Segmented Sleep in First-Century Roman Society

Master’s Thesis

Presented to

The Faculty of the Graduate School of Arts and Sciences
Brandeis University
Graduate Program in Ancient Greek and Roman Studies
Cheryl Walker, Advisor

In Partial Fulfillment
of the Requirements for the Degree

Master of Arts
in
Ancient Greek and Roman Studies

by
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May 2017
Acknowledgements

I would first like to extend my gratitude to the entire faculty and staff of the AGRS program. Without your hard work, we would have no program allowing us students to indulge our inner child and study the ancient world. In particular, I would like to thank Professor Cheryl Walker for never letting me be content and challenging my ability as a student and writer every step of the way. Her commitment to her students is only matched by her intimidating historical knowledge. Many thanks as well to Professor Koloski-Ostrow, whose reputation of being singularly devoted to the education and well-being of her students is well earned. I also thank Professor Christensen and his remarkable ability to introduce a new wrinkle anytime I feel a firm grasp on a subject matter.

To Yuko, who made the most incredible sacrifices all so I could chase a dream: Thank you. Thank you for supporting me. Thank you for encouraging me. Thank you for teaching me patience. Thank you for being you. I am forever indebted to you.
ABSTRACT

Segmented Sleep in First-Century Roman Society

A thesis presented to the Graduate Program in Ancient Greek and Roman Studies

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Roger Ekirch first revealed the idea of widespread practice of segmented sleep among European populations in the pre-industrial era. His historical treatise, backed by substantial scientific and anthropological evidence suggesting a human propensity for biphasic and segmented sleep, forms the groundwork for this study. This thesis seeks an answer to a simple question: since segmented sleep is so well established in other pre-industrial societies, did the Romans experience similar behavior? The direct references to segmented patterns are sparse, but employing contextual knowledge of recent sociological, anthropological, and scientific research helps interpret Roman literature in relation to segmented sleep. The current investigation is limited to the period of the Silver Age, including the works of Tacitus, Martial, Pliny the Younger, Juvenal, Suetonius, and Statius, to name a few. Exploring tangential issues like Roman cultural attitudes toward sleep, biological reactions to artificial lighting, and the existence of a culture of night work among the Romans helps unlock some of the mystery. The elite members of Roman society, about whom we know the most, undoubtedly knew about segmented sleeping patterns and likely practiced them occasionally. Because of influencing factors like their higher
exposure to artificial lighting, their behavior should provide the minimum expectation for the tendency of segmented sleep among other demographics of the empire.
For Ai
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Introduction

Imagine a world with no sleep - a twenty-four-hour daily marathon extending our current waking rituals, activities and dilemmas. How might life be different? How might society change to accommodate such a reality? Of course, the answers are almost unfathomable to us because sleep is integral to the human condition. We can no more conceptualize a world without the drive to eat, the pain of loss, the excitement of desire, or the absence of social bonds than we can a world void of sleep. Our lives inextricably involve this nightly ritual.

Despite its intrinsic role in our lives, humans frequently display a remarkable reluctance to concentrate on the significance of sleep. While many people might find satisfaction in getting a full night’s rest, we rarely consider how our daily need of sleep has established a framework for our institutions and behaviors. Sleep is something many enjoy doing but few relish examining. The human propensity to ignore sleep when reflecting on their daily lives is not a new idea. Seneca the Younger reminded Lucilius to keep this thought in mind, relating the Stoic advice to “ponder how long you have been doing the same thing: food, sleep, lust, your day passes by this routine”.¹

Sleep is a large issue and can be broken into several subcategories of study. One such topic is the timing of sleep, which addresses the question of when sleep occurs. This thesis concerns itself with a special aspect of sleep timing and sleep culture: segmented sleep. Segmentated sleep refers to the practice of sleeping through the night in two distinct blocks of

¹ All translations are mine unless otherwise stated. Seneca the Younger, Epistles, 77.6. cogita, quamdiu iam idem facias: cibus, somnus, libido, per hunc circulum curritur
time, which ultimately constitute “one night”. The most common practice is to sleep for approximately four hours, experience a bout of wakefulness between one to two hours (sometimes more), and then take a “second sleep” until morning. While a divided sleeping schedule sounds incompatible with a comfortable life to a contemporary audience, segmented sleep is well attested in historical sources. In fact, the Romans themselves were keenly aware of the existence of “first sleep”, a fact which seems a prerequisite to this thesis.

No previous study has examined segmented sleep in the classical world. Likewise, we have little understanding of its existence in the ancient world. To begin someplace, I plan to attempt to answer whether we can establish the normalized practice of segmented sleep among the Romans. I have focused primarily on Silver Age literature, and I have attempted to keep research outside of literature exclusively focused on the period corresponding roughly from 18 to 133 CE. My choice for this period stems from the fact that Silver Age literature invokes a more humanist tone, often focused on daily experiences, than previous periods of Latin work. I have intentionally omitted discussions about dreams, supernatural phenomena and the connection between sleep and death, as well as been selective about the references I include in this thesis.

