event ("about noon"), the approximate height to which his ship was lifted ("some three thousand furlongs"), and the amount of time he sailed before reaching the lunar nation ("seven days' space") – all attempts to temper a fabulous scene with believable details, of the sort that would have been included in reports of actual naval incidents (Lucian 13). However, the verisimilitude typically associated with these details is disrupted by the scene's fantastic content, enhancing Lucian's satire by demonstrating how one can make even the most fantastic happenings sound plausible with the right rhetoric.

True History demonstrates how the LTN emerged from a debate over how to respond to texts that mix fact and fiction, yet purport to be true. This origin is significant, as *True History* provided a model for English LTNs when it was translated into English in 1634. Marjorie Hope Nicholson identifies this translation as perhaps "responsible for the increasing interest in the theme [of lunar travel] in England after that date" (14). Lucian's text thus became the model lunar travel narrative for European writers, helping to explain why 17th-century LTNs continue to use their own prose to engage in debates over discursive believability, and why authors continued to produce similar satires through the 18th century. These later texts continue to use contradiction to expose the power of verisimilar discourses to convince. However, when they are implicated in the development of another discourse that becomes more ostensibly reliable than that of travel narratives, their criticism takes this discourse - the discourse of empirical science - as its new target.

"Theoretical speculation and visual experience"[4]: LTNs as Scientific Speculation

Before discussing the first English lunar travel narrative (LTN), it is crucial that we examine how at the turn of the 17th century, the moon was redefined as a site of scientific investigation. It was implicated in the developing trend of empiricism, which held that knowledge arises only through immediate experience and therefore relies on observation and/or experimentation for validity ("empiricism, n."). It may seem that while LTNs actively change in response to scientific progress, science remains a bastion of truth impervious to literary developments. This, however, is not true. As Roland Barthes reminded us long ago, science is as discursive a formation as literature (4). Literary critic Mary Louise Pratt evokes this sentiment when she writes that "knowledge exist[s] not as a static accumulation of facts…but as human activities, tangles of verbal and non-verbal practices" (29), as does Foucault's description of "natural history as…"a description of the visible" (Foucault qtd. in Pratt 28). Dwight Atkinson offers similar insight:

> Empirical science is generally considered to represent the dominant knowledge system in the industrialized world today. For many years, the hegemony of the sciences went unquestioned in the world—as a form of knowledge which was self-evident, self-regulating, and beyond the reach of human subjectivity. Only in the last 40 years have these assumptions begun to be critically examined. (xvii)

I see my thesis, and particularly this section, as participating in this critical investigation. In such an examination, LTNs are particularly useful; they offer us a view of the early machinery of scientific exposition and debate, exposing cognitive and epistemic mixtures of fact and fiction at work in its discourse. While empiricism retains an association with fact, its roots demonstrate that it uses fictional discourse in speculation, theory, and thought experiments.

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[4] Kepler, *Conversation* 17

This section traces the incorporation of fictional discourse into the growing empirical paradigm around the beginning of the 17th century, paying particular attention to the effect this development has on empiricism's definition of facts. I hope to combat the positivism of naïve empiricism (the idea that "a fact is a fact") and demonstrate that instead, what can be considered a fact is determined by the theoretical infrastructure at work in a given culture at any given time. To demonstrate this, I will first contextualize early empiricism in contrast to fiction through a comparison of earth-moon analogies in Spenser's *The Faerie Queene* (1590) and Galileo's *Sidereus Nuncius* (1610). Then, I will analyze discussions of an inhabited moon in two works by Johannes Kepler, *Conversation with the Starry Messenger* (1610) and *Somnium* (*The Dream*) (1634). These works employ the fact-fiction collision in different ways to argue for the place of fictional elements like theory, speculation, and thought experiments in the scientific paradigm.

At the start of the 17th century, European popular epistemology was as much defined by what it did not know as by what it did. Unexplored territories surrounded known locales on maps and were often blazoned with a telling phrase: "*Humanos oculus non videt* – no human eye has seen it" (Nicholson *Voyages* 5-6). In this way, the unknown was not figured as merely a lack of experience, but specifically as a lack of vision. However, not everyone needed personally to view the lands that were being discovered across vast oceans in order to believe that they existed. Because the experiences of travelers lay beyond the common reader's ability to observe, readers were encouraged to believe textual claims in the absence of visual experience, in response to determinate textual cues.

In *The Faerie Queene* (1590), Edmund Spenser employs this belief in the existence of things not personally observed to compare fancy to fact and legitimate the project of speculative fiction. In response to those who would see his poem's fantastic setting of "Faery Lond" as

"th'aboundance of an idle braine" and a "painted forgery," he emphasizes how little of the world is known to man, and how "dayly…through hardy enterprise, / Many great regions are discouered, / Which to late age were neuer mentioned," citing Peru, the Amazon river, and Virginia as examples (Spenser 157). Spenser then decries anyone who would require visual evidence for belief, claiming that only "witlesse [men]" assume "that nothing is, but that which he hath seene." (Spenser 158). Undiscovered worlds exist, he asserts; perhaps even in the moon:

> What if within the Moones faire shining sphere[,]
> What if in euery other starre vnseene
> Of other worldes [one] happily should heare?
> [One] wo[n]der would much more: yet such to some appeare. (Spenser 158)

If readers were expected to believe in the existence of Virginia, a faraway land that few would ever visit, it follows that this sort of imagination might apply itself to fictional creations, and characterize them as extant but unseen as well. As critic David Cressy notes, "Rhetorically, for Spenser, the moon was a bridge from the newfound lands of America to the undiscovered world of "faerie land" (961). Spenser's analogy combines fact and fiction in order to encourage readers' suspension of disbelief regarding his fantastic subject material.

The moon, however, inverts the conundrum figured by Virginia and Peru. Instead of a place said to be explored but unable to be seen by the general public, the moon was a purely visual terrain that all could see but none could explore – what Donald Rumsfeld might dub a "known unknown," ("Defense.gov") and what Cressy encapsulates in the phrase "comfortingly familiar, yet achingly distant" (961). Because no sensory experience was available concerning the lunar surface, claims about it could not be confirmed or denied; the moon was a space of improbability and likelihood, not impossibility and certainty. Seen but not known, it invited both observation and speculation, and perception of it changed as the tools of observation improved.

The invention of the telescope fundamentally altered Western culture's perception of the moon while simultaneously changing the way in which fact-fiction analogies like Spenser's functioned in descriptions of the lunar surface. Upon constructing his first telescope in 1610, Galileo Galilei was able to observe the moon's surface more accurately than ever before, and he recorded his experience in *Sidereus Nuncius*, or *The Starry Messenger* (1610). In this text, the style of Galileo's prose emphasizes reproducible observation to legitimate his claims. Considering the nature of the telescope, this is an unsurprising emphasis, but what's notable here is its departure from Spenser's invocation of blind faith. Indeed, sight is foregrounded in the opening lines of Galileo's text when he states "It is a very beautiful thing, and most gratifying to the sight, to behold the body of the moon," establishing his role as observer (27). Similarly, when describing the lunar surface, Galileo parallels his telescope-aided observations with those made directly with the senses in order to elicit belief, as in the following passage:

> In this way one may learn with all the certainty of sense evidence that the moon is not robed in a smooth and polished surface but is in fact rough and uneven, covered everywhere, just like the earth's surface, with huge prominences, deep valleys, and chasms. (28)

This passage suggests that observations made with his telescope should be granted the same self-evidence as those made directly with the senses. Galileo's use of tactile adjectives like "smooth," "rough," and "uneven" emphasizes this point by rhetorically compensating for the evidence the moon as a subject excludes. Also, in describing the lunar surface as being "just like the earth's," Galileo constructs an analogy to make his subject material seem familiar.

The moon-earth analogy that Galileo constructs differs significantly from Spenser's. This difference is most apparent when Galileo argues for the existence of lunar mountains based on indirect observation, using the shadows that they cast as evidence (Miller). Galileo notes that

"many bright points appear within the darkened portion of the moon" and as it turns, they "gradually increase in size and brightness" until they "become joined with the rest of the lighted part" (Galilei 33). When analyzing this evidence, Galileo transports it into a more familiar context by asking rhetorical questions that compare his observations to earthly phenomena:

> And on the earth, before the rising of the sun, are not the highest peaks of the mountains illuminated by the sun's rays while the plains remain in shadow? Does not the light go on spreading while the larger central parts of those mountains are becoming illuminated? And when the sun has finally risen, does not the illumination of plains and hills finally become one? (33)

Galileo here invokes his reader's faith in lunar mountains that are not directly observed (Miller), just as Spenser does with his unseen worlds. However, where the faith Spenser elicits from readers is truly blind in the sense that he encourages belief in things unseen, Galileo inverts the analogy and grounds his reader's faith in the presence of indirect visual evidence instead of a lack of visual evidence. Where Spenser's analogy uses fact to justify fiction, Galileo's analogy substantiates his claims with indirect visual evidence and trims fiction out of the equation.

This shift from belief in things unseen to belief substantiated by indirect evidence has a crucial effect on the trajectory of empirical discourse. The increased emphasis on observation means that only visible phenomena can be regarded as facts, to the exclusion of the consideration of things that cannot be viewed: Spenser's fairy land is no longer a permissible subject because nothing seen connects us to it, but Galileo's mountains are, because he interprets something he sees as being their shadows. However, as Galileo's shadows demonstrate, empiricism gives to unobservable phenomena the status of fact via the *interpretation* of indirect evidence. This, as it turns out, opens the floodgates and allows empirical discourse to incorporate fictional elements in the form of hypothetical speculation and thought experiments. While this synthesis of factual

and fictive elements is initially unstable, it results in a much more developed empirical paradigm, as works by Johannes Kepler attest to and support.

Discursive hybridity is a defining feature of Kepler's *Conversation with the Starry Messenger* (1610) and his LTN *Somnium, or The Dream* (1634). Factual and fictive discourses mingle in different ways in each text: in *Conversation*'s consideration of an inhabited moon, Kepler uses fact to substantiate speculation, while in *Somnium*, he surrounds facts with a fictive frame narrative. Kepler's application of fictional elements to the moon-earth analogy allows him to demonstrate that knowledge is best supported by a mixture of sensory observation and theoretical speculation instead of a sole reliance on observation. In these texts, Kepler creates a niche for fictive discourse within the developing scientific paradigm by manipulating the link between empirical epistemology and the discourse that embodies it.

Observation provides the context for imaginative speculation in *Conversation with the Starry Messenger*, and this combination allows Kepler to import cultural fictions into a scientific space. He begins with a single observation of the moon's surface, admitting "I cannot help wondering about the meaning of that large circular cavity in what I usually call the left corner of the mouth [of the Man in the Moon]" (Kepler, *Conversation* 28). By locating his observation on the face of the Man in the Moon, Kepler recruits a folk metaphor to his purportedly scientific observation, mapping out his empirical observation on a map defined by a cultural fiction and demonstrating how effective an empiricism that mixes fictional and factual discourses can be.

Soon after, Kepler asks of this crater, "Is it a work of nature, or of a trained hand?" (*Conversation* 28). This tottering question allows him to transition from observation to speculation as he adds, "Suppose that there are living beings on the moon" (*Conversation* 28).

Kepler grounds this speculative supposition in observation and astronomical facts:

> It surely stands to reason that the inhabitants express the character of their dwelling place, which has much bigger mountains and valleys than our earth has. Consequently, being endowed with very massive bodies, they also construct gigantic projects. Their day is as long as 15 of our days, and they feel insufferable heat. Perhaps they lack stone for erecting shelters against the sun. On the other hand, maybe they have a soil as sticky as clay. Their usual building plan, accordingly, is as follows. Digging up huge fields, they carry out the earth and heap it in a circle, perhaps for the purpose of drawing out the moisture down below. In this way they may hide deep in the shade behind their excavated mounds and, in keeping with the sun's motion, shift about inside, clinging to the shadow. They have, as it were, a sort of underground city. They make their homes in numerous caves hewn out of that circular embankment. They place their fields and pastures in the middle to avoid being forced to go too far way from their farms in their flight from the sun. (*Conversation* 28)

As Kepler alternates between accepted fact and far-fetched speculation, he initially emphasizes his facts with assertive phrases like "It surely stands to reason," "Consequently," and "accordingly," while flagging his speculations as hypothetical with qualifiers like "perhaps" and "maybe." However, a transition occurs in the sentence "Their usual building plan, accordingly, is as follows" – this "accordingly" refers not to fact but to the speculation that "maybe" the moon has clay-like soil. After this hinge sentence, Kepler assertively relates speculation that serves to explain the observation of the lunar cavity, using strong verbs (e.g. "they carry," "they make," and "they place") and reserving qualifications like "perhaps" for extraneous details. By grounding his imaginative speculation in an observation and using astronomical facts and assertively logical rhetoric to progress from point to point, Kepler is able to explain an observation with a surprising amount of literary fictiveness, appealing to readers' imaginations as much as their senses. Fact here serves as a support justifying Kepler's inclusion of imaginative theories. As fantastic as this thought experiment appears, it demonstrates the combination of sensory perception and speculation that Kepler later champions as being more productive and

insightful than an empiricism restricted to observable phenomena.

Kepler prefaces the previous passage with a parenthetical remark on how "[he] enjoyed toying with this idea [of an inhabited moon], long ago in a disputation written at Tübingen in the year 1593" (*Conversation* 28). This "disputation," Kepler's speculative dissertation "How do the Heavens appear to a Man located on the Moon?" (Bozzetto 372), eventually became *Somnium*, or *The Dream*, Kepler's LTN that more fully explores the possibilities that discursive hybridity affords in the empirical paradigm. Kepler molded his dissertation into a hybrid work by surrounding his empirical speculation with a fantastic frame narrative concerning lunar travel. Recognizing its inherent division, critic Roger Bozzetto has since called the work a "half-fictional, half-nonfictional text," maintaining that the text's discourse is "fragmented and dichotomized," as "the fiction and science are articulated separately" (374, 375, 375). *Somnium* establishes this rift between fiction and fact not only in contrasting discourses, but also in features such as the text/footnote divide, the use of multiple narrators, and the support of multiple simultaneous interpretations. Because it anchors the fact-fiction divide in its constitutive elements, *Somnium* supports factual and fictive readings simultaneously. It makes space for fiction alongside science in empiricism and demonstrates that this combination produces a more robust empirical methodology by allowing more information to be considered as facts.

Somnium integrates fiction into empiricism by employing three increasingly fantastic narrators. The story begins as an implied narrator falls asleep and dreams that he is reading a book written by the second narrator, a fictional character named Duracotas. Duracotas tells his life story and stops narrating when his mother, a witch, summons the Daemon from Levania, the third narrator. This fantastic lunar creature discusses interplanetary travel and the appearance of the lunar night sky before the implied narrator wakes up, abruptly ending the story.