I have divided this thesis into five chapters. Chapter one highlights the background of research on sleep and helps put this thesis into proper context. One of the primary obstacles I

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2 Segmented sleep itself is a subset of the umbrella term biphasic sleep. Most contemporary western societies practice monophasic sleep, in which rest is done in a single block of time. Biphasic sleep simply refers to breaking one’s daily quota of sleep into two distinct blocks. For simplicity, I will use “segmented” to refer to sleep broken in the night and “biphasic” to refer to more traditional ideas such as napping to supplement sleep lost at night.

3 For discussion, see the introduction to Ekirch.

4 For example, Virgil, Aeneid 8.407 and the idea of prima quies.

5 The possible exception is Nissin, Roman Sleep. Her work, however, focuses on looking at sleep holistically and only briefly examines segmented sleep as an individual topic.

6 For example, any evidence in archaeology or art.

7 I cover my methodology in more detail in Chapter Three.
encountered was the lack of analysis given to sleep and its patterns in historical or sociological studies.

Chapter two focuses on our established knowledge of sleep. This is broken into two parts: a more general overview of sleep as a human function, and one relating more directly to our knowledge of Roman sleep. My intent is not to provide the reader with an in-depth understanding of the science behind sleep nor of how Romans slept. Rather, my aim is to help provide a contextual framework with which to understand the more focused discussion on segmented sleep. Furthermore, by coming to a general understanding of Romans at rest, the peculiar complications of the present inquiry should become more understandable.

Chapter three deals with the direct evidence. I have drawn from sociological, scientific, and ancient sources. Given the difficulty of establishing sleeping times in other forms of data, the historical evidence comes almost exclusively from the written record. I have attempted to be succinct and have divided the evidence into three subcategories for clarity: evidence for, evidence against, and evidence open to interpretation. This third category comprises the bulk of the evidence, but I strove to place data in the first two categories whenever possible. I leave discussion to a minimum, only elaborating to clarify the relevance of any evidence cited.

Chapter four aims to give my interpretation and discussion of my findings, as well as highlight tangential issues related to the discourse. Some readers may find this chapter as a subchapter of the previous one, with good cause. In part, I establish a more extensive examination of some issues brought up in chapter three. For equivocal evidence, I have given my interpretation. I elaborate on issues like cultural attitudes, the role of artificial light and its effects on human biorhythms, lucubration and its interpretation, and sleep as a cultural construct. I discuss these matters and their implication on my study, paying particular attention to whether
they may help shed light on segmented sleep or only serve to compound the already substantial obstacles. I also highlight areas I believe deserve future exploration and can help provide a more certain answer to our query.

Chapter five includes a synthesis of the preceding chapters and an overall argument based on my interpretation of the data. I have attempted to give as conclusive an argument as I am able, given the evidence. I also address the limitations I encountered, and my reasons for thinking that such a study holds relevance as an important historical topic.
Chapter One: Previous Scholarship

The social sciences have overlooked sleep as a field worthy of attention. In fact, notwithstanding a few cursory investigations into the matter, research concerning sleep did not become a matter of intense study until roughly twenty years ago. Over two thousand years after Seneca urged others to examine the role sleep plays in their lives, those working in the social sciences had yet to heed his words. In an often-related anecdote, a pediatrician who specialized in mood disorders and sleep asked anthropologists what they know of sleep, in an attempt to boost his own understanding for his research. The answer he received was telling: zero. Worthman and Melby describe the lack of attention bluntly: “Sleep, in its ubiquity, seeming nonsociality, apparent universality, and presumed biologically driven uniformity, has been overlooked as a background variable.”

Their assessment is not unique in the humanities. Simon Williams perhaps facetiously labeled the study of sleep in sociology “dormant”. Galinier is equally unforgiving: “…entire sections of human social life are overlooked by anthropologists. It appears that anthropology has not yet been able to overcome the common assumption that the psychophysiological constraints

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8 The purpose of highlighting these assessments is not to indict those in the social sciences in their oversight of a vital component of human lives, but rather to give the reader context for the rest of this paper.
9 This anecdote surfaces in a number of recent social science papers. Here, I have paraphrased from Worthman and Melby, which appears to be the original source. Worthman, Melby, Toward a Comparative Developmental Ecology of Human Sleep.
10 Carol M. Worthman and Melissa K. Melby, "Toward a Comparative Developmental Ecology of Human Sleep," Adolescent Sleep Patterns, 69.
of sleep cause a halt in thought and action, a general slowing down of life’s rhythms, a decrease in energy expenditure, a collective ‘parenthesization’ of society’s activities in daytime, and even a kind of partial death, analogous to the season cycles of plants.”

Here Galinier highlights an important aspect on the study of sleep: professionals in the social science fields have been too eager to dismiss sleep as a biological concern, failing to recognize its sociological significance, despite the evidence refuting their classification. Adding fuel to this indictment, Richard Chenhall and Katie Glaskin acknowledge: “sleep has remained largely invisible in anthropological literature…This invisibility is largely true of sociology, too…”

The field of history has not escaped this tendency, either. Roger Ekirch, whose groundbreaking work almost singlehandedly established the field of sleep research in the humanities, gave his assessment of the topic in professional literature: “…social historians have normally displayed less interest in the mundane exigencies of human behavior than in broader issues relating to class, religion, race, and gender. Only recently have scholars systematically begun to address how individuals genuinely lived…”

The important thing to note is that all of these critiques took place roughly within the last decade, some within the last few years. After years of quiescence, the issue of sleep is only beginning to come to the forefront.

If the subject of sleep has been sparse, the more focused investigation of segmented sleep is virtually non-existent. Ekirch claims the field has been “wholly ignored”. He goes on to state, “so ingrained has been the historical indifference toward sleep that such elementary matters

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15 Ibid, 345.
as the time and length of slumber before the nineteenth century remain an enigma. The hour at which most individuals went to bed, when they awakened the following morning, and whether the duration of their sleep varied from one night to the next have never received serious analysis...”

While discussing the topic has become mildly popular on the internet, no serious research has been done on the issue since Ekirch wrote those words in 2001. This likely stems from the relative paucity of references in literary sources and the recognizable difficulty in finding evidence in material culture. Regardless of the difficulties of studying the subject, Ekirch rightfully addresses the notion that historians ought to pay more attention to this hidden aspect of our historical subjects’ lives.

17 Amateur experimental projects wherein a person practices segmented sleep, sometimes to extreme degrees, such as ceasing to use any artificial light, are easy to find with a google search. While I have not officially used any in my research, I found them both fascinating and demonstrative that segmented sleep among the Romans was worth serious inquiry.
Chapter Two: Our Understanding of Sleep

What We Know About Sleep In General

Both the hard and soft sciences disregarded the importance of the study of sleeping patterns for decades. Traditionally, researchers treated sleep as a biomechanical process, roughly uniform across all cultures, and approached it as such. Fittingly, research attempting to understand the biology behind the phenomenon has a long and storied tradition. My aim here is not to present an overview of our technical understanding of sleep. While such studies are worth reading, they are not important to this thesis other than to acknowledge that sleep does have biological causes. I turn, rather, to a concise overview of our understanding of why and how we sleep.

The fundamental truth about sleep is that there is no inherently natural way by which to do it. The peculiarities of sleep, like language, display a multitudinous variety and are no less intermingled in a society’s culture and habits. The more we discover about sleep, the more its cultural associations become evident. In short, sleeping is cultural. An oft-cited example is the Japanese custom of *inemuri* and its lack of counterpart in the west. *Inemuri*, literally translated from the Chinese characters, means “sleeping and existing”. Japanese people routinely

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18 Such as the release timing of the chemical melatonin, etc.
21 Brigitte Steger has written the most extensively on this topic. Her article *The Japanese Art of (Not) Sleeping* is a good introduction.
sleep on the job, including during important presentations. They also have a remarkable ability to doze off while remaining completely cognizant of their surroundings. The practice is deeply cultural and encompasses a great many forms of etiquette, procedures, and nuances easily missed by a western audience. *Inemuri* is only one example of the wide-ranging modes of sleep around the world.

Since sleep is partially a biological process, some aspects are common among all humans. A recent investigation demonstrated that temperature appears to be a significant factor in regulating the timing and duration of human sleep. Perhaps the most strongly attested impact on our sleeping habits, however, is the role light plays in our onset and waking patterns. The effect of light is so well known that scientists have begun looking at the more minute details of how light influences our sleeping behavior. Amazingly, recent research has demonstrated differences in the sensitivity to light based on previously unknown factors such as sex and time of day. For example, while no “dead zone” exists, during which humans have no sensitivity to light, our sensitivity is greater during our biological night than our biological day. These studies play an important role in attempting to ascertain the existence of segmented sleep in Roman society.

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22 Anyone who has witnessed a Japanese salaryman asleep on a train, face planted firmly in the middle of his chest, only to jump awake and dash out the door at his exact stop can testify to this miraculous capacity.
Another popular area of research is sleeping disorders, insomnia being a primary example. The problem of insomnia overshadows many lives in contemporary society. A recent study showed that at least one third of the population of the U.K. has insomnia, an astounding number when one considers the lack of attention devoted to the subject in popular culture.26 As with light and its impact on sleep, insomnia has received an abundance of attention in the science fields. Sleep scientists have made much progress and have begun to research more specific areas of insomnia, such as its causes and different types.27 Evidence also exists that links insomnia and other sleep disorders to more serious health concerns, such as vascular dementia.28