This complex embedding of narrators allows Kepler to situate the scientific nexus of his text – his consideration of "How…the Heavens appear to a Man located on the Moon" (Bozzetto 372) - within layers of dream and fictional discourse. This organization grants him the freedom to invoke unobserved phenomena not normally supported by the empirical mentality as facts. As Kepler himself writes in *Somnium*'s notes, "In a dream it is necessary to have the freedom sometimes to invent that which was never perceived" (89). Significantly, Kepler doesn't claim that these inventions are untrue, merely that they haven't yet been perceived – one step farther from the indirect evidence of Galileo's lunar mountains toward Spenser's unseen fairy land, but still a perspective associating knowledge with observation in a speculative fashion. This is appropriate for Kepler's thesis, as it originally concerned what *would be seen* were someone to examine the night sky on the moon. Such freedom to consider phenomena not directly observed is necessary to *Somnium*'s goal of supporting the Copernican, heliocentric theory of the universe, which was not as convincing when restricted to contemporary visual observations (Raz Chen-Morris 227). As Bozzetto puts it, "[*Somnium*'s] many interlocking levels of narration…mediate its fictional/non-fictional discourse," allowing Kepler to address the possibilities of astronomical observations made from the moon, ideas not strictly tethered to firsthand observations (373).

As mentioned, Kepler's text also supports simultaneous but separate scientific and fictional readings by employing a division between his text and its footnotes. Kepler appended two hundred and twenty three notes to his text proper, as well as a "Geographical, or, if you prefer, Selenographical Appendix" which included notes of its own (149). Bozetto characterizes this structure as relegating science to "a massive support-structure of didactic endnotes totally exterior to the fictional narrative itself" that are "nevertheless meant to be read concurrently with the fictional text" (376, 375). *Somnium*'s science does not compete with fiction for dominance in

a single correct interpretation, but envelops the narrative, dividing the story's fiction and science into two distinct sections designed to support multiple concurrent interpretations.

One can see how *Somnium*'s structure supports simultaneous factual and fictional interpretations of its story when Duracotas explains that he and his mother "covered [their] heads with [their] clothing" moments before his mother summons the Daemon (*Somnium* 14). While the story's text contextualizes this detail as part of an occult summoning ritual, Kepler's notes on the line reinterpret the moment. He explains how "with this very rite (ha, how magically magical!)...[he and others] had observed a solar eclipse" in 1605; because they "lacked a dark room…[they] covered [their] heads with [their] coats and kept out the daylight in that way" (*Somnium* 60). Kepler's parenthetical anecdote dispels the occult connotations fostered by the story proper, allowing him to describe a scientific practice in its place. As Chen-Morris explains, "In this anecdote, the magic of Duracotus's mother is converted into science," and "[a]ttention is turned not to…apparent meaning but to the technique of observation. Kepler suggests optical instruments…as reliable vehicles of knowledge*"* (239). Thus, *Somnium*'s fictional-factual discursive overlap does not here destabilize empiricism, but rather emphasizes how trustworthy empirical instruments are!

The phrase "Daemon from Levania" also pinpoints a discursive divide between fictional text and factual notes. The narrative plays up the fantastic connotations of the word "Daemon," but its notes divest the term of mystery, claiming it was derived to mean "[k]nowledge of the phenomena of the heavenly bodies; from *daiein*, meaning 'to know'" (*Somnium* 62). Of the similarly mysterious-sounding "Levania," Kepler remarks in his notes, "'Moon' in Hebrew is *Lebana* or *Levana*. I could have called it 'Selenitis,' but Hebrew words, being less familiar to our ears, inspire greater awe and are recommended in the occult arts" (*Somnium* 53). That Kepler

chooses "Levania" for its mysterious connotations reveals how deliberately he uses fictional discourse in his frame narrative in contrast to his notes' empirical discourse.

Kepler's text juxtaposes fiction and fact in numerous ways, and this juxtaposition is generically significant. *Somnium*'s doubled discourse transforms it into what Bozzetto calls an "epistemological stepping-stone" between texts that "evoke the marvelous" and those that "propose an imaginative exploration of the outer edges of a reality *already defined*…by accepted scientific fact" (372). Its "innovative fictional vehicle…bridges the gap (however primitively) between fantasy discourse and scientific discourse" (Bozzetto 372). However, this "bridge" is not merely a literary artifact; Kepler engineered it to intervene in his era's scientific paradigm.

Kepler imagined *Somnium*'s composite status as having contemporary consequences. On one hand, he combined fact and fiction to entice readers into accepting the Copernican heliocentric theory of the solar system, a theory they would likely balk at in other contexts due to the church's fierce disapproval of it. As Chen-Morris puts it, Kepler "wrap[s] an uncomfortable truth in a brilliant and attractive camouflage" (226), a tactic which he quotes Kepler himself explaining in another work via a comparison with medicine:

> We may observe (in order to cure the crowd's craving for marvels) what physicians observe in the sick, that we may make use of the unnatural and pernicious appetites of the crowd to get them to swallow (as medicine) such advice (diagnosed as prognostication) as may serve to remove this disease of the mind, and which otherwise we could scarcely have persuaded them to take. (Kepler quoted in Chen-Morris, 226).

Kepler here recognizes fiction as a cultural craving that empirical science can employ to promote its ideas, demonstrating one use of fiction in the empirical paradigm.

However, *Somnium* doesn't just work to promote empirical ideas; it also works to cause

epistemic changes within the empirical paradigm itself. Kepler's use of the fantastic suggests that theories and speculations are as necessary to the study of astronomy as immediate sensory perceptions. As Bozzetto notes, elements of Kepler's text such as "the image of the waxing and waning of the Earth in the Moon's sky" are "created and sustained by means of scientific hypothesis (Copernican astronomy) and mathematical demonstration" (374). In a time that stressed immediate sensory observation as the basis of fact, hypotheses like these were popularly held by many to be no more believable than fictions (Chen-Morris 229-230). However, *Somnium* combats this limitation because its fantastic elements "[are] the direct result of the internal logic of a newly-conceived model of reality…within which readers are obliged to believe their brains, not their eyes**"** (Bozzetto 374). Fiction allows Kepler to encourage his audience to treat observable things and factual things as two distinct categories, creating space for speculation in the empirical paradigm. As Chen-Morris summarizes, "Direct experience by itself is limited and cannot give the causes of phenomena," but *Somnium* "[creates] a rupture between experience and theory" (229). Kepler articulates this rupture throughout *Somnium*'s notes: he describes a region of the moon "[w]hich no eye has ever seen," but claims, "[y]et in my discussion…you observe sound reasoning," and similarly characterizes certain elements of his text as being based on "pure reasoning, divorced from any visual evidence" (128-129, 240). By treating theory and fact as two distinct yet equally viable categories of thought, Kepler helps to legitimate the place of theory and its often imaginative discourse within the empirical mindset.

While they stem from different discursive traditions over a millennium apart, Lucian's and Kepler's texts both concern the relationship between fact and fiction. The first English LTN continues this trend; it combines the discourses of travel narrative satire and empiricism, creating a tense relationship between fact and fiction and resulting in the genre's first indeterminate text.

Chapter Two: Intersection and Indeterminacy

In the 1630s, lunar travel narratives (LTNs) emerged as chimeras incorporating the moon's role as a site of travelers' fantasies (e.g. Lucian's *True History*), as well as its identity as a symbol of empiricist description and speculation, as in Kepler's *Conversation* and *Somnium*. As the previous chapter discussed, the LTN's parent discourses each mixed fact and fiction, so it's no surprise that the complications this mixture engenders in each individual discourse proliferate and deepen when the discourses meet in the first English LTN.

In this chapter, I discuss this work, Francis Godwin's *The Man in the Moon, or a Discourse of a Voyage Thither, by Domingo Gonsales, the Speedy Messenger* (1638), as well as two early responses two it: Cyrano de Bergerac's satirical use of Godwin's narrative in *Voyage dans la Lune* (1657) and Bishop John Wilkins's serious use of it in the 1640 revision of his 1638 treatise *A Discovery of a New World, or A Discourse Tending to Prove, that 'Tis Probable There May Be Another Habitable World in the Moon*. A careful examination of this initial discursive juxtaposition and its effects will prepare the reader to appreciate how the complications that arise in Godwin's text appear in both satirical and serious responses to it, as well as in the genre throughout the 18th century. These complications come to define the genre's overt critique of scientific discourse when the Royal Society creates its "plain style," a convenient target. However, examining them at their source reveals how quickly culturally-created categories break down in the face of discursive contradiction even in texts that are not satirical.

Francis Godwin's *The Man in the Moone*: First (Discursive) Contact

Published posthumously in 1638, Francis Godwin's *The Man in the Moone, or a Discourse of a Voyage Thither, by Domingo Gonsales, the Speedy Messenger* combines Lucian's competing truth claims with Kepler's empirical discourse in a single text. It employs a naïve empiricist mode instead of a satirical one; that is, it does not critique empiricism's purported association with truth. Instead, it uses reliable discourses like that of empiricism to elicit belief for its own fantastic claims. However, the tale also hints that it is fictional, leading to contradiction. This contradiction results in the blurring of categories typically received as mutually exclusive, revealing their instability in a time when they were still forming.

The text foregrounds this contradiction in its "Epistle to the Reader." Written by one "E.M.," it sharply contrasts the fictional and factual interpretations that are each elicited more subtly throughout the story proper. Updating the opposing claims of Lucian's two warring narrators, the Epistle's single narrator articulates two opposing interpretations in succession, bolstering each with an appropriate rhetoric. This rhetoric initially elicits skepticism, calling the story "*an essay of* Fancy, *where* Invention *is Shewed with* Judgment" (Godwin, Epistle). The sentence's phrasing signals that the story's fictive status will be complex and unstable, involving both fictional "Invention" and sober "Judgment." When the Epistle declares that "*It was not the* Authors *intention (I presume) to discourse thee into a beleife of each particular circumstance,*" it attempts to clear Godwin of the charge of willful deceit and in doing so implicitly affirms that his text has the power to convince (Godwin, Epistle). At this point, the Epistle has characterized the story as fictional and warned about the dangers of falling for its gestures that elicit belief.

However, in direct contradiction of this warning, the Epistle concludes by framing the story as a plausible narrative. In claiming "*That there should be* Antipodes *was once thought as*

great a Paradox *as now that the* Moon *should be habitable,*" the Epistle parallels the real

discovery of the moon's solid body with the narrative's claims, making them seem plausible by

analogy, as in Spenser's comparison between Fairy Land and Virginia (Godwin, Epistle). When

suggesting that "*the knowledge of [new worlds] may seeme more properly reserv'd for this our*

discovering age: in which our Galilaeusses*, can by advantage of their spectacles gaze the Sunne*

into spots, & descry mountaines in the Moon," the Epistle also references contemporary

scientific discoveries to enlist the reliability of Galileo and advanced technology in its favor

(Godwin, Epistle). Ostentatiously constructed from opposing arguments, the Epistle anticipates

the alternation of belief and skepticism in the LTN that follows.

The Epistle's conflict between verisimilitude and fictionality permeates the story proper,

an account supposedly written by the fictional first-person participant narrator Domingo

Gonsales. Some of the story's elements elicit belief, while others elicit skepticism, and the

tension between fact and fiction eventually erupts into indeterminacy. While Kepler's *Somnium*

can support two interpretations at once due to its bifurcated structure, Godwin's text provides no

such support, instead making its discourses compete for a single interpretation throughout the

body of his work, as in the Epistle. This leads to the collapse of seemingly-reliable categories.

Because of its fantastic lunar content, Gonsales's narrative often aims to solicit belief. It

accomplishes this by drawing stylistic parallels between the style of Gonsales's prose and other

putatively reliable contemporary discourses. Reliable discourse first appears in conjunction with

realistic content, establishing Gonsales as a trustworthy source of information. Gonsales's

account begins with a dramatic but plausible personal history involving him falling ill during a

sea voyage and recovering on the island of St. Helena (Godwin 14). St. Helena's status as a real

place bolsters Gonsales's credibility, as does the fact that in Godwin's era, "[St. Helena] was…of

vital strategic importance to ships," which would often "take on essential stores and leave sick crew members to recover in its healthy climate" ("St. Helena Tourism"). As Campbell notes in *Impossible Voyages*, "This bracketing of the impossible destination by those visitable and visited provides the lunar account with a thin sheen of authenticity" (5).

Gonsales describes this realistic content with reliable discourses, further attesting to his credibility. He describes St. Helena as "situate[d] in the Altitude of 16. degrees to the South, and is about 3. leagues in compasse, having no firme land or continent within 300," using quantitatively precise language to evoke empirical works and appear just as reliable (Godwin 16). He then catalogues the island's flora and fauna in detail, as in this truncated excerpt:

> …there [are]…fruit-Trees, especially Oranges, Limmons, Pomgranats, Almonds, and the like, which beare Fruit all the yeare long, as doe also the fig-Trees, Vines, Peare-Trees (whereof there are divers sorts,) Palmitos, Cocos, Olives, Plumms; also I have seene there such as wee call *Damaxœlas*, but few; as for Apples I dare say there are none at all…(Godwin, 16-17)

The form and length of Godwin's list mimic the style of earlier reports of newly discovered lands, such as Thomas Hariot's *Briefe and True Report of the New Found Land of Virginia* (1588)*,* which includes "*Chestnuts," "Walnuts," "Medlars*," "*Grapes*," "*Strawberries*," "*Mulberries*," "*Applecrabs,"* and "*wilde peaze*" in its extensive descriptive catalogue of New World plants (Hariot 25-26). While previous reports like Hariot's often borrowed details from earlier narratives and embellished them, they referred to real places and were grounded in factual observation. So, in conjunction with the tale's initially realistic content, this stylistic parallel posits Gonsales as a credible observer before his tale's content becomes fantastic.

Gonsales similarly uses the reliable discourse of empiricism to add credibility to his account of building a flying engine, the tale's first fantastic claim. The language Gonsales uses in

this section emphasizes the process of experimentation that led him to construct a flying

"Engine" pulled by trained geese, or "Gansa's" (Godwin 32, 27). In one lengthy introductory

phrase, "In this cogitation having much laboured my wits, and made some triall, I found by

experience, that…by reason," the narrator emphasizes the empiricist ideals of "triall,"

"experience," and "reason," all words likely to inspire belief (Godwin 24). Gonsales continues to

use meticulous empirical discourse when he outlines the construction of his prototype engine,

including quantitative measurements and detailing the materials that he employs:

> I fastned [sic] about every one of my *Gans'as* a little pulley of Corke, and putting
> a string through it of meetly [sic] length, I fastened the one end thereof unto a
> blocke almost of eight Pound weight, unto the other end of the string I tied a
> poyse [sic] weighing some two Pound, which being done, and causing the signall
> to be erected, they presently rose all (being 4 in number,) and carried away my
> blocke unto the place appointed. (Godwin 25-26)

Where Gonsales previously imitated descriptions of newly discovered lands in order to make his

claims seem plausible, he here imitates the form of contemporary descriptions of inventions. One

may see this comparison explicitly delineated by comparing the description of his fictional

engine to the following, taken from *A Treatise of Artifical Fire-works Both for Warres and*

Recreation, a 1628 treatise that describes the construction of a real invention, a firework-canon:

> This instrument may bee made of…red copper, brasse and [iro]nne, but very little
> of the two last…and beeing made of this stuffe, let the measures following be
> observed. If the diameter of the calliber or bore be one foot, let the morter be two
> foot of length & let the sack or hole for the powder be the third part of a foot
> broad, and halfe a foot deep…as doth plainely demonstrate the Figure A
> following. (Malthus and Cecil 5-6)

Gonsales's account mimics familiar features of this excerpt's style - quantitative measurements,

defined substances, and step-by-step explanation. Through this mimicry, Gonsales's text

implicitly suggests that it is as possible to build a flying engine as it is to build real machines outlined in similar descriptions. Thus, this stylistic parallel bolsters the tale's plausibility.