Another common topic of study originates in the interest about what happens to our conscious brain during bouts of sleep. Researchers have known for decades that humans maintain a level of awareness about their surroundings even when asleep.29 Any person who has ever fallen asleep on a car ride can attest to the seemingly impossible coincidence of consistently having the ability to wake up upon nearing one’s destination. Along with general perceptions of surroundings, evidence suggests that humans can also note the passage of time during sleep.30 For example, in one experiment, participants demonstrated a “statistically significant” ability to wake themselves at a given time in the early morning hours in a tightly controlled environment.31

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27 One might look at studies such as A. Harvey, "Insomnia, Psychiatric Disorders, and the Transdiagnostic Perspective," *Current Directions in Psychological Science* 17, no. 5 (2008), 299-303 for an understanding of the ever increasing knowledge of insomnia.
30 Ibid. 23.
31 The participants were kept in a single, soundproof, climate controlled room with no clocks or windows – suggesting an innate bodily “clock” that operates even while asleep.
Such issues were paramount in the study of sleep until the last decade or so. Only after the publishing of Ekirch’s work in the early 2000s have researchers begun to pay attention to the question of when we sleep. In its most general terms, a sleeping pattern can be monophasic, biphasic, or polyphasic.\(^\text{32}\) To date, no final consensus has been made on the prevalence of biphasic sleep among humans because both culture and biological factors appear to play a role in the establishment of biphasic patterns. The evidence does suggest, however, that segmented sleep appears not to have developed before humans migrated into Europe; the shorter nights in tropical latitudes did not present adequate conditions to foster such a pattern.\(^\text{33}\) Even so, segmented sleep itself is widely attested in the historical record, particularly through Europe.\(^\text{34}\) Segmented sleep is not the only issue in sleep timing. When on a natural cycle, the human body appears to wake early in the morning, often shortly before sunrise. Humans also exhibit noticeable differences in sleeping patterns based on season. For example, we tend to sleep slightly longer in the winter than the summer.\(^\text{35}\) Naps are also more common in the summer.\(^\text{36}\)

**Our Understanding of Sleep in the Roman World**

What we know of Roman sleep comes from a variety of sources and disciplines. Luckily, the Romans themselves thought about sleep and several segments of classical works are devoted to the subject. We can gain an understanding by the words Romans spoke about sleep, their daily

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\(^{32}\) Among humans, only babies naturally practice polyphasic sleep. Among adults, it appears to be an artificial construction. Likewise, I have not given it attention in my project.

\(^{33}\) Yetish et al., “Natural Sleep and Its Seasonal Variations in Three Pre-industrial Societies.”

\(^{34}\) Ekirch *At Day’s Close*, Preface tackles the prevalence of segmented sleep in the historical record. He includes mention of the ancient world as well.

\(^{35}\) De la Iglesia et al., "Access to Electric Light Is Associated with Shorter Sleep Duration in a Traditionally Hunter-Gatherer Community," *Journal of Biological Rhythms* 30, no. 4 (June 18, 2015).

\(^{36}\) For a more in depth look at our understanding about the subject of sleep see: C.M. Worthman and M. Melby *Toward a Comparative Developmental Ecology of Human Sleep*, C. Worthman *The Evolutionary Ecology of Human Sleep*, S. Williams *The Social Etiquette of Sleep: Some Sociological Reflections and Observations*, S. Williams *The Sociological Significance of Sleep: Progress, Problems and Prospects*. 
actions, the material culture they left behind, and occasionally through their views on other
matters. Some conclusions are easy to reach; unfortunately, however, often either the lack or
ambiguous nature of the evidence can leave the historian wanting. Nevertheless, we can begin to
paint a recognizable, if incomplete, picture of the Roman culture of sleeping.

The easiest habit to note among the Romans was the practice of waking early in the
morning. The early morning routine has entrenched itself as common knowledge among those
who study the Romans, and with good reason. Even within the relatively limited scope of Silver
Age literature, the evidence supporting the idea that most Romans awoke early every morning is
overwhelming. Martial devoted several epigrams to early mornings, both the negative and the
positive aspects of such a custom.\textsuperscript{37} Seneca advises that fathers wake their children early in order
to establish good life habits.\textsuperscript{38} Juvenal suggests that, no matter how early one wakes, someone
more needy has awoken earlier.\textsuperscript{39} Even Otho had the wherewithal to rise early and remove
himself at sunrise.\textsuperscript{40}

The \textit{patronus-cliens} dynamic also ensured an early morning for many. Vespasian woke
early in the morning to take part in the customary \textit{salutatio}, often before daylight.\textsuperscript{41} Pliny the
Younger also made sure he arrived home early to prepare for the morning ritual of greeting
clients.\textsuperscript{42} Seneca voices some dissatisfaction that this had become a habitual (\textit{ex consuetudine})
component of some people’s lives.\textsuperscript{43}

\textsuperscript{37} At least five epigrams highlight early mornings: 4.8, 5.22, 7.54, 10.10, 12.26.
\textsuperscript{38} Seneca the Younger, \textit{Dialogues (On Providence)}, 1.2.5.
\textsuperscript{40} Tacitus, \textit{Histories}, 2.49.
\textsuperscript{41} Suetonius, \textit{Vespasian}, 21.
\textsuperscript{42} Pliny the Younger, \textit{Epistles}, 3.12.
\textsuperscript{43} Seneca the Younger, \textit{Epistles}, 101.3.
Romans preferred to sleep in the dark, often drawing curtains that seem to have been exceptionally effective at blocking out light. Rooms were often kept dim at night, with possibly a single, low-level light source when light was needed. So attuned were Romans to dark rooms that some even developed amazing powers of night vision.

Bedrooms were often places of solitude and respite from the world. Identifying where these bedrooms were, however, presents substantial difficulties for archaeologists. Nissin suggests that earlier scholarship has been too quick to label bedrooms and establish a system for their placement. Contrary to the more common argument of ephemeral use of rooms in a typical Roman dwelling, bedrooms were likely static and inhabitants seem to have employed them over a long stretch of time.

Bedding was the preferred method of establishing a sleeping area. Beds were rectangular, robust, and often had a low footboard combined with a higher headboard. Bigger, better, and more intricate beds were a luxury for which Romans strove. They seem to have been of various height, with lower beds deemed more simple. Indeed, beds were multi-functional and different varieties existed. Men and women frequently practiced co-sleeping, though Romans were

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46 e.g. Tiberius. Suetonius *Tiberius*, 68.
49 Laura Nissin “Roman Sleep: Sleeping areas and sleeping arrangements in the Roman house” (PhD diss., University of Helsinki, 2016), 32-35. A focused, concise illustration of the problematic identification of bedrooms can be found also in: Laura Nissin, “Cubicula Diurna, Nocturna – Revisiting Roman cubicula and sleeping arrangements,” *Arctos* 43 (2009), 102-3.
50 Ibid. 58. With discussion and references.
53 Laura Nissin, “Sleeping Culture in Roman Literary Sources,” *Arctos* 49 (2015), 101-2. With discussion and references.
particular about their sleeping partner; furthermore, upper-class, urban citizens were more likely to spend energy concerning themselves with the appropriateness and specifics of co-sleeping. Babies did not share the bed with their parents, but instead found themselves in cunae kept near to the adults. Romans preferred an abundance of soft pillows for sleeping and for diurnal use in case of visitors. Both pillows and covers were common enough to receive a range of vocabulary to describe them. Slaves and the poor often used a simple cloak for warmth.

Nighttime rituals among the Romans are hard to determine. Sleeping attire is almost completely unknown. Women may have worn some garment to bed, though what type is wholly uncertain. Men may have donned a special undergarment, or simply kept on some sort of undertunic, though here again establishing the type is problematic. Sleeping nude or close to nude was a habit among some men. Some women went through a nighttime ritual of removing their makeup and any other accessories they may have been wearing. A brief walk before bed helped to calm nerves or served as an excuse to put off sleep. Of course, no nighttime ritual would be complete in a Roman’s mind without proper placement of their lares.

55 Nissin, “Sleeping Culture in Roman Literary Sources,” 111.
56 Carlano and Sumberg state that Romans used pillows to support their reclined posture during social calls. They also explain that Romans may have enjoyed the cradled support offered by surrounding themselves with many pillows, suggesting that tossing and turning might have been a common occurrence. Annie Carlano and Bobbie Sumberg, *Sleeping Around: The bed from antiquity to now* (Santa Fe, NM: Museum of International Folk Art, 2006), 38.
57 *Cadurcum*, Juvenal. 7.221; *gauzapia*, Martial. 14.150; *lodix*, Martial. 14.146; *vestis*, Petronius, 26. etc.
58 *Suetonius*, *Nero*, 48.
59 Olson records Propertius complaining that Cynthia slept “wrapped up” (extremo dormit amicta toro) and another case involving a purple or Phoenician nightcap (Propertius 3.21.8; 2.29.15). Kelly Olson, "Roman Underwear Revisited," *The Classical World* 96, no. 2 (2003), 210.
61 *Tacitus*, *Histories*, 5.22. *Dux semisomnus ac prope intectus errore hostium servatur*. What exactly Tacitus means by prope intectus is unclear, nor whether this habit extends beyond the military.
63 Ibid. 10.84.
The Romans also had strong cultural thoughts concerning sleep, extending into the realm of morality and conceptions of decency. Public sleeping appears to have been looked down upon.\textsuperscript{64} Though they recognized sleep as a necessity and its nightly observance in accordance with nature, Romans remained cautious against advising one to partake in the habit to an excess.\textsuperscript{65} Night time was for sleep, and the misuse of nighttime frequently acted as a \textit{topos} for other character weaknesses.\textsuperscript{66}