The Man in the Moon went through three editions before 1657, and each includes an illustration of Gonsales airborne in his machine (Lawton 52-53). These images add further credibility to Gonsales's account by mimicking the form of invention descriptions in a way that relies on visual instead of textual similarities. *A Treatise of Artificial Fire-works* includes a diagram, "Figure A," in order to "plainely demonstrate" the writer's description of the machine to readers, and Gonsales's narrative mimics this convention by including an illustration of the narrator flying in his successfully assembled engine (Godwin 28). However, the illustrations in *A Treatise* and *The Man in the Moone* differ in one important aspect – Godwin's image, instead of merely demonstrating what the narrator's engine looks like when completed, attests to the fact that it actually exists and functions as described, constituting an image-based appeal to verisimilitude. Godwin's inclusion of visual evidence further associates his story with believable accounts of real inventions by appealing to the empiricist association between observation and credibility, albeit indirectly in the form of an illustration.

While many of its elements work to elicit belief, at other moments, Gonsales's narrative invites skepticism, complicating its status as fact or fiction in much the same way as its Epistle does. For instance, similarities arise between Gonsales's text and tales exposed within the storyline as being false. Early in the story, Gonsales tells an anecdote that features a printed travel account telling lies. "A certaine great Count of ours came home from the West-Indies, in triumphant manner, boasting and sending out his declarations in print, of a great victory hee had obtained against the *English*," Gonsales reports, before adding, "Whereas the truth is, he got of the *English* nothing at all in that Voyage, but blowes and a great losse" (Godwin 9-10).

Gonsales's tale is also itself a travel account; this similarity invites comparison between the anecdote's story and *The Man in the Moone* which disrupts readers' suspension of disbelief and inspires suspicion. Also, the mere mention of lies being conveyed "in print" encourages further suspicion, as it emphasizes another feature that the two texts share.

Gonsales's account also emphasizes the fictionality of his description of the moon through paradoxes of observation and description found within it. Nowhere is this more apparent than when he attempts to describe the color of the lunarians' garb. Gonsales prefaces his attempt to describe this new color by invoking the "inexpressibility topos" (Campbell "Speedy" 198): "[N]either (which is most strange, of all other) can I devise how to describe the colour of them," he declares, before providing a string of negative constructions: "It was neither blacke, nor white, yellow, nor redd, greene nor blew, nor any colour composed of these" (Godwin 71). He then declares: "But if you aske me what it was then; I must tell you, it was a colour never seen in our earthly world, and therefore neither to be described unto us by any, nor to be conceived of one that never saw it" (Godwin 71). Gonsales shields his creation's overt fictiveness by claiming that he cannot describe it. However, in contrast to the earlier detailed descriptions, one can't help but suspect this detail of being fictive; Campbell remarks on how the account's "emphatic fictionality [is] intensified by impossibilia and paradox" ("Speedy" 198). Gonsales' paradoxes here exacerbate the fictionality of his claims by demonstrating an incompatibility between empirical, "factual" description and paradoxical content that can only exist on the fictive page.

Godwin also invites his readers to consider Gonsales's story as a work of fiction by opening it within a fictional genre. Domingo Gonsales's stereotyped Spanish ethnicity and roguish actions that open the story establish him as a "picaro," a "wandering rascal who uses his wits to survive and seek respectability" and a literary stereotype found in Spanish picaresque

fiction (Poole 27). Godwin thus invokes a genre his readers would likely recognize as fictional, as the picaresque narrative was "readily available in England and in English throughout Godwin's life and had already exerted an influence on Elizabethan prose fiction" (Poole 27). Indeed, an early reader of the text, Lady Brilliana Harley, associated *The Man in the Moone* with another famous picaresque fiction in "find[ing] it to be some kine to Donqueshot [i.e. Don Quixote]" (Harley qtd. in Poole 27). Campbell similarly identifies the picaresque as "a readable genre that broadcasts its fictionality to an experienced readership" ("Speedy" 197).

However, fiction and fact do not remain so conveniently separate as they conflict within Godwin's text. They invade each other in certain passages, causing confusion and inaugurating the indeterminacy that will categorize LTNs through the 18th century. The text's use of multiple genres, empiricist theories, and timelines all result in fact and fiction intermingling for the first time within a single LTN, instantiating a trait that will characterize LTNs for centuries.

The Man in the Moone becomes indeterminate by employing multiple genres, a maneuver which pitches the text into an indeterminate space between categories of fact and fiction. As Poole notes, "*The Man in the Moone* does not sustain picaresque…but it sounds enough quasi-picaresque notes in its opening stages to evoke such a generic context" (28); it then shifts to incorporate what Campbell calls "imitation of the proto-ethnographic conventions of serious travel writing" ("Speedy" 198). In sum, Godwin uses a recognizably fictive genre, the picaresque, to convey the story's most believable claims, before adopting a more realistic genre, that of the travel narrative, to convey his overtly fictional claims about the moon. Campbell describes the indeterminate result of this shift from mismatch to mismatch as "a novel genre, simultaneously and confusingly information-bearing and fantastical, which required of its initial readers an unusually self-conscious reading practice" ("Speedy" 197). While not here satirical,

this self-conscious reading practice provides the groundwork for later LTNs' critiques of scientific discourse. Fact and fiction invade each other at the level of genre in Godwin, resulting in an indeterminate text.

Gonsales's recruitment of extant empirical theories also blurs categories of fact and fiction. He claims immediate observation of things allegedly seen en route to the moon and uses this putative evidence to deflect readers' skepticism away from his own fictional account and toward extant astronomical theories. For instance, in stating "As for that Region of Fire our *Philosophers* talke of…mine eyes have sufficiently informed me there can be no such thing," Godwin's narrator foregrounds his alleged observation as if to suggest that his empiricist methodology gives his own claims precedence over others' theories (66). Similarly, he attacks the theory of gravity before commenting "But alas how many of [Philosophers'] Errors hath time and experience refuted in this our age," making their theories seem more unbelievable than his lunar voyage because the empirical "experience" of his journey corrects them (Godwin 64). Gonsales exacerbates the difference between experience and theory in referring to the theories he opposes as "*Vanities, fansies,* [and] *Dreames"* (Godwin 65). He similarly characterizes these theories as specifically anti-empirical when he wishes "*Philosophers* and *Mathematicians…* [to] confesse the wilfulnesse of their owne blindnesse," using an implicit metaphor of sight to characterize them as obstinately resistant and situate empiricism's visual evidence in the right (Godwin 58). The narrator further emphasizes this divide between experience and theory when he claims**,** "I found then by this Experience [things] which no Philosopher ever dreamed of" – where Philosophers "dream," the narrator "[finds] by Experience" (Godwin 46).

In a strange reversal of Kepler's use of fiction to argue for the inclusion of theory in the empirical paradigm, Godwin's fiction deflects skepticism from its own fictional claims by trying

to expose other scientists' theories as false because they involve no direct observation. In this context, believability becomes a relative thing – relative to the conventions of seeing and saying that the text juxtaposes, and relative in that Godwin's assertions and the extant theories must compete for belief not in a mutually exclusive manner of believable or not, but in a manner of more and less believable. This relative construction of believability functions as a symptom of indeterminacy; mutually exclusive categories of fact and fiction dissolve, highlighting the text's position in the indeterminate grey space between them.

Gonsales's narrative ends on a note of indeterminacy by collapsing two measurements of time: the real time of reading, and the time marked within Godwin's fiction. Campbell analyzes this collapse in detail in her essay "Speedy Messengers." She first remarks the narrative's unusual emphasis on time as a way to elicit verisimilitude, as when Gonsales remarks, "[T]welve dayes was I upon my Voyage, and arrived in that Region of the Moone, that they call Simiri, September the 21 following. The 12th day of May, being Friday, we came unto the Court of the great Irdonozur" (Godwin 110). However, Campbell identifies another type of time functioning in that "the…narrative makes continual reference to its own existence in time, the time of reading"; this she identifies in Gonsales's self-referential comments, as when he notes after a digression, "But where am I? At the first I promised a History, and I fall into disputes before I am aware" (Godwin 60). In this quotation, Gonsales refers to himself as a writer (i.e. "where am I?") and considers his story as engaging the reader's time, in this instance digressively.

Campbell posits that these two types of time collapse in the final lines of Godwin's text:

> There I did relate to Father Pantoja…these fore-related adventures, by whose directions I put them in writing, and sent this story of my misfortunes to Macao, from thence to be conveighed for Spaine, as a forerunner of my returne. (122)

This passage implicates the time the reader has spent reading Godwin's text as part of the plot's series of fictional events; because the reader is reading Gonsales's narrative, it means that Gonsales's return is imminent (Campbell, "Speedy" 200). "At this closing point...the reader's time (Gonsales's future) has been absorbed into the fiction," Campbell argues, emphasizing that "this is the earliest text that [she] know[s] of in English to produce such a collapse of reading time and narrated time" and characterizing it as likely more disorienting than the text's generic multiplicity to contemporary readers ("Speedy" 200-201). With this perplexing conclusion, the entirety of Gonsales's narrative retroactively becomes an indeterminate text, something between fact and fiction but unable to fit simply into either category now that the binary has collapsed.

In sum, *The Man in the Moone* sometimes switches between fiction and fact as stable, opposing categories, but at other times blurs or splices these categories, resulting in an indeterminate text existing somewhere between fact and fiction and unable to be characterized completely by either designation. As Campbell summarizes, it "is effective, particularly for its early readers, in bridging a gulf between the known and the impossible, the near and the unimaginable, the actual and the fictional: that is, between realms as constitutively remote as the Earth and the Moon" ("Speedy" 201). As she notes, this indeterminacy likely made *The Man in the Moone* a bewildering text for contemporary readers ("Speedy" 200-201); it is still regarded as "a very curious piece of work" and "a literary surprise" to this day (Philmus 260; Campbell, "Speedy" 199). However, we should not be content merely to identify *The Man in the Moone*'s indeterminacy as an amusing anomaly, but rather follow it as it becomes a defining feature of LTNs and the disruption the genre relies on in order to critique empirical discourse.

Godwin's Legacy: Indeterminate References in de Bergerac and Wilkins

The rest of this chapter will examine two narratives that attempt to uncouple the discursive strands that *The Man in the Moone* first combined. Cyrano de Bergerac's 1657 *Voyage dans la Lune* [A Voyage to the Moon] imports Godwin's text into a satirical context, while Bishop John Wilkins's pamphlet *A Discovery of a New World* imports it into a serious, speculative context. However, a brief glance at the manner in which each of these texts references Godwin's will demonstrate that the indeterminacy inaugurated by *The Man in the Moone* is not to be easily dismissed, as it brings indeterminacy to texts in which it is referenced.

Godwin's text demonstrates indeterminacy but does not employ it to satirical ends, remaining squarely within McKeon's category of naïve empiricism. This is not so in de Bergerac's *Voyage dans la Lune* [A Voyage to the Moon], which uses Godwin's source material to expose and attack what critic Eric MacPhail identifies as "the paradox of literary truth," the assumption that verisimilar literature portrays objective reality (37). De Bergerac's LTN thus exists in the genre's tradition of critiquing different formulations of truth.

Certain scenes in de Bergerac's work recognize other texts as fictions. This tactic destabilizes the satire at work by making de Bergerac's text not only metafictional, but self-referential. By implicating other fictional works as the butt of its jokes, it closes in on a trend of self-reflexive satire in LTNs that will mature in the 18th century, after the Royal Society influences scientific discourse. On the moon, de Bergerac's narrator claims to have met a "little man," who after greeting him in Spanish, "told [him] he was an *European*, a native of old *Castille*: That he had found a means by the help of Birds to mount up to the World of the Moon, where then we were" (de Bergerac 103-104). This character can be none other than Godwin's

Domingo Gonsales. Describing the scene's effect on the narrative, MacPhail notes that "[t]he encounter with a fictional character on the moon certainly undermines the verisimilitude of [de Bergerac's] text while blurring the boundaries between fiction and the real world to which fiction purports to refer" (41-42). The text thus manipulates its content to gesture to its own fictionality while its rhetoric continues to elicit belief ("I met…"). By splitting itself down the middle, it critiques the pretensions of verisimilar literature, but at a price of its own stability, importing not only Godwin's text but also the indeterminacy it contains.

While de Bergerac's lunar voyage transposed Godwin's project into the satirical mode, other authors sought to draw it into the opposing serious, empirical tradition, imbuing it with just as much epistemic complexity. In 1634, Bishop John Wilkins considered an inhabited moon in his treatise *A Discovery of a New World, or A Discourse Tending to Prove, that 'Tis Probable There May Be Another Habitable World in the Moon*. In contrast to de Bergerac's satire, *Discovery* was not presented as a work of fiction, but as "a serious semiscientific work on the nature of the moon and the possibility of man's flying thither" (Nicholson, "Introduction" xii).

By exposing the failings of purely visual empiricism, the treatise opens by defending its method of speculating about an inhabited moon. Wilkins initially recognizes the skepticism his ideas inspire and opposes a fictional interpretation of them. "True indeed," he notes, "the strangeness of this opinion will detract much from its credit; but yet we should know that nothing is in its selfe strange…'tis our ignorance which makes things appeare so" (Wilkins, *Discovery* 19). As an example of this, Wilkins adds that "you may as soone perswade some Country peasants that the Moone is made of greene Cheese (as wee say) as that 'tis bigger than his Cart-wheele, since both seeme equally to contradict his sight, and hee has not reason enough to leade him farther than his senses" (*Discovery* 19-20). By associating the idea of the moon being made

of green cheese with the ignorance of the peasant, Wilkins associates cultural fictions with a sole reliance on sensory evidence, a position that he, like Kepler, opposes in favor of an empiricism that also involves speculation.

However, in order to bolster his argument, Wilkins remains defensively speculative in his treatise, especially in regard to lunar inhabitants. The title of the work manifests this tendency; in "A Discovery of a New World, or A Discourse Tending to Prove, that 'Tis Probable There May be Another Habitable World in the Moon,*"* qualifiers like "Tending to Prove," "Probable," and "May Be" establish the work as dealing in probabilities, not facts. Wilkins also articulates this qualification in his preface, urging readers "*[t]o remember that I promise onely probable arguments for the proofe of this opinion, and therefore [they] must not looke that every consequence should be of an undeniable dependance, or that the truth of each argument should be measured by its necessity"* (*Discovery*, Preface). By constraining himself to plausible speculation, Wilkins, like Kepler, integrates fiction into the empirical paradigm. However, he hedges his bets and refuses to discuss the possibility and nature of lunar inhabitants, declaring "I dare not my selfe affirme any thing of these Selenites, because I know not any ground whereon to build any probable opinion" (*Discovery* 206-207). Cressy notes that Wilkins's refusal to assert anything definite here allows him to "studiously [avoid] …fiction" (969).