Understandably, we comprehend more about what the Romans thought about sleep than their actual practice. The archaeological record helps elucidate certain aspects of their sleeping habits, such as the physical nature of beds and possible locations of bedrooms. Unfortunately, the evidence in the material culture remains varied. As with modern literature, Romans seem to have been either reluctant or had no interest in discussing matters of sleep outside of a moral or prescriptive context. Of course, the precepts and actual behavior of a society are often at odds. That the Romans held firm to the notion that one ought to be sleeping in the middle of the night is no more telling of the reality than the falsehood that Rome never started a war, but only acted in defense when provoked. Even so, we possess a decent understanding of Roman sleeping habits, even if our knowledge of the particulars is left wanting.\textsuperscript{67}

\textsuperscript{64} Ibid. 6.9.
\textsuperscript{65} Seneca the Younger, \textit{Epistles}, 122.9.
\textsuperscript{66} Seneca devotes an extraordinarily large amount of his energy to railing against night people; also: Suetonius, \textit{Nero}, 27.2; Juvenal, \textit{Satires}, 8.9-13.
\textsuperscript{67} For a more complete overview of Roman sleep, Nissin, “Roman Sleep” provides the most recent holistic study of the topic.
Chapter Three: Direct Evidence of Segmented Sleep

Introduction

Sleep warrants study into both its cultural and biological influences. Our current scientific and growing anthropological understanding of sleep has informed my categorization of evidence since the scientific evidence holds as much value as literary references and helps clarify otherwise ambiguous passages. For the third section of this chapter, comprised of material I believe open to interpretation, I have tried to give my own conclusions whenever possible.

I have limited the scope of my examination strictly to Latin Silver Age literature and its roughly equivalent historical period of 20 – 130 CE. Previous work in this area was done through data mining specific texts based on dictionary listings of focused vocabulary. The amount of material in Silver Age literature necessitated a combination of methods to work through my selected texts. As no definitive declaration was issued at the time calling for the cessation of one age and the start of another, precisely which sources fall under the umbrella of “Silver Age Author” is somewhat nebulous. This grey area, along with the scope of the period, forced me to make some judgment calls about the exclusion of some accounts. For example, Paterculus, who wrote in the first years of the period but almost exclusively covered the preceding decades with his work, was not included. Other authors, such as Curtius Rufus, I excluded because I did not

\[68\] None of this work, as far as I can tell, was focused extensively on both classical sources and segmented sleep. For example, Ekirch suggests his search through classical sources was limited to vocabulary references of concubia nocte and primo somno (Ekirch, At Day’s Close, 301, 405). Nissin explains her process as beginning with data mining with particular vocabulary (Nissin, “Sleeping Culture in Roman Literary Sources,” 96).
consider their dating well enough established or the subject matter relevant to an investigation into Roman lives.\textsuperscript{69} Access also played a role, and more obscure sources to which I had limited or no access were, perhaps unfortunately, not included.\textsuperscript{70}

\textbf{Methodology}

Even a topic as narrowly defined as segmented sleep involves a myriad of surrounding issues to be considered. What I have included in my work, therefore, is not the totality of every single reference I found that might hold significance in my study. Instead, after closely examining the data I believed were important for this work, I narrowed that group down to information particularly relevant to segmented sleep. Therefore, I have included those references I believe either address segmented sleep directly or selected those that help provide a framework and context with which to address my research question. For instance, I gathered a great deal of information highlighting the importance of rising early in the morning, which is a normal pattern among individuals on a natural sleep cycle, but have only included a few references in this thesis. Likewise, Seneca seems to have been unable to go more than a day without griping about somebody’s woeful sleeping habits, but I did not include every detail of his opining.

Unfortunately, explicit references to something resembling segmented sleep are extraordinarily rare. Instead, I found several vague stories of people awake at night, experiencing bouts of wakefulness, or similar circumstances. The ambiguous nature of my findings forced me to use some subjectivity in my classifications and decisions about which references to include. I do, however, believe I have exercised appropriate scrutiny, including only those findings most

\textsuperscript{69} For example, Rufus wrote on Alexander the Great, a difficult topic by which to assess the Roman world.  
\textsuperscript{70} E.g. Pomponius Secundus, Caesius Bassus
applicable to an investigation of segmented sleep, while presenting an honest depiction of the data.

The first part of my journey involved reading primary sources in translation. I read Juvenal, Petronius, Persius, Pliny the Younger, Martial, Suetonius, andTacitus in their entirety. Next, I read a large selection of the elder Seneca’s *Controversiae*. The Younger Senecas volume of surviving work is substantial, and I read his *Epistulae* and *Dialogi*, which I believed to be the most relevant to my study. Of some authors, I read smaller segments. For example, I read book ten of Quintilian’s *Oratoria*, which has salient information on nightly habits. While reading, I noted references to issues related to sleeping habits. I addressed each instance on a case-by-case basis, usually making note of context, and determined whether it was applicable to my study. After assembling the list of data I wished to include in my study, I cross-checked the Latin text to reduce the possibility of erroneous assignment of information.

For the remaining authors, and the parts of the works of those authors I did not read in whole, I searched for key terms through their text in the Latin Library. I searched each text for the roots *somn*-, *noct*- (as well as the nominative form *nox*), *vigil*-, *vigilia*(-), and *concubia*(-). As above, I addressed each hit individually. The overwhelming majority of the returns had no

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71 Perhaps I was misled by Pliny’s references to time in court proceedings and hoped a more focused text would prove useful. In any case, reading the *Controversiae* turned out to be extraordinarily fruitless. I likely spent a great deal of time in the wrong corners of study working on this thesis. To borrow an excuse from the Elder Pliny, *praeterea iter est non trita auctoribus via nec qua peregrinari animus expetat*.

72 I also made a limited search of *quiet*- and *dormi*-. Due to time restrictions and the association of *quiet*-vocabulary with daytime sleeping, however, this search was not done with the same extensive nature as the others.
connection to this investigation.³³ Lastly, I looked in vocabulary reference materials such as the OLD (Oxford Latin Dictionary) to check if I missed any apparent references.

Over the course of my examination, I discovered that vocabulary choices had little impact on possible references to segmented sleep. Concubia nocte, for instance, the most cited example of a vocabulary word in Latin for the presence of segmented sleep, rarely appears. Instead, what I found were many vague suggestions of people awake at night, describing a veritable second life of Romans, which would most likely be hidden to those performing a vocabulary search due to the sheer amount of data.³⁴ Context played a larger role in assessing the relevance in a passage than terminology.

**The Evidence For Segmented Sleep**

Since the direct evidence remains sparse, part of determining whether segmented sleep was a cultural norm rests in identifying its occurrence as a common sociological feature. The evidence for the practice of segmented sleep across cultures and times is increasingly more established in sociological studies. Segmented sleep is a particular form of biphasic sleep, which itself is well established. As Worthman notes, “a robust extant literature documents a human tendency to be biphasic.”³⁵ Furthermore, pre-modern societies still existing in the world display a tendency to practice segmented sleep. Paul Bohannan’s ethnological study of the Tiv of Western Africa indicates not only the custom of segmented sleep, but also a deep lexigraphy detailing the

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³³ I did not keep statistical data. As a rough estimate, for every fifty returns I had, one would be relevant to sleeping patterns. For every ten of those, one hit would warrant further consideration specifically to segmented sleep.

³⁴ Nissin comments on the laborious task, although her research also included terms such as cubiculum (“Roman Sleep,” 21). Notably, she remarks she had to limit the amount of data due to the overwhelming amount of returns on word stems such as noct-, iac, and quiet. Sifting through this amount of data, in addition to understanding it in context and linking it to segmented sleep or not, would be a herculean task.

³⁵ Worthman and Melby, “Toward a Comparative Developmental Ecology,” 93.
various stages of nightly sleep and time. The G/wi living in the Kalahari Desert display signs that they experience segmented sleep in their pre-modern culture as well. William Holladay has even demonstrated that segmented sleep exists in the bible, providing a closer link to the Romans than the study of more contemporary societies.

The evidence suggesting a human predilection for segmented sleep is not limited to the sociological realm, however. The scientific evidence also seems to support the notion that our bodies prefer a segmented sleep pattern. In fact, our current model of roughly sixteen hours of wakefulness followed by eight hours of sleep appears to be our “summer mode”. Under normal conditions, the body adjusts the duration of sleep and wakefulness based on the amount of sunlight. Pre-modern societies display a great deal of seasonal changes, with winter sleep patterns being on average one hour longer than summer, this difference, however, is attributed to sleep onset rather than morning waking times. The deviation is due to artificial light, which has shifted our biological clocks forward as much as four to five hours, according to Dr. Czeisler, an expert on human sleep. Abundant research has shown that electric light makes sleep duration shorter and sleep onset occur later. In a study done on three pre-modern tribes inhabiting different parts of the globe, researchers found that average sleep onset without artificial lighting occurred approximately three hours after sunset. Others studies have come to similar

80 Yetish et al., “Natural Sleep and its Seasonal Variations.”
83 Yetish et al., “Natural Sleep and its Seasonal Variations.”
conclusions, indicating ranges typically between two to three hours. This would indicate the “natural” sleeping time for a human in Rome to be between 6:30 to 7:30pm in the winter, and 10pm to 11pm in the summer. Sunrise occurs at approximately 7:30 and 4:30am respectively.

Contrary to popular belief, humans tend not to follow an eight-hour sleeping pattern. Observations made on pre-industrial societies noted that they slept on average between 5.7-7.1 hours. In a study conducted with American participants, researchers found that the amount of time spent sleeping changed little even after the removal of modern lighting. In this study, the participants slept slightly under seven hours per night both before and after the change to natural (strictly sunlight) conditions. Other observations record similar findings; the evidence suggests that a natural sleep cycle generally consists of roughly seven hours of sleep. For a typical human, biphasic sleep becomes a possibility for any night length in excess of ten hours.