While *Discovery* initially avoids fiction, Wilkins becomes "the first to capitalize on [*The Man in the Moone*]" by using its literary fiction to inspire scientific speculation in the 1640 revision of his treatise (Philmus 267). Wilkins writes that after penning *Discovery*, he "chanced upon a late fancy to this purpose under the fained name of *Domingo Gonsales*" in which "(besides sundry particulars wherein this later Chapter did unwittingly agree with it) there is delivered a very pleasant and well contrived fancy concerning a voyage to this other world"

(*Discourse* 240). These lines arrange a distinct rhetorical division between Godwin's text, a "well contrived fancy" involving "fained" elements, and Wilkins' own serious treatise, which only "unwittingly" corroborates some of Godwin's points. The gap Wilkins draws between his speculations and Godwin's fictions is further emphasized by the way in which he summarizes Godwin's tale using the subjunctive mood and hypothetical constructions. For example, he writes, "[Gonsales] *supposeth* that many [geese] together, *might* be taught to carry the weight of a man; especially if an engine *were* so contrived *(as he thinks it might)* that each of them *should* beare an equall share in the burden" (*Discourse* 241, emphasis mine). Despite this overdrawn distinction, Wilkins's text inadvertently reveals the ways in which Godwin's fiction and his own speculation are similar, as they both rely upon eliciting belief, either suspension of disbelief or belief in plausibility. As evidence of this, Wilkins writes that Godwin concludes "that tis not altogether improbable, [the geese] should proceed from the Moone" (*Discourse* 241). As a result, literary and scientific methodologies overlap. Godwin's fictional ideas are here directly integrated into a scientifically speculative context, demonstrating the overlap and growing confusion between genres.

As de Bergerac's and Wilkins's responses demonstrate, Godwin's indeterminacy did not remain confined within his text as a discursive anomaly, but spread to other works; it eventually became a defining feature of 18th-century LTNs. When responding to the Royal Society's linguistic projects, this indeterminacy would power the genre's most trenchant critiques of scientific discourse by complicating the categorical thinking it came to rely upon.

Chapter Three: The Royal Society's Discourse And LTNs' Satirical Critique

Early empirical discourse emerged without the benefit of institutional structuring to guide its development, but this changed in 1660 with the establishment of England's Royal Society ("History of the Royal Society"). In order to enhance the authority of scientific writing, this organization created its own particular version of empirical discourse and suggested that all texts that employed it had true content and all texts that did not were unreliable. The Royal Society, to align its own discourse exclusively with fact, thus encouraged a binary view of fact and fiction as mutually exclusive categories.

This binary presented LTNs with a new target to critique, as it left indeterminate texts no place in which to exist comfortably. These texts began to do the same work as Lucian's *True History* in a new scientific context: just as *True History* revealed travel writing to be unreliable, so did LTNs from the early 18th century attack popular empirical discourse, revealing it to have only an assumed association with true content. This cultural climate produced LTNs that articulated the genre's most virulent critiques at the expense of their own textual stability.

I open this chapter with an examination of the Royal Society's linguistic project in order to demonstrate how that project developed and circulated a binary perspective of fact and fiction. Then, I examine the changes that this perspective prompted in the LTN genre, tracking the emergence of its satire of scientific discourse through three texts: David Russen's *Iter Lunare* (1703), Daniel Defoe's *The Consolidator* (1705), and Murtagh McDermot's *A Trip to the Moon* (1728). I hope to demonstrate how in this historical moment, the LTN's indeterminacy began to function as a mechanism of trenchant critique which eventually led to the demise of the genre.

The Royal Society's Systematized Discourse: Fact vs. Fiction

As the LTNs previously discussed were being written or translated into English in the mid-to-late 17th century, the nature of scientific inquiry was shifting as empiricism made itself felt in society. In the 1650s and 1660s, "the Scientific Revolution reached a state of consolidation," and professional societies dedicated to the pursuit of empirical knowledge sprang up across Europe (Dear 145). 1660 saw the founding of England's own Royal Society of London for Improving Natural Knowledge ("Thomas Sprat"). While this organization functioned within the established tradition of empiricism, it systematized empirical discourse to establish its authority and by doing so, became the face of empiricism in the public eye.

The Royal Society sought to differentiate itself from scholarly tradition by inverting the received relationship between ancient authority and immediate experience in intellectual writing. Traditional scholarly conventions required writers to reference the works of revered figures from antiquity in order to legitimate their own ideas. As historian of science Peter Dear notes, "'ancient authority'… was located in authoritative texts," and these texts "determined the character and function of statements of general experience," which were originally phrased as sweeping statements about what generally was found to be true, and not conveyed as a report of any specific incident (Dear 149). However, in establishing themselves as the new authority, the Royal Society elevated experience above textual references and changed how experience was conveyed in writing. Instead of providing "generalized statement[s] about how some aspect of the world behaves," they provided "report[s] of how, in one instance, the world had behaved" – reports that employed the discourse of empiricism for emphasis (Dear 152).

To emphasize the immediacy of recorded experiences, the Royal Society developed a plain style of writing to use in its reports. The Society's discourse incorporated features of previous empirical works; for instance, reports described discrete events and incorporated visual descriptions and circumstantial details such as time and place to establish that they had actually occurred (Dear 154). However, the Society also established new stylistic conventions. For example, it drew significance from the voice of its writing. If an observation took place in the context of an arranged experiment, the passive voice was employed to describe how it was set up, and a recipe-like set of instructions outlined this procedure (Dear 153). To demarcate clearly the moment of observation from the list of instructions, the active first-person voice – the "empirical I" – was often reserved for the moment of observation (Dear 153). Combining familiar and new conventions into a strict formal system, the Royal Society's discourse can be seen as a deliberate codification of the existing empirical discursive tradition.

Empirical discourse had originally arisen by incorporating elements of fiction via speculation and theory, as my previous analysis has shown. However, the Royal Society attempted to trim all fictional elements from its particular version of empirical discourse. It arranged fact and fiction as a false binary in order to encourage a singular association of its discourse with fact, an association that LTNs would eventually critique.

One can see this fact-fiction binary at work in Thomas Sprat's 1667 *History of the Royal Society*. The Society imagines its discourse as opposing fictional styles, as is evident when Sprat writes that its members "have endeavour'd to separate the knowledge of Nature from the colours of Rhetorick, the devices of Fancy, or the delightful deceit of fables" (62). In the opinion Sprat here demonstrates, literary devices are to be purged from the society's discourse; he "openly declares that the mingling of poetry with philosophy is a grave error and [that] they should be

kept resolutely apart" (Cartwright and Baker 81). Sprat similarly disdains "the luxury and redundance [sic] of speech" and aligns such perceived flaws with literary fiction by mentioning the "trick of Metaphors" and referring to rhetoric as "this beautiful Deceit" (111, 112, 112). He characterizes the Society's discourse as contrastingly "reject[ing] all the amplifications, digressions, and swellings of style," consisting of "a close, naked, natural way of speaking; positive expressions, clear senses, a native easiness bringing all things as near the mathematical plainness as they can," and "deliver[ing] so many things almost in an equal number of words" (Sprat 113). As Godwin's Gonsales praises experience at the expense of the "*Vanities, fansies,* [and] *Dreames*" of theory (65), Sprat arranges a fact-fiction binary by encouraging readers to associate the Royal Society's new writing style solely with true content.

This fact-fiction binary is not only visible in the way the Society imagined its discourse, but also in the divisive way it employed it. For instance, in barring all speculation from its new discourse, the Royal Society frowned upon reports that included hypotheses (Dear 157). While hypotheses have since become an integral part of the scientific method, by hypothesizing in a report, the writer steps out of his prescribed role as observer to make arguments not based on immediate evidence (Dear 157). Dear cites Henry Power's quotation of Boyle as explaining the contemporary bias against this practice:

> When a writer…acquaints me only with his own thoughts or conjectures, without inriching his discourse with any real Experiment or Observation, if he be mistaken in his Ratiotination, I am in some danger of erring with him… But if a Writer endevours, by delivering new and real Observations or Experiments, to credit his Opinions, the case is much otherwayes; for, let his Opinions be never so false (his Experiments being true) I am not obliged to believe the former, and am left at my liberty to benefit my self by the latter. (Power qtd. in Dear 157)

Boyle situates the "thoughts," "conjectures," and "Opinions" of hypotheses as unreliable ("I am in danger of erring with him") in contrast to experiments, painted in broad strokes as "being true." Thus, Boyle propagates the Royal Society's perspective of fact and fiction as a binary in order to discredit hypotheses and encourage a reliance solely on observation.

The Royal Society's fact-fiction binary often encouraged scientists to invent fictions to meet the organization's strict discursive standards. In the Society's publications, "the absence of a discrete experience as the culmination of [a] report" would "[deprive] it of proper credentials" (Dear 153). To adhere to this prescribed form, Sir Isaac Newton completely fabricated the famous anecdote where he is said to have held up a prism and see it split a beam of light into various colors; on the contrary, these ideas were based on thirty years of research and were not defined by a single observable moment (Dear 154-155). However, the Royal Society's conventions required articles considered for publication to revolve around a single moment of observation, so "[Newton] gave the Society just the sort of thing which it required – an event, in which he was the central participant" (Dear 155). Great irony lies in the fact that Newton was forced to invent a "spurious description" (Dear 155) – putting it more bluntly, to lie – in order to have already well-supported but theoretical ideas accepted by the Royal Society. The fictional elements of empirical discourse here demonstrate how necessary they are to the scientific perspective by functioning as a vacuum: the Royal Society's attempt to exclude theory and speculation necessitated the creation of fictions to fill that gap. The example of Newton's prism demonstrates how the Society's strict adherence to its seemingly truthful discourse generated indirect effects that compromised the purported purely factual status of its publications.

Despite the composite status of their publications, the Society encouraged a perception of its texts as completely factual. In instructing observers how to employ the new style in their note-

taking, the Society imposed an exclusive fact-fiction binary by suggesting that accounts that used the new empirical style were all true and accounts that did not were all unreliable. The Society set itself up for critique by LTNs by deriving believability solely from form and not from content.

Believability is formulated in this way in the Society's 1667 prescriptive pamphlet, *Directions For Observations and Experiments to be made by Masters of Ships, Pilots, and other fit Persons in their Sea-Voyages*. It aims "to draw up some Directions for Seamen, the better to capacitate them for making such Observations abroad, as might be pertinent and suitable to the [Society's] purposes" – in other words, to standardize sailors' writing so that the Society can regard their notes as dependable sources by their exclusive new standards of authority (*Directions* 434). The pamphlet instructs sailors "to keep an exact *Diary* of [their] observations and Experiments," asking them not only "to remark curiously" specific topographical features, but also "to measure and describe the same Exactly" (*Directions* 434, 439, 439). It describes how to take various measurements and includes tables and written records of experiments as models. By specifying not only what but also how sailors should observe, the pamphlet demands that sailors use the new discourse in order that their observations be taken seriously.

The pamphlet encourages the use of the new discourse by suggesting that travel accounts that use it are all reliable, whereas older accounts that do not are to be distrusted. Thus, the pamphlet imposes a fact-fiction binary on other texts to correlate formal differences with different levels of believability, biasing readers in the Society's favor. The pamphlet challenges the authority of a conventional travel account most directly when it asks sailors to investigate "whether in some places of the Sea, there be any sweet Water at the Bottom," a phenomenon asserted to be true in a previous Dutch account:

> …the *Affirmative* whereof is to be met with in the *East-Indian Voyages* of *Van Linschoten*, who *pag.* 16 of that work, as 'tis *Englished*, records, that in the *Perisian Gulf,* about the Isle of *Barbarem*, they fetch up with certain Vessels (which he describes not) Water out of the Sea, from under the Salt-Water, four or five fathom deep, as Sweet as any Fountain-water. (*Directions* 447-448)

This passage's rhetoric subtly denigrates Van Linschoten's account. The parenthetical "which he describes not" does not critique the content of his observations as being unbelievable, but rather attacks the form in which he conveys them, suggesting it does not include enough details to be considered reliable by the Royal Society's standards. The phrasing of the sweet-water's location as "four or five fathom deep" also paints the travel account as inaccurate; a fathom measures six feet, so this would have been a significant range of error ("fathom, n."). Similarly, the inexact location conveyed in "about the Isle of Barbarem" also critiques the account's form as lacking the Society's prerequisite descriptive accuracy. By snubbing Van Linschoten's account for lacking precision and detail, the Royal Society's pamphlet characterizes travel accounts that do not use its new discourse as unreliable and inferior to those that do.

A later pamphlet, *General Heads for the Natural History of a Country Great or Small Drawn Out for the Use of Travellers and Navigators* (1692), more directly impugns the reliability of older travel accounts to the advantage of new reports that employ the Society's discourse. Written by Robert Boyle, a prominent member of the Royal Society, this pamphlet consists of lists of questions for travelers to investigate, organized by country. Its first list concerns Turkey and begins with a passage that lampoons the reliability of previous accounts:

> Though we have by Journal-Books a fuller Account given us of *Turky* [sic] than of many other Countries, yet because there are in these but imperfect Relations of many Things, which yet are needful to be known… (Boyle 58)

This passage further exposes the relationship between the style and reliability of travel accounts cultivated by the Royal Society. The ample extant accounts of Turkey are rejected as unreliable not because of their content, but because of their form: they are "imperfect Relations" (Boyle 58). The passage aims to replace these "imperfect relations" by guiding its readers in recording observations in the accepted style. For instance, when Boyle asks travelers to investigate a poisonous Hungarian lake whose fumes are reputed to knock birds out of the air, he requests them to pursue ample details surrounding the phenomenon, specifically "what are the particulars of this as to Taste, Smell, Colour, Heat or Cold; whether any Waters run into it, and what Minerals are found near about it, to which these Qualities can be mostly attributed" (84). The addition of such details would establish reports as reliable by the Royal Society's standards.

The phenomena the pamphlet's questions concern range in believability from plausible to unbelievable, bolstering the perception of the Royal Society's discourse as factual by comparison. The pamphlet's questions concern phenomena ranging from the likely ("Whether Birds and wild Beasts grow white [in Poland] in Winter-Time, and recover their Native Colour in Summer" (78)) to the improbable ("What Truth there is in that Relation, of Swallows being found under Waters, congeal'd in Winter, and reviving if they be fish'd and held to the Fire" (75-76)) to the overtly fictional ("To enquire whether the Appearance of Legs and Arms of Men, related to stand out of the Ground, to a great Number, at five Miles from *Cairo,* on *Good Friday,* do still continue, and how that Imposture is performed" (72)). This range orients the Society's reports in opposition to both previous travel accounts' plausible claims and to overtly fictional rumors. By mingling these together, the text encourages readers to perceive even plausible claims in previous accounts as fictional and as opposing the Royal Society's reliable texts.

The Royal Society elicits belief in many of its publications by employing a binary view of fact and fiction, and as such texts popularized this view, they inspired changes in LTNs. This is not surprising, as LTNs exist as indeterminate composites in the middle space between fact and fiction, the categories that the Royal Society viewed as mutually exclusive. Likely because of this, LTNs began to critique the putative association of the Royal Society's discourse with truth by employing it in their overtly fictional narratives. However, this literary shift didn't happen at the flip of a switch. One can see satire emerge as the dominant mode in LTNs by examining multiple LTNs from the early 18th century and noting how they increasingly critique the scientific discourse they employ. Such an examination also sheds light on the contemporary status of fact and fiction by chronicling two incompatible ways in which it was formulated: as the Royal Society's clear-cut binary and LTNs' blurry spectrum.

David Russen's *Iter Lunare*: Indeterminacy Grows Uncomfortable

Indeterminate LTNs encountered problems as they attempted to fit into each of the Royal Society's mutually exclusive categories of fact and fiction simultaneously, as David Russen's *Iter Lunare, or a Voyage to the Moon* (1703) demonstrates. A response to de Bergerac's satirical LTN *Voyage Dans La Lune* [*A Trip to the Moon*], *Iter Lunare* is unique in that its indeterminacy derives from its attempt to separate factual and fictional strands of de Bergerac's work in response to the imposition of a binary perspective. In comparison to *The Man in the Moone*'s indeterminacy, *Iter Lunare*'s indeterminacy is much tenser and treated as problematic.

Like Godwin's Epistle, *Iter Lunare*'s Preface elicits competing serious and satirical readings and establishes the text as indeterminate. Russen initially introduces his work as a

serious and reasonable "Tract" that "will find Approbation from the Learned and Ingenious"

(Russen, A2). However, he switches tactics by including folk-cultural references to the moon:

> I know you may as soon perswade [sic] some that the Moon is made of a Green
> Cheese, as that it is a kind of Sea and Earth, of Land and Water. …They look
> upon the Notion of its being Peopled a Romance; though from their Infancy they
> have had the Tradition of the Man in the Moon, who, some will tell you, carries a
> Bundle of Bushes on his Back. (Russen A2)

In contrast to the opening lines, this passage's logic and rhetoric encourage a fictional reading of

Iter Lunare. Its parallel statements suggest that if readers take Russen's arguments seriously,

they should also believe in the Man in the Moon and that the moon is made of green cheese.

Thus, the Preface's folk-cultural references "[suggest] that [Russen's] narrative is just a tale for

children" and "[introduce] a note of irony into his seemingly serious treatment of [de Bergerac]"

(Capoferro 175). The very comparison of cultural fictions and scientific conjectures tints science

with fictional connotations, as did Kepler's use of the Man in the Moon in his *Conversation*.

Russen recognizes the composite status of his own text in his Preface's final lines, referring to it

as being "composed of serious Philosophical Reflections, intermixed with variety of diverting

Thought" (A3). The text thus establishes and recognizes its indeterminacy in its first paragraphs.

Iter Lunare struggles with its source material in trying to fit de Bergerac's indeterminate

text into a fact-fiction binary. Early on, Russen suggests that the contemporary title of de

Bergerac's work, *Selenarchia: or, the Government of the World in the Moon: A Comical History*

(Bowen v)*,* should employ the word "serious" instead of "comical." Russen outlines his thusly:

> …the Title that the Translator gives it (when he calls it a *Comical History*) seems
> to be too full of Levity, and unbecoming that Gravity which a Treatise of so
> serious Matter doth require. For though it be interlaced with much Matter of
> Mirth, Wit and Invention, of things either doubtful, or meerly feigned, and so in
> some sence may be ranked with *Sir Thomas Moor*'s *Utopia, Don Quixot's*

> *Romantick Whymseys*, or *Poor Robin's Description of Lubbardland*; yet it is throughout carried on with that strength of Argument, force of Reason, and solidity of Judgment in the Demonstration of things probable, that it may not be unbecoming the Gravity of *Cato*, the Seriousness of *Seneca*, or the Strictness of the most rigid Peripatetick or Cartesian; and instead of *Comical*, may deserve the Epithete of the *most Rational History of the Government of the Moon*. (2-4)

The passage catalogues the work with both famous fictional works and serious philosophical musings, suggesting that Russen views de Bergerac's narrative as an indeterminate text. While he regards it as serious scientific speculation in the quotation above, Russen later categorizes de Bergerac's text with other LTNs and describes them as purely fictional in other passages, saying "As for the Story of those, who with our Author, pretend to have went [to the moon], they are feigned Relations, under which they have endeavoured [sic] to teach us probable, yet doubtful, Principles" (61). Unsure of how to catalogue de Bergerac's work, Russen's text demonstrates the fault line emerging between fact and fiction as it too becomes indeterminate in its response.

Iter Lunare's relationship with empirical discourse also bifurcates between poles of obedient usage and open critique, making it one of the first LTNs to question its own scientific discourse. In certain passages, Russen demands detailed accounts and experimental proof of de Bergerac's claims, adopting the Royal Society's discursive standards. For example, responding to de Bergerac's narrator's claim to have floated using bottles of rarified dew, Russen "own[s]" that "the Sun will rarifie the Dew, and that shining through Glass, its heat is augmented, whereby the Dew will be more rarified," but adds, "whether the heat of the Sun's Beams will attract and raise the Vials upwards, is a Querry, of which, I think, as yet no Experiment hath been made" (51). In the first quotation, Russen twice employs the passive voice typical of the Royal Society's discourse, while in the second, he demands experimentation for validation, another of its characteristics. Similarly, when de Bergerac's narrator claims that a character ascended to the

moon by trapping vapors from a sacrifice in hermetically sealed jars, Russen remarks, "But till he informeth us what Smoak [sic] he put into them, or what Metal they were made of, we must defer our Censure of the natural Possibility of an Ascent by any such means" (84). He here withholds belief in the absence of adequate concrete details, another Royal Society standard.

While these passages of *Iter Lunare* employ empirical discourse without critique, others complicate the text by critiquing empiricism for the way it prefaces immediate "sense" above theoretical "reason." "'Tis Reason, and not Sense, must judge of things above us," Russen claims, "For should we measure all things by Sense, wherein should we differ from Brutes?" (102). Russen then praises those who use their reason, but notes that those who "credit nothing but what they see, or their Senses can conceive…degenerate into worse than Brutes, and become more unreasonable than those who have no Reason at all" (102). This critique somewhat implicates the text's own empirical passages, subtly indicating the start of a strain of self-critical LTNs and further demonstrating the challenge indeterminate texts pose in a binary system.

Unfortunately, criticism of *Iter Lunare* has not recognized its indeterminacy and remains divided into two opposing camps. Some critics, like Parrett, read the text as "a serious scientific consideration of the logistics of the lunar journey" presented in de Bergerac (66). "Where de Bergerac was satiric, Russen is serious," asserts Mary Elizabeth Bowen (vi). Conversely, others hold the work to be subtly but pointedly satirical. Capoferro argues that no "mentally sane savant could have regarded Cyrano's work as a handbook for empirical projectors," and that the text's "ironies and contradictions…rather make it a piece of mock-commentary" (175). Similarly, William Graves claims that "Russen mingles levity with serious satire" (8). Subjected only to an either-or mentality, *Iter Lunare*'s status as serious speculation or satirical fiction has not been resolved.

The status of *Iter Lunare* has not been resolved because it is fundamentally irresolvable; the text exists in a dynamic liminal space between naïve empiricism and extreme skepticism, serious and satirical modes, and fact and fiction. Recent criticism is beginning to admit this view; Capoferro is surely correct in describing *Iter Lunare* as a **"fundamentally self-contradictory"** and "highly ambivalent text," and Parrett emphasizes these traits in noting that "Russen…occupies a liminal space between the scientist and the novelist" (Capoferro 176, 174; Parrett 70). As an indeterminate work that shakes the norm of mutually exclusive categorical thinking, *Iter Lunare* has greater significance than either prominent critical perspective has yet encompassed, and attests to early notes of self-satire that the Royal Society's binary paradigm caused within LTNs.

The Consolidator: Scientific Discourse as Satirical Mechanism

Continuing the trend begun in *Iter Lunare*, Daniel Defoe's LTN *The Consolidator* (1705) employs scientific discourse in its satire. It does not make this discourse the object of its satire, but instead uses it to satirize other targets such as religion and politics. "Parodying contemporary scientific discourse...enable[s] Defoe to attack the objects which he describes," Mark Jordan argues in his master's thesis; "[Defoe] ridicules this style only to attack his ulterior satiric targets; his satire is not directed at scientific writing itself, but at the political and religious controversies he describes with this scientific language" (9, 22-23). As scientific discourse is used as an instrument but not a target of satire in *The Consolidator*, we can view the work as a stepping stone between *Iter Lunare*'s alternating support and critique of scientific discourse, and later texts use of the discourse as both satirical instrument and target. *The Consolidator* thus attests to LTNs' growing challenge of the Royal Society's fact-fiction binary.

Through his use of the word "transactions" in part of *The Consolidator*'s subtitle

Memoirs of Sundry Transactions from the World in the Moon, Defoe encourages the direct

comparison of his account with the Royal Society's *Philosophical Transactions* (Jordan 6-7).

The text bolsters this comparison through stylistic mimicry, as "sections of [*The Consolidator*]

are similar in content and tone to popular scientific writings," but function in "a playful and

parodic manner" (Jordan 7). To demonstrate this stylistic parallel at work, Jordan compares

Defoe's description of the Consolidator, a fictional machine used for lunar transportation within

the narrative and an allegorical representation of English Parliament, to passages from Robert

Boyle's description of a "New Pneumatical Engine" in *New Experiments Physico-Mechanical*

Touching the Spirits of the Air (1660) (Boyle qtd. in Jordan 25). Here is Boyle's description, its

empirical style unmistakable:

> At the top of the vessel A, you may observe a round hole, whose diameter BC is of about four inches; and whereof the orifice is encircled with a lip of glass, almost an inch high....
>
> The use of the lip is to sustain the cover delineated in the second figure; where DE points out a brass ring, so cast, as that it doth cover the lip BC of the first figure, and is cemented on, upon it, with a strong and close cement. (qtd. in Jordan 25)

Compare the above to Defoe's description of the Consolidator,

> …a certain Engine formed in the shape of a Chariot, on the Backs of two vast Bodies with extended Wings, which spread about 50 Yards in Breadth, compos'd of Feathers so nicely put together, that no Air could pass… (36)

Each of these passages consists of descriptive prose identifying different parts of each machine,

and describing how they interact (Jordan 27). Note too that both employ the passive voice. As in

the comparison between Godwin's diagram of his flying Engine and diagrams of real machines,

the most striking difference that emerges between these excerpts is that Boyle's describes a real

machine, where Defoe's describes a fictional invention. Defoe thus complicates the Royal Society's fact-fiction binary by using its discourse to describe a machine that does not exist, disrupting the discourse's association with true content and setting the stage for satire.

Defoe uses scientific discourse to satirize the English government from a safe distance. The Consolidator has specifically 513 feathers, the number of members in the English Parliament (Defoe 37). Defoe's narrator says that "the Quill or Head of every Feather is *or ought to be* full of a vigorous Substance, which gives Spirit, and supports the brightness and colour of the Feather" (47-48). He critiques Parliament in saying that despite this, a few are "exceeding empty and dry; and the Humid being totally exhal'd, those Feathers grow very useless and insignificant in a short time," while others "are so full of Wind…[and thus] so fleet, so light, and so continually fluttering and troublesome, that they greatly serve to disturb [the Consolidator] and keep the Motion unsteddy" (Defoe 48). Allegorically mocking Parliament's members as feathers allows Defoe to criticize them in ways that would otherwise incur punishment.

Defoe also uses empirical inventions like the telescope as a mechanism of satire. On the moon, his narrator discovers glasses that allow "strange things, which pass in our World for Non-Entities…to be seen, and very perceptible; for Example: *State Polity*, in all its Meanders, Shifts, Turns, Tricks, and Contraries…" (Defoe 73). Making state policy the object of visual observation, Defoe critiques its needless complexity when his narrator declares that "*State Policy*…requires vast Volumes to descend to the Particulars of, and huge Diagrams, Spheres, Charts, and a Thousand nice things to display" (82). After all this work, "all the vast Contradictions are made Rational, reconciled to Practice, and brought down to Demonstration" (82). This set-up allows Defoe to introduce points of contention with contemporary governmental policy, noting "Here it would be plain and rational, why a Parliament-Man will

spend 5000 *l.* to be Chosen, that cannot get a Groat Honestly by *setting there*" (83). Empirical

inventions thus help Defoe to satirize the English government by acting as allegorical barriers.

The Consolidator uses scientific discourse and technology as the mechanism, not the

target, of its satire. We can thus see scientific discourse's place in the LTN growing more and

more involved with critique. In the next text discussed, this tension finally cracks and results in a

text satirizing its own discourse, becoming utterly unstable.

McDermot's *A Trip to the Moon*: A Cretan Paradox of Self-Satire

LTNs articulate their strongest critique of the Royal Society's scientific discourse and its

purported association with truth by satirizing their own prose and destabilizing their own

narratives. As with Defoe's *Consolidator*, they disrupt the association between scientific

discourse and true content by using the discourse to promote obvious impossibilities. However,

the contradictions generated work to critique the discourse not as a distant target, but at work in

their own prose. Like the paradox of the Cretan liar that Lucian's original LTN evoked, these

most satirical LTNs embed a vicious circle of self-contradiction directly into their prose.

Murtagh McDermot's 1728 *A Trip to the Moon* critiques the Royal Society's scientific

discourse in this manner. Despite its narrator's claim that readers should "not expect…much

Rhetorick" since he is "studious to deliver the Truth," he uses empiricist discourse ironically and

satirically to highlight his own language's ability to deceive (McDermot 90). Such deception is

made overt when the narrator claims to have learned the lunar language in a single night:

> [My tutor] took a large and correct Dictionary, and minc'd the Leaves of it; those he
> put into an Earthen Vessel half full of Water…he plac'd the Vessel, with its upper

Part parallel to the Horizon, upon a gentle Fire, where he let it remain thirty-nine Minutes. The Air which was inclos'd in the Vessel, being put into a violent Motion by the Heat of the Fire, together with the Motion of the Water, soon reduc'd the minc'd Leaves to a Consistence of Jelly. The Vessel had been cover'd so closely, to hinder any of the Letters from being carried off in Vapours, and that the Air in the upper part of the Vessel might act with the greater Force. (McDermot 15)

At this point in the passage, the decidedly scientific, detailed way in which the narrator is describing the process of creating the jellied dictionary elicits belief, even though certain details like the possibility of "the Letters being carried off in Vapours" tip readers off to the absurdity of this process (McDermot 15). The narrator then consumes the jelly and falls asleep. His tutor watches him during the night, and reports in the morning having been "wonderfully delighted to hear [him] break Wind in [his] Sleep; sometimes with all the force of Rhetorick, sometimes in the Tone of a Grammarian" (McDermot 15). In associating inflated, rhetorical speech with passing gas, the author undermines his previously serious, believable use of scientific discourse earlier in the same paragraph. This contradictory maneuver cracks the text along a fault line of believability and skepticism, leaving readers delighted. In response to this rupture, the author uses humor to smooth over the division and keep the text coherent. Ostentatiously contradictory in its attitudes toward discourse, this passage reveals the association of the Royal Society's discourse with true content to be an empty one.

By using famous empirical phrases to contradict the source material from which they originate, McDermot's text further emphasizes that scientific discourse is a separate entity from the truths it can convey, and may be used to promote even the most impossible notions. For instance, the narrator's description of seeing "a Property of A Body…subsist without a Body" brings to mind Locke's discussion of senses in his *Essay Concerning Human Understanding* in which he declares "our Senses, conversant about particular sensible objects, do convey into the

mind several distinct perceptions of [them]" (McDermot 71; Locke 51). However, McDermot borrows Locke's discourse while contradicting his ideas: where McDermot claims to observe a body-less property, Locke asserts that properties must stem from bodies. One of McDermot's characters justifies this obvious impossibility in arguing that "it is as possible for a Property to subsist without a Body, as for nothing to have any Property. Yet some have affirm'd that nothing hath Properties, when they say that a Shadow is a *Nigrum Nihil*, or a Black Nothing" (McDermot 71). Significantly, this proposed solution relies on language in order to prove the impossible, further underscoring how language that contains the ability to deceive.

Similarly, when ascending to the moon in a whirlwind, the narrator claims, "putting both my Hands against [a Cloud full of Hail], by all Strength, I caus'd it to re-act upon me as much as I acted upon it," echoing the famous phrasing of Newton's third law of motion as stated in his *Principia*, "To every action there is always opposed an equal reaction" (McDermot 10; Newton 83). As it is impossible to rebound off of a cloud, a gaseous object, McDermot uses Newton's own language to add weight to a purely sophistic argument. Each of these examples highlights how even the most recognizably empiricist rhetoric is falsely associated with truth, as it can be used to promote lies and factual information equally well.

The satirical strain of LTNs reached its apex with self-criticism like McDermot's, but the genre could not sustain these unstable critiques. It eventually retreated toward the stability of naïve empiricism, setting the grounds for modern science fiction and the novel.

Chapter Four: From Indeterminacy to Science Fiction

Having amplified their satire at the price of their stability, LTNs' trenchant critiques of scientific discourse eventually waned. The instability of self-satirizing narratives made them impossible to sustain, and their target – scientific discourse's association with true content – was becoming a cultural standard that was difficult to critique without making the audience uncomfortable. My final chapter chronicles this generic transition to prepare for concluding remarks on the different trajectories of the novel and the LTN. I track the diminution of LTNs' critique of empirical discourse as it appears in increasingly subtle forms until eventually subsiding altogether when the genre is absorbed into modern science fiction.

My discussion first examines how Samuel Brunt's *A Voyage to Cacklogallinia* (1727) offers a weakened critique of scientific discourse by enveloping it with silly fictive elements. I then analyze how Edgar Allan Poe's *Hans Pfaall—A Tale* (1835) uses a similar method to reveal the discourse's ability to make hoaxes appear authentic; however, the text satirizes not its hoax's discourse but the characters naïve enough to believe it. I posit Richard Adam Locke's Moon Hoax of 1835 – the first LTN to be widely believed – as a tipping point in the genre; in this text, scientific discourse's associations combine with a newspaper context so that instead of fiction critiquing scientific discourse, that discourse legitimates fiction. I then examine the differences between the 1835 and 1840 editions of *Hans Pfaall* to reveal the effect Locke's hoax had on the genre. I conclude by examining Jules Verne's *From the Earth to the Moon Direct in Ninety-Seven Hours and Twenty Minutes, and a Trip Round It* (1874). I consider how LTNs' satirical critiques are silenced as the trope of lunar travel is quarantined within science fiction, a genre which relies on stable categories of fact and fiction instead of critiquing them. Tracing out the conclusion of the LTN reveals the cultural weight that scientific discourse comes to carry.

A Voyage to Cacklogallinia: Science from the Mouths of Chickens

For a wonderful example of the weakening critique of scientific discourse in LTNs, we can turn to Samuel Brunt's *A Voyage to Cacklogallinia* (1727), a satire whose "suggestion of the growing scientific temper of modern times makes it much more than mere fantasy" (Nicholson "Introduction," x-xi). While it satirizes politics, *Cacklogallinia* never overtly undercuts its scientific discourse; instead, it uses a ridiculous character as a fictional mouthpiece for scientific discourse. By examining how fiction envelops fact in this text, we can identify how its critique of scientific discourse weakens in an attempt to preserve textual stability, evidence that scientific discourse was becoming more culturally engrained.

Brunt's story opens with the narrator's shipwreck and discovery of a species of seven-foot-tall chicken people called the Cacklogallinians. These ridiculous beings act as the vehicle of the text's satire by demonstrating the faults of contemporary English society. For instance, Brunt's narrator reports that Cacklogallinian lawyers "…always, in Order to promote the Business of their own Profession, contrive [laws] in ambiguous Terms; so that…a double Meaning runs thro' every Sentence" (Brunt 89). In contrast to this, he idealizes English lawyers, saying they "come directly to the Merits of the Cause, and never endeavour by their Rhetorick to put a fair Face on a bad one" (Brunt 50). The satiric relationship between the Cacklogallinians and Brunt's claims is emphasized throughout the text, as when the Cacklogallinian leader remarks, "…it is certain [England] must have copy'd [its] Policy from us" (Brunt 44).

While *Cacklogallinia* contains overt satire, it takes scientific discourse seriously. The lunar travel element of the story is introduced when one enterprising Cacklogallinian projector suggests traveling to the moon to mine for gold. Rather than assenting to this suggestion and

arguing for its plausibility, as in previous narratives, the narrator remains the single skeptical figure objecting to the plan, arguing that "the extream Coldness of the Air," "its great Subtlety," and "the Distance [from Earth to the moon]" will prevent the plan's success (Brunt 115). The narrator thus encompasses the LTNs' satirical impulses, and is eventually convinced, suggesting that the text does not criticize scientific discourse.

On the surface of the text, this appears to be true: the projector responds to the narrator's objections with scientifically plausible reasoning in an appropriate (if overwrought) empirical discourse. At one point, he paraphrases Galileo, declaring the moon to be "an opaque solid Body, as is our Earth," that has "a body whose Surface is rugged and uneven" (Brunt 112, 113). Both the content and the wording of these phrases evoke *Sidereus Nuncius*. Similarly, the projector computes the weight of "condens'd Air which encompasses the Earth on every Part," stating that it "weighs about 108 *Liparia*'s on a Square Inch"; the narrator interrupts in a parenthetical to explain that "*Liparia* is near a Sixth of our Pound" (Brunt 116). While the math is here converted from fictive units, this mixture of fiction with fact does not undermine or satirize. Rather, Nicolson emphasizes the passage for its accuracy, noting that "Brunt was clearly aware of the work of many scientists, notably Boyle, upon the nature and rarefaction of the air" ("Introduction" xiv). *Cacklogallinia* thus portrays scientific discourse as reliable.

However, the story instantiates its critique by having a seven-foot-tall chicken articulate this serious discourse. This contextualizes scientific discourse within a silly fictional element to undercut its seriousness and contaminate it with fiction. This criticism functions by separating fact and fiction into text and context, demonstrating an effect of the Royal Society's binary perspective. Similarly, the subtlety of the critique reveals how the discourse's associations with truth have solidified within culture and become more difficult for LTNs to attack. The text does

not sharply critique scientific discourse like previous LTNs, but only pokes fun at the figures of scientists by making a talking chicken empiricism's mouthpiece. Later texts reprise this tactic of employing text and context to separate fact and fiction, resulting in even weaker satires.

Hans Pfaall--A Tale (1835): The Narrator Hoaxed

As in *Cacklogallinia*, Edgar Allan Poe's *Hans Pfaall--A Tale* (1835) achieves its satirical effects by embedding scientific discourse in a fictional context. However, where *Cacklogallinia* employs a ridiculous speaker as the fictional vehicle for scientific discourse, *Hans Pfaall* divides its text and context more completely by assigning discourses with factual and fictional connotations to two distinct narrators. As Kepler does in *Somnium*, Poe structures *Hans Pfaall* as a frame narrative, employing multiple narrators: Hans Pfaall, the main character and author of a scientific-sounding letter that constitutes most of the novella's prose, and the implied, exterior narrator who tells the story in which the letter is received in a sillier fictional style. As in Lucian, tension emerges from the conflicting readings espoused by these two narrators.

Because Pfaall aims to convince, scientific discourse is relatively unassailable when he is narrating; thus, Poe's story cannot overtly critique scientific discourse as in previous texts like McDermot's self-reflexive satire. Instead, *Hans Pfaall* demonstrates the successful use of scientific discourse in the perpetration of a hoax, and critiques the naïveté of characters like the implied narrator who believe it. This acceptance of scientific discourse's association with true content represents a major change from previous LTNs, one that will eventually lead to the loss of the genre's epistemological complexity.

Hans Pfaall's first pages establish the implied narrator as naïve and impressionable. That he believes Pfaall's fantastic claims is made clear before he relates them, as he opens the story by proclaiming that in the Dutch borough of Rotterdam, "phenomena have…occurred of a nature so completely unexpected, so entirely novel, so utterly at variance with pre-conceived opinions, as to leave no doubt on my mind that long ere this all Europe is in an uproar, all Physics in a ferment, all Dynamics and Astronomy together by the ears" (Poe 42). This hysteric style clashes with relatively calm content, as exemplified by the townspeople's reaction to seeing a mysterious object approaching in the sky:

> …so, as nothing more reasonable could be done, every one to a man replaced his pipe carefully in the corner of his mouth, and, cocking up his right eye towards the phenomenon, puffed, paused, waddled about, and grunted significantly—then waddled back, grunted, paused, and finally—puffed again. (Poe 43)

The humorous contrast here elicited between the narrator's frenetic style and the relatively reserved actions of the townspeople highlights the difference between form and content – a difference required to detect Pfaall's hoax and one to which the narrator is blind. Beginning his story with this goofy mismatched section, Poe envelops Pfaall's scientific-sounding letter with overt fiction. In doing so, he encourages readers to regard Pfaall's letter as fiction when it is reproduced verbatim in the text, even though the narrator dubs it an "extraordinary, and indeed very serious, communication" (Poe 47).

The narrator is right: this is a "serious" communication - stylistically. As Hans Pfaall begins narrating the letter, a significant shift in discourse accompanies the shift in narrators. Where the story's introduction is styled as comedic fiction, the letter pulls out all stops to be considered empirical and plausible. As in *Cacklogallinia*, *Hans Pfaall* does not openly critique

its scientific discourse. Few elements of Pfaall's letter itself reveal its fictional status, leaving his

hoax to be exposed by evidence raised against it in the frame narrative after the letter concludes.

Pfaall's letter employs scientific discourse to elicit belief. For instance, after he reveals

his intention to travel to the moon, he explains how he will surmount the three main difficulties

preventing lunar travel: "the moon's…distance from the earth," the loss of "atmospheric air,"

and the bleeding and disorientation experienced by balloonists who ascend to high altitudes (Poe

60, 62, 67). While discussing these points, Pfaall makes excessive use of empirical discourse, as

in the following excerpt in which he discusses the moon's distance from earth:

> Now, the mean or average interval between the centres of the two planets is
> 59.9643 of the earth's equatorial radii, or only about 237,000 miles. I say the
> mean or average interval. But it must be borne in mind that the form of the moon's
> orbit being an ellipse of eccentricity amounting to no less than 0.05484 of the
> major semi-axis of the ellipse itself, and the earth's centre being situated in its
> focus, if I could, in any manner, contrive to meet the moon, as it were, in its
> perigee, the above mentioned distance would be materially diminished. (Poe 61)

This passage represents a significant discursive shift from the story's initial pipe-smoking humor

and hysterical narrator. Its use of the passive voice, numerical data, and jargon without any

explanatory definitions amounts to a demonstration of empirical intelligence meant to solicit

belief; Pfaall's scientific discourse mimics that found in reliable works of astronomy, even

though it overplays its hand. What's more, Pfaall's calculations are quite accurate. By using

what Poe refers to in a footnote as "theory…urged in a mere spirit of banter," Hans Pfaall

establishes himself as a reliable narrator before claiming to have traveled to the moon (67).

Pfaall elicits further belief by recording his observations in an empirical style like that

prescribed by the Royal Society to travelers over a century earlier. This style is evident when

Pfaall describes viewing the earth as he ascends in his modified balloon:

> Looking at my watch, I found it six o'clock. I was still rapidly ascending, and my barometer gave a present altitude of three and three-quarter miles. Immediately beneath me in the ocean, lay a small black object, slightly oblong in shape, seemingly about the size, and in every way bearing a great resemblance to one of those childish toys called a domino. Bringing my telescope to bear upon it, I plainly discerned it to be a British ninety four-gun ship, close-hauled, and pitching heavily in the sea with her head to the W.S.W. (Poe 60)

Citing three instruments, two numeric readings and a directional heading for the ship, this passage demonstrates how Pfaall includes in each of his observations the empirical benchmarks that the Royal Society made prerequisites for believable accounts. Once in space, Pfaall adjusts the form of his observations to elicit further belief by "determin[ing] to keep a journal of [his] passage" (Poe 82); after this point in the narrative until he claims to land on the moon, Pfaall divides his prose into dated entries, trying to appear plausible by mimicking the form of empirical journals. As in Lucian, Pfaall also withholds observations to make those that he does provide appear authentic. Realizing that he will pass over the North Pole, Pfaall "lament[s] that [his] great elevation would…prevent [his] taking as accurate a survey as [he] could wish" (Poe 86). By occasionally withholding observations and lamenting his inability to supply them in a way that meets empirical standards, Pfaall makes it seem as if the observations he does detail are credible. In these ways, Pfaall's letter avails itself of the empirical emphasis placed upon direct visual observation and the reliability associated with information of this kind.

Pfaall also characterizes himself as an objective, unemotional experimenter to appear reliable. He brings two pigeons and a cat with him to observe how changing atmospheric pressure affects the animals, and when the cat unexpectedly has kittens en route, Pfaall's remarks demonstrate empiricism in action. He is "pleased at the occurrence" only because "it would afford [him] a chance of bringing to a kind of test the truth of a surmise" (Poe 72). After explaining that he believes *changes* in atmospheric pressure to cause discomfort, he declares of

the kittens born in space, "Should the kittens be found to suffer uneasiness *in an equal degree with their mother*, I must consider my theory in fault, but a failure to do so I should look upon as a strong confirmation of my idea" (Poe 72). Pfaall regards the kittens solely as an opportunity for further experimentation; they remain mere test subjects when he "[f]or the sake of experiment [puts] the cat and kittens in a small basket, and suspend[s] it outside the car" (Poe 78). This eventually leads to an "awkward accident" in which the kittens and their mother plummet to Earth (Poe 81). Rather than show emotional remorse, Pfaall only regrets that their loss "deprived [him] of the insight into this matter which a continued experiment might have afforded" (Poe 81). Pfaall's unemotional response makes him seem like a reliable source of information, unlike the implied narrator, whose reports are full of emotion and little else.

Poe also contrasts literary and scientific discourses to make Pfaall's story appear plausible. When Pfaall has almost reached the lunar surface, he daydreams about what he will find there. Pfaall's construction of the moon is fantastic, and the romantic style he briefly employs in this passage evokes a fictional literary tradition:

> Fancy revelled in the wild and dreamy regions of the moon. Imagination, feeling herself for once unshackled, roamed at will among the ever-changing wonders of a shadowy and unstable land. Now there were hoary and time-honored forests, and craggy precipices, and waterfalls tumbling with a loud noise into abysses without a bottom…. (Poe 80)

This passage heralds a half of a page of dreamy musings that contrast sharply with Pfaall's previous empirical style; there is emotion in these lines that is entirely absent when he recounts dropping his basket of cats. At the end of the passage, Pfaall swears off these "fancies" and the accompanying "horrors" with which he fills his unknown destination, refusing to "dwell upon these …speculations, rightly judging the real and palpable dangers of the voyage sufficient for

my undivided attention" (Poe 80-81). Notably, the romantic-sounding "fancies" become scientific-sounding "speculations" as Pfaall returns to scientific discourse, underscoring the contrast between the romantic, imaginative style associated with the fictive musings of the excerpt and the "real and palpable" content of the rest of his empirical account. Thus, the romantic interlude works by contrast to align Pfaall's scientific discourse with reality.

As I've shown, Pfaall strategically manipulates the form of his letter in numerous ways to associate himself with empirical science; this has the effect of bolstering his credibility as a narrator. However, the letter's conclusion suggests that Pfaall is manipulating his discourse consciously. He reveals ulterior motives when he tries to use his untold discoveries as capital in bartering for a pardon. "But my adventures yet remain to be related," he states temptingly near the end of his letter, before dwelling at length on the variety of observations he has made regarding the moon and its inhabitants (Poe 99). After this, he concludes:

> But, to be brief, I must have my reward. …the price of any farther communication on my part—in consideration of the light which I have it in my power to throw upon many very important branches of physical and metaphysical science— I must solicit…a pardon for the crime of which I have been guilty in the death of the creditors upon my departure from Rotterdam. (Poe 100-101)

This passage reveals Pfaall's credibility to be crucial to his letter's overall goal. Only if the letter convinces readers of its authenticity will they value the information Pfaall purports to reserve.

As Pfaall's letter concludes, the naive implied narrator takes over, receiving its claims with unadulterated belief. The President and Vice-President of the Rotterdam College of Astronomy also both believe Pfaall's account, concluding that "[t]here was no doubt about the matter— the pardon should be obtained" (Poe 101). However, as the "lunar being" who delivered the letter left before it was read, they cannot return a response to Pfaall who

supposedly resides on the moon. The astronomers thus conclude that "the pardon would be of little use, as no one but a man of the moon would undertake a voyage to so vast a distance" (Poe 102). Thus, Pfaall's hoax defeats itself. It does not achieve its ultimate goal because of the belief it engenders.

The believable discourse LTNs used was beginning to separate from the fictional markings that kept it quarantined and impossible to believe. This development eventually reached its peak in the Moon Hoax of 1835, the first LTN widely believed to be true.

Locke's Moon Hoax: "Factual" Discourse Legitimates Fiction

The LTNs I have discussed each incorporate some fantastic element to critique scientific discourse's association with truth, ensuring that though they contain gestures eliciting belief, they were never widely believed. However, that tradition changed on August 25th, 1835, when the penny daily newspaper the *New York Sun* ran the story "Great Astronomical Discoveries Lately Made by Sir John Herschel, L.L., D.F.R.S., &c., at the Cape of Good Hope" (Walsh 98). Though it was presented as an excerpt from the recently bankrupted *Edinburgh Journal of Science*, this was a fictional piece written by the paper's science writer Richard Adams Locke. (Walsh 98). Taking Sir John Herschel the younger, a well-known real English astronomer, as its main character, the story attributes false discoveries to him, claiming that he has observed lunar creatures. The text employs scientific discourse and familiar rhetorical gestures in order to make its claims appear plausible. However, where previous LTNs combined fiction and fact to reveal how fiction could pass as fact, Locke's story uses fact to bolster fiction and to *actually* pass it off as fact; the account was widely believed to be true for a time after its publication, only earning

the nickname "the Moon Hoax." This result suggests that the association between scientific

discourse and true content that LTNs traditionally critiqued had become so culturally engrained

that it was now the dominant presence in texts composed of factual discourse and fictional

content. Examining how fact legitimates fiction in Locke's Moon Hoax reveals the strength of

scientific discourse's factual associations and explains why the work had such a profound effect

on the LTN genre.

> Fact legitimates fiction on a small scale when Locke first lists Herschel's discoveries:

>> …[Herschel] has already made the most extraordinary discoveries in every planet of our solar system; has discovered planets in other solar systems; has obtained a distinct view of objects in the moon, fully equal to that which the unaided eye commands of terrestrial objects at the distance of a hundred yards; *has affirmatively settled the question whether this satellite be inhabited, and by what order of beings*; has firmly established a new theory of cometary phenomena; and has solved or corrected nearly every leading problem of mathematical astronomy. (8-9, emphasis mine)

In this inventory, Locke's placement of the fictional element in the center of the list envelops it

with more credible discoveries; the claims that the reader encounters first and last are plausible,

so the paragraph takes on this connotation as a whole. Much in the manner that *Cacklogallinia*

and *Hans Pfaall* enveloped scientific discourse with fiction, Locke inverts this orientation to

envelop a fictional discovery with more plausible-sounding ones in order to pass it off as true.

Locke's narrative organization reprises this enveloping tactic on a larger scale. He opens

with an eleven-page description of Herschel's telescope detailing its construction and operation,

noting, "We first avail ourselves of the documents which contain a description and history of the

instrument by which these stupendous discoveries have been made. A knowledge of the one is

essential to the credibility of the other" (Locke 9). Here, Locke directly anchors the plausibility

of the lunar discoveries to the reliability of the instrument used to make them. That the account

opens with this section is significant: where Poe opens *Hans Pfaall* with a fiction that inspires

skepticism, Locke begins with realistic description in order to make use of a similar effect, but in

reverse. Just as Godwin prefaces Domingo Gonsales's lunar journey with a description of the

real island of St. Helena, Locke's excessive description of Herschel's telescope establishes his

account as reliable by describing plausible things before it introduces fantastic content.

Locke similarly bolsters his fiction with fact by contextualizing Herschel's real work

against other scientists' before describing the lunar discoveries the story claims he has made. In

detailing how his actual discoveries either corroborate or disprove those of other astronomers, he

knits Herschel into a real network of reliable scientists, as in the following excerpt:

> The formation which Professor Frauenhofer uncharitably conjectured to be a lunar
> fortification, [Herschel] ascertained to be a tabular buttress of a remarkably
> pyramidical mountain; lines which had been whimsically pronounced roads and
> canals, he found to be keen ridges of singularly regular rows of hills; and that
> which Schroeter imagined to be a great city in the neighborhood of *Marius*, he
> determined to be a valley of disjointed rocks scattered in fragments, which
> averaged at least a thousand yards in diameter. (Locke 12)

Here, Locke not only integrates Herschel's supposed findings with other scientists' work, but

also characterizes Herschel as the more empirical figure, relying solely on observation instead of

conjecture, as the other scientists do. (Gonsales used this same tactic on his way to the moon.)

The choice of lunar subject matter also constitutes a rhetorically brilliant maneuver: that

Herschel disproves theories of lunar life before he becomes the figure through which their

"discovery" is articulated suggests that he is not out to fool anyone with misinformation.

Locke envelops his fiction with facts that aren't there by alluding to redactions of

nonexistent scientific material, reprising the tradition of withholding information begun by

Lucian. At points, Locke's narrator claims to omit material "for the purpose of no longer

withholding from our readers the more generally and highly interesting discoveries which were made in the lunar world" (21). At other points in the narrative, however, the editor of the *Sun* justifies redactions by employing the expectations of the newspaper medium. For instance, when the account claims that Herschel has calculated the density of Saturn's rings by "effect[ing] the following beautiful demonstration," the editor conveniently interrupts, "[Which we omit, as too mathematical for popular comprehension.--*Ed. Sun.*]" (Locke 48). The narrative of the Moon Hoax concludes by alluding to a significant redaction: "[This concludes the Supplement, with the exception of forty pages of illustrative and mathematical notes, which would greatly enhance the size and price of this work, without commensurably adding to its general interest.--*Ed Sun.*]" (50). This reference closes the account on a plausible note, using the newspaper medium to justify the redaction as realistic and expected.

While many of the Moon Hoax's tactics can be seen as continuations or inversions of those identified in previous fictions, some of its elements were directly inspired by new trends in the era's scientific climate. For instance, unlike previous LTNs, the Hoax portrays the cataloguing of lunar species in scientific taxonomies, reporting that "Dr. Herschel has classified not less than thirty-eight species of forest trees, and nearly twice this number of plants…Of animals, he classified nine species of mammalia, and five of ovipara" (Locke 31). It similarly reports that the observers "scientifically denominated [the lunar bat-people] the Vespertilio-homo, or man-bat" (Locke 38). This bent toward relating not only discovery but taxonomic classification demonstrates the effect of work by scientists like Carl Linné (Linnaeus), whose 1735 *Systema Naturae* aimed to organize all animals, plants, and minerals into categories as a way to generate knowledge. Soon after its publication, travel narratives adopted this paradigm; as Mary Louise Pratt notes, "descriptions of flora and fauna were not in themselves new to travel

writing," but those appearing in print before Linnaeus "were typically structured as appendices or formal digressions from the narrative," while afterward, "the observing and cataloguing of nature itself become narratable. It could constitute a sequence of events, or even produce a plot. It could form the main storyline of an entire account" (27-28). The Moon Hoax is one such account, as its plot is solely based on *looking* at the moon.

However, Locke's rhetoric bridges the gap between visual observation and physical exploration. In lines such as "It was not, however, without regret that we left the splendid valley" and "masses of fallen crystals were found on every beach we explored," Locke uses verbs that make it sound as if the lunar landscape is being physically explored instead of merely observed (28, 33). One may attribute this development to the popularization of works like Linnaeus's, but also relate it to Galileo's description of the lunar surface in *Sidereus Nuncisus*, where he uses tactile adjectives to make up for absent sensory evidence.

While the Moon Hoax's publication in a newspaper surely contributed to the widespread belief it inspired, one can tell that scientific discourse was also a significant factor by examining contemporary reviews and a parody of the story. On September 1st, the *Sun* published an addendum that addressed skeptics and included quotations taken from competing papers regarding the Hoax's authenticity. One paper claimed that the hoax "appears to carry intrinsic evidence of being an authentic document," while another imagined that it could "trace in it marks of transatlantic origin"; the *New York Times* similarly noted its discoveries to be "all probable and plausible, and have an air of intense verisimilitude" (Locke 61, 61, 62). These comments each attribute belief to the scientific discourse that the story employed to great effect – so great an effect that, as Copeland reports, a group of Yale University scholars visited the *Sun's* office to obtain a copy of the faux journal article the Hoax references as its source material, since they

could not find it in Yale's library (140). Despite not obtaining the article, they, too, "concluded in a college debate that Herschel's observations were, indeed, plausible," further attesting to the strength of scientific discourse's connotations (Copeland 141).

One can also see that scientific discourse was a key feature associated with the hoax by examining how it was parodied in the *Herald*, a competing penny daily newspaper. While one can interpret this parody as a renewed, outright attack on the reliability of scientific discourse, one must realize that the opportunity to attack the discourse's reliability was generated specifically by the hoax. In her doctoral thesis on the rhetoric of scientific media hoaxes, Lynda Walsh notes that "the parody of Locke's story is a good barometer of what people paid attention to in the story" before delineating several features of the original story that it humorously overemphasized (115-116). These include "credentials/authority of foreign scientists," ("In the title: 'BY HERSCHELL, THE GRANDSON, L.L.D., F.R.S., R.F.L, P.Q.R., &C. &C. &C.'") "astronomical jargon," ("'hydro, philo, solar, high pressure steam telescope'") and "the "weight of scientific detail"," as in the following excerpt:

> Herschell then tasted the water of said ocean, by means of a very long hydrostatic tube, attached to the telescope. It has a very curious taste. He found it was composed of the following mixture, viz: 2 parts of lemonade, 1 part printer's ink, 1-2 parts mint julep, 1-2 parts flower of brimstone. There was also a slight tincture of blue vitriol. (qtd. in Walsh 116)

Based on these similarities, Walsh concludes that "authority, precision, and 'verisimilar' jargon" were crucial elements of contemporary science news articles (116). As Walsh summarizes Hugh Kenner as arguing, "the principal social benefit of a counterfeit is the hyper-awareness it confers upon its viewers, once they have recognized its artifice, of the "realness" of the object or skill the counterfeit is imitating" (Kenner qtd. in Walsh 6-7). She sees the hoax as unique in "provid[ing]

an opportunity to examine a rhetorical strategy of intervention by literary intellectuals in the process of scientific truth becoming public truth in America," specifically, their attempt to "[criticize] the gaps in power between the literary and scientific communities" (Walsh 3). However, this would be the last critical LTN, as the genre had now become something that in certain circumstances the public might actually believe. Thus, it was dangerous, and this spurred its retreat toward naïve empiricism and its conclusion.

Hans Pfaall--A Tale (1840): The Effects of the Moon Hoax on the Genre

One may discern the effects of Locke's Moon Hoax on the LTN genre by comparing two different editions of Edgar Allan Poe's *Hans Pfaall--A Tale*. Originally published in 1835 three weeks before Locke's Moon Hoax, Poe's story was re-released in an edited form in 1840, after the hoax had occurred. In the 1835 version previously discussed, Poe uses certain textual features to generate epistemic complexity, but in the 1840 version he removes some of these elements in order to reduce this complexity and its accompanying instability. This marks a movement in LTNs away from indeterminate texts that satirize scientific discourse's false association with true content toward the genre's quarantine within modern science fiction, a genre that relies on those associations and categories going unchallenged. This shift becomes increasingly relevant in light of a coeval trend in the scientific community toward organizational schemes that foreground clear-cut categorization, exemplified by Linnaeus's *Systema Naturae.* One can view these schemes as reprising the Royal Society's binary perspective, as they left no room for the indeterminacy lunar travel narratives relied upon. The rest of this chapter will present this movement away from categorically defiant indeterminacy back towards the categorical clarity of naïve empiricism and discuss how it set the stage for modern discursive trends.

The revised version of *Hans Pfaall* removes slight critiques of scientific discourse, letting the discourse's association with truth go unchallenged. For instance, in one passage present in the 1835 edition but missing in the 1840 edition, Hans Pfaall reminisces about his education in Natural Philosophy, and at one point wonders "whether…profundity itself might not, in matters of a purely speculative nature, be detected as a legitimate source of falsity and error" (Poe 332). Considering how overblown Pfaall's scientific discourse becomes in the interest of fooling his audience, one may detect in these words a subtly ironic critique. The 1840 edition removes this critical passage, streamlining the narrative so that it only satirizes naïve characters and pins no blame whatsoever on scientific discourse's false associations with true content.

Poe's most obvious changes to the story appear in its final lines. He simplifies the text's epistemic claims by removing the narrator's dismissal of evidence raised against Pfaall's account. First, Poe omits the narrator's remarks that follow each piece of evidence as it is presented: "Don't understand at all," "He was mistaken—undoubtedly—mistaken," "Well—what of it" and "Don't believe it—don't believe a word of it" (341). He then removes the paragraph that ends the original 1835 version on a note of emphatic belief, reproduced below:

> The d----l, you say! Now that's too bad. Why, hang the [naysayers], they should be prosecuted for a libel. I tell you gentlemen, you know nothing of the business. You are ignorant of Astronomy—and of things in general. The voyage was made—it was indeed—and made, too, by Hans Pfaal. I wonder, for my part, you do not perceive at once that the letter—the document—is intrinsically—is astronomically true—and that it carries upon its very face the evidence of its own authenticity. (Poe 341)

By omitting the ending in which the narrator contests evidence against Pfaall's account, Poe simplifies his tale. The reader need not actively oppose the narrator's view at the end of the story. Instead, the evidence presented stands unopposed, leaving the hoax more overtly

demonstrated and its place as fiction clearer to the audience. This illuminates a preference for clear-cut categorization in issues of fact and fiction instead of complex indeterminacy.

Poe also appends to his 1840 edition of *Hans Pfaall* a "Note" that responds directly to Locke's Moon Hoax. He insists that while both stories "have the character of *hoaxes*," "both hoaxes are on the same subject, the moon" and "both attempt to give plausibility by scientific detail," crucial differences separate the two texts. Poe asserts that *Hans Pfaall* is written "in a tone of banter," while Locke's hoax is "downright earnest," and also complains that "[h]owever rich the imagination displayed in [Locke's] ingenious fiction, it wanted much of the force which might have been given it by a more scrupulous attention to facts and to general analogy" (103). Clearly, Poe imagines the LTN as entirely reliant upon, not critical of, verisimilar scientific discourse, not challenging the assumed connection it appears to have with true content.

Poe emphasizes this view by reviewing extant LTNs against a standard of verisimilitude. Godwin's he says is "a singular and somewhat ingenious little book," and that "notwithstanding the blunders italicized [in a preceding quotation] the book is not without some claim to attention, as affording a naïve specimen of the current astronomical notions of the time" (Poe 106, 108). In contrast to this, Poe calls de Bergerac's satire "utterly meaningless," and alludes to an allegorical fiction whose "*means* of the voyage are more deplorably ill" (Poe 108). Poe concludes his Note by clarifying this requirement of verisimilitude:

> In [previous LTNs] the aim is always satirical…In none, is there any effort at
> *plausibility* in the details of the voyage itself. The writers seem, in each instance,
> to be utterly uninformed in respect to astronomy. In "Hans Pfaall" the design is
> original, inasmuch as regards an attempt at *verisimilitude*, in the application of
> scientific principles (so far as the whimsical nature of the subject would permit,)
> to the actual passage between the earth and the moon. (Poe 108)

Poe's analysis demonstrates a preference for the verisimilar detail characteristic of naïve empiricism without the critique figured by satires' use of fictional elements, which often results in indeterminate texts. Poe prefers his fiction to make use of scientific discourse's connotations without critique, a stance which becomes characteristic of the genre of science fiction. While one may argue that Poe's is only one biased opinion, we may take it as indicative of the times not only due to his familiarity with the LTN genre, but also because his preference for uncritical, naïve empiricist use of scientific discourse is directly visible in the works of Jules Verne.

Jules Verne: "Science" and "Fiction"

In this last section, I will briefly consider Jules Verne's *From the Earth to the Moon Direct in Ninety-Seven Hours and Twenty Minutes, and a Trip Round It.* Originally published as two French novels, *De la Terre à la Lune* [From the Earth to the Moon] (1865) *and Autour de la Lune* [Around the Moon] (1870), this work attests to the conclusion of the epistemically complex, satirical, and indeterminate genre of the LTN. As I have shown, 18th-century LTNs use satirical critiques to undermine the reliability of scientific discourse and question its culturally stable association with fact. I posit Verne's texts as the conclusion of this genre's development because they do none of these things. Instead, they treat the trope of lunar travel in a way that returns to LTNs' initial trend of naïve empiricism. These texts represent the endgame of untroubled categories of fact and fiction that characterize present-day cultural thought.

While this text is satirical, it returns to using scientific discourse as an instrument rather than a target of satire, not acknowledging the effect of harshly satirical LTNs but returning to tactics that preceded this development. For instance, Verne caricatures the members of the

Baltimore Gun Club as extremely empirical, to the point of illogical behavior: the Club enjoys the Civil War, "[feeling] justly proud when the despatches [sic] of a battle returned the number of victims at tenfold the quantity of the projectiles expended," but it sorrows at the "sad and melancholy day!" on which peace is declared (3). Similarly, Verne's narrator reports that "[t]he estimation in which these gentlemen were held, according to one of the most scientific exponents of the Gun Club, was 'proportional to the masses of their guns, and in direct ratio of the square of the distances attained by their projectiles'" (4). While the quotation openly declares scientific discourse to be at work, the discourse's plausibility and association with fact are not undermined. Instead, the discourse is used as a satirical barb aimed at the Gun Club.

While the Gun Club is satirized, its enterprise to fire a manned projectile to the moon is not. When the Club writes to the Cambridge Observatory asking its astronomers for calculations pertinent to the success of this endeavor, the Observatory provides the following answer to the question "Is it possible to transmit a projectile up to the moon?":

> Yes; provided it possess an initial velocity of 1200 yards per second; calculations prove that to be sufficient. In proportion as we recede from the earth the action of gravitation diminishes in the inverse ratio of the square of the distance; that is to say, *at three times a given distance the action is nine times less*. Consequently the weight of a shot will decrease, and will become reduced to *zero* at the instant that the attraction of the moon exactly counterpoises that of the earth; that is to say, at 47/52 of its passage… (Verne 20)

The observatory's response reprises familiar elements of scientific discourse, including jargon and quantitative data. No satire undercuts the discourse's presumed association with truth. And, unlike in *Hans Pfaall* and Locke's Moon Hoax, the discourse is never revealed to be a hoax; instead, its association with the truth stands unopposed within the text.

Instead of undercutting the seriousness of scientific discourse, Verne emphasizes it when he places the characters' lives at stake over the accuracy of the aforementioned calculations in an episode referred to as "the incident of the algebra" (186). When one character demonstrates algebra to another en route to the moon, an example calculation yields different results than the Observatory's math. This realization elicits a dramatic response: the characters cry "The deuce!" and "The devil!" and make "gesture[s] of despair" while lamenting, "we shall fall back upon the earth!" (Verne 183-184). The reliability conveyed by the Observatory's scientific discourse here becomes an issue of life and death. Verne segues into a tense, serious scene in which one character takes measurements to confirm the calculation:

> Barbicane…after a rapid glance at the captain, took a pair of compasses wherewith to measure the angular distance of the terrestrial globe…Then rising and wiping his forehead, on which large drops of perspiration were standing, he put some figures on paper….[Nicholl] watched him anxiously. (185-186)

Luckily, the characters discover that Cambridge Observatory erred in its initial calculations. If these calculations or the discourse in which they were presented had been the subject of satirical critique, this scene would not be able to sustain its overt dramatic tension.

Verne's text represents more than a regression to gestures used by LTNs written before they grew self-reflexive and satirized scientific discourse. It also attests to the waning of the genre of such critical LTNs by demonstrating in numerous ways that the perception of fact and fiction as mutually exclusive categories has solidified in popular culture. For example, this categorization is reflected in the differing modes of Verne's chapters. The sole function of certain chapters in *From the Earth to the Moon* is to provide background information on topics pertinent to the narrative. For instance, when the Gun Club decides it will launch a projectile to the moon, the chapter following, titled "The Romance of the Moon," deals solely with

discounting previous legends about the moon in the interest of distilling facts relevant to the story (Verne 23). A later chapter on the same theme is titled "Fancy and Reality," more overtly demonstrating the mutually exclusive manner in which the text perceives fact and fiction (Verne 232). This use of separate expository and narrative chapters is made possible by the distance a third-person narrator provides. Unlike in previous LTNs which were characterized by their use of a first-person participant narrator, Verne's narrator is distanced from the story he tells and can pause his narrative to deliver information. Yet the fiction of the narrative and the presumed facticity of the discursive histories coexist without devolving into confusion and satire. The fiction does not undercut the pretensions of the scientific discourse used in the discursive sections, as it is a culturally stable construct by now that has become relatively unassailable.

While fictional elements occur throughout the text, they are distanced from the tale at hand and always clearly marked as fictional. For instance, during the speech where he announces the Club's lunar project, the President of the Gun Club provides a history of "imaginary journeys" to the moon, specifically mentioning Godwin's, de Bergerac's, Locke's, and Poe's (Verne 12). However, he closes by asserting that "[Poe's] journey, like all the previous ones, was purely imaginary" (Verne 12-13). In this "purely," one can identify a preference for clear-cut categories of fact and fiction reminiscent of the Royal Society's. Where other LTNs treated elements from previous works as at least plausible, Verne distances himself from the fictionality of previous LTNs in an attempt to bolster the verisimilitude of his own story. Similarly, the characters later hypothesize that because of the moon's weaker gravity, the lunarians they might meet should be proportionally tiny - only about one foot high. At this a more theatrical character exclaims, "Lilliputians!" and declares, "I shall play the part of Gulliver. We are going to realize the fable of the giants" (Verne 219). With this reference to *Gulliver's Travels*, the text also

engages with fiction, but again clearly marks its reference as a fable with its rhetoric ("play the part of") and clear-cut genre categorization ("fable").[5] Able to reference fictions without contaminating its association with fact, Verne's text shows a stable fact-fiction binary at work.

However, aspects of Verne's speculation are incorrect, such as his portrayal of a single moment of weightlessness that occurs as characters "pass the neutral line" between earthly and lunar gravity (217). Verne's narrator's report of this moment divides fact from fiction as clearly as the line is thought to divide earthly from lunar gravity: "Fancy has depicted men without reflection, others without shadow. But here *reality*, by the neutralization of attractive forces, produced men in whom nothing had any weight, and who weighed nothing themselves" (217).

This moment attests to the differences between Verne's text and any previous LTN. It demonstrates that the end result of the LTN is that its disruptive critiques are quarantined within the emergent genre of science fiction and the simple, untroubled categorization of fiction and fact that it relies upon, as distinct as "fancy" and "*reality*" in the above quotation. This genre adheres to the principles of naïve empiricism and by doing so, becomes "science fiction," a coexistence of two determined categories, instead of inhabiting the strange indeterminate space between them as previous LTNs do. However, one must realize that this binary interpretation of fact and fiction, like Verne's "neutral line," is not always an accurate perception, a conclusion to which indeterminate LTNs attest.

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[5] Readers will likely wonder what bearing *Gulliver's Travels* has on LTNs, and vice versa. While the scope of this project cannot accommodate a full analysis of this correspondence, it should suffice to recognize that both Swift's novel and many LTNs are satires that critique travel narratives by having a narrator claim to travel to overtly fictional worlds, contrasting verisimilitude and frank fictionality in order to amplify their critiques. Similarly, "among [*Gulliver's Travels'*s] targets is what we have come to call the "new science" of the Royal Society" (Patey 371).

Conclusion

In the preceding investigation of fact and fiction, I have examined both the rise and fall of the lunar travel narrative (LTN) as well as the ways in which it raises difficult epistemological questions about the relationship between writing and belief. Considering the complete trajectory of the genre invites yet more questions. How exactly are the LTN, science fiction, and the novel related? Did the LTN's categorical multiplicity end with the genre, or have different forms of writing inherited it? And does LTNs' cyclical use of discourse to reveal the failings and falsehoods intrinsic to discourse retain significance centuries after these texts were written?

Regarding the relationship between the three genres, one may note that science fiction, like the novel, is implicit where the LTN is explicit. As I have demonstrated, the LTN is a confrontational genre. It forces readers to confront paradoxes and contradictions by locating them upon the surface of the text with sharp opposition between form and content. As a result, it actively disrupts its readers' suspension of disbelief and forces them to struggle with the critiques that its paradoxes and contradictions raise. However, where the LTN shows its hand, science fiction and the novel do not. Neither science fiction nor the novel are confrontational genres; each keeps its contradictions implicit. Since each genre's hidden paradoxes do not take the form of differences between a text's form and content, readers can suspend disbelief without interruption. After all, according to Gallagher, the novel "is said both to have discovered and to have *obscured* fiction" (338, emphasis mine), and science fiction attempts to similarly obscure the fictionality of its invented elements through the use of scientific discourse and its associations with truth. So, in investigating the challenge the LTN represents to received categorization, my analysis could necessary only treat science fiction in a closing gesture, as the genre does not take up the LTN's defining categorical curiosity.

If science fiction is not the natural inheritor of LTNs' categorical curiosity, what forms of writing are? The postmodern novel, with its opposition to a single "true" version of objective reality, has perhaps inherited LTNs' impulse to defy received categorization, transforming a genre's implicit paradoxes into explicit ones in the process. One may also view LTNs in conjunction with the propensity for contemporary political discourse to obfuscate categories when convenient. And perhaps the Internet's digital culture and virtual environments are in the process of defining another moment in which discourse is complicating categories and influencing epistemology. More research is needed to see the implications of categorical complication in each of these areas, but it is likely that they each form part of a genealogy that includes the LTN.

Challenges to received categorization continue, perhaps because the discursive associations that formed them – and that the LTN explicitly challenged – are still at work today. For example, readers of this thesis are likely to believe it due in part to the way I have presented it; I have adhered to a certain academic discourse with its own jargon ("binary paradigm") and even coined a few terms of my own ("LTN"). While I did not consciously intend my discourse to carry my argument, in retrospect I realize that it too attests to the persuasion and endurance of discursive associations. We are living in the world that resulted from the discursive soup of the 18th century crystallizing into convenient categories, but the LTN stands as proof that these categories were not – and perhaps are not – as neat as we now perceive them.

While the features of LTNs are at times delightfully archaic, their critiques of the power that discourse carries are still relevant and powerful, perhaps uncomfortably so. Let us return to Rumsfeld's political discourse to see this power laid bare. When a reporter speaks of "reports

that there is no evidence of a direct link between Baghdad and some [discussed] terrorist organizations," Rumsfeld deflects the point with his now-famous quotation:

> Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns -- the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones. ("Defense.gov")

Instead of explicitly opposing the reporter and arguing that the reports he cites are incorrect, Rumsfeld takes the received categories of "known" and "unknown" – an explicit binary – and doubles them to create another dimension of complexity. In this schema, reports of no evidence are made suspect by "unknown unknowns," an idea which implicitly suggests that there is evidence available that we have not yet discovered. Here, we see a perfect example of contemporary political discourse's previously mentioned tendency to complicate received categories of fact and fiction. Such doublespeak functions by defining new epistemic categories and schemas where convenient and demonstrates that the influence that discourse has on perceptions of fact and fiction – that LTNs identified – is still at work today.

Further investigation into how literary discourse interacts with and influences those of other fields will help to shed light on the chaotic and complex evolution of discourse over time, especially as these discourses continue to interact in strange and wonderful ways. The word "boojum" exemplifies such an interaction. Originally coined in a literary work, Lewis Carroll's *The Hunting of the Snark,* "boojum" has since been adopted by particle physicists to describe a phenomenon in superfluids that makes a supercurrent "softly and suddenly vanish away" (Carroll qtd. in Mermin, 46). As "boojum" has moved from literary coinage to scientific jargon, the word

makes it hard to deny that the languages of literature and science interact. Exploring the history of this interaction may provide further insight into how the fields came to be perceived as opposing each other in mutually exclusive, binary fashion.

Delving into other curiosities that emerge from the literary climate of the long 18th century promises to further illuminate the roots of today's culture. We should not rest upon our perception of fact and fiction or even the tenets of epistemology – perhaps some of the sturdiest tenets we have – as received, but rather question them and learn their histories. This will allow us to understand not only *what* we think, but *how* we think – the content of our thoughts and the systems through which our thinking takes place, the implicit mechanisms at work in the ways we construct our knowledge.

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