Time in ancient Rome was elastic and ever-changing, often season-dependent. The recognition of seasonal changes becomes apparent in the literary record in cases such as the students Persius satirizes as sleeping until eleven in the morning. Importantly, the time in this poem points to late July based on the appearance of the crazy dogstar (*insane canicula*). The timing of the poem is important: no Roman would believe that anyone, having fallen asleep at eight the preceding evening, could possibly still be sleeping at eleven in the morning. The poem necessarily takes place in the summer. The Romans, as is overwhelmingly common with pre-

84 Ibid.
85 Kenneth Wright et al., "Entrainment of the Human Circadian Clock to the Natural Light-Dark Cycle," *Current Biology* 23, no. 16 (2013).
86 The math: 7 hours of sleep + 1 hour of waking + 2 hours between sunset and sleep = 10 hour night. Of course, real human behavior is unfortunately never so clean and this is an illustration only.
89 Ibid. 3.5.
modern societies, experienced societal and biophysiological seasonal changes. In other words, even if they had tried to overcome the nature of their biorhythms, the Romans would likely have been unable to do so completely. More relevantly, they seemed acutely aware of these changes. Both Persius and Juvenal satirized the behavioral modifications that occur with the changing of the seasons. Both Pliny the Younger and the Elder Pliny famously adjusted their patterns between summer and winter modes.

Studies have indicated how easily humans revert to their natural biorhythms. Thomas Wehr has conducted a number of tests which demonstrate the body’s inability to fight these natural patterns. In one study, he demonstrated how modern test subjects quickly revert to segmented patterns when removed from the influences of modern lighting. Artificial lighting was less prevalent in the Roman world than our own time, and they likely experienced bodily rhythms closer to a natural state than modern societies; likewise, the predisposition for the human body to fall into modes of segmented sleep would have been much higher for them than our monophasic culture. This likelihood, coupled with the modern world’s near-complete lack of awareness of the issue, would help explain such assessments as the one made in 1918 by Berthold Ullman: “Many men got up to start the day’s work in the middle of the night.”

Some of the most direct evidence from Roman literary sources comes from the existence of a limited vocabulary for “first sleep”. *Concubia nocte*, often translated into English as derivatives explaining something occurring in the night time, in fact can mean “first sleep”.

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91 For examination, see: Gibson and Morello, *Reading the Letters of Pliny the Younger*, 118.
92 Thomas A. Wehr, "In Short Photoperiods, Human Sleep is Biphasic," *Journal of Sleep Research* 1, no. 2 (1992).
93 Berthold L. Ullman, "Daylight Saving in Ancient Rome," *The Classical Journal* 13, no. 6 (1918).
Another term, *prima nocte*, also appears in texts and corresponds to the same idea. These words occur only sporadically in Silver Age literature. The case here is not quantity of references available, but rather the mere existence and propagation of the terms.

Of course, nothing dealing with segmented sleep is so easy. To complicate matters, Nissin states that in her opinion the vocabulary applies more to a general idea of “the middle of the night”, or appears in a military context.\(^95\) Tacitus uses the term *concubia nocte* in both the *Annals* and *Histories* with a military backdrop, in my opinion, however, eschewing a military sense to the word. For example, in one passage Tacitus writes:

\[\text{utque mos vulgo quamvis falsis reum subdere, Munatium Plancum consulatu functum, principem legationis, auctorem senatus consulti incusant; et nocte concubia vexillum in domo Germanici situm flagitare occipiunt...} \]

And just as is the custom of a mob to lay a charge, however false, they accused Munatius Plancus, a former consul, the leading envoy, and the author of the Senate’s decree; and after first sleep began to demand the imperial standard placed in Germanicus’ quarters…\(^96\)

While the context of this passage comes in the form of a military setting, I see no reason to suspect that Tacitus was attempting to apply a military understanding of the word in this context.\(^97\) He could have used more appropriate military terminology such as *vigilia* had he wished to make this connection. Instead, he seems to be pointing to a specific time of night, in my opinion, after their first sleep.

In another instance, Tacitus uses the term with a more nebulous meaning.

\(^{95}\) Nissin, “Sleeping Culture in Roman Literary Sources,” 118.  
\(^{96}\) Tacitus, *Annals*, 1.39.  
\(^{97}\) For example, specifying which watch of the night, etc.
Vitellianus miles socordi custodia clausos circumdedit; eoque concubia nocte suos liberos Sabinus et Domitianum fratris filium in Capitolium accivit…

Vitellianus kept a useless watch over the prisoners; and then in the middle of the night/after first sleep, Sabinus brought his own children and Domitian, the son of his brother, into the Capitol…

Here the translation of concubia nocte presents more difficulties. This passage seems to align better than the previous one with Nissin’s assessment that the “expression [concubia nocte] appears in the writings of several Roman authors, but it seems rather to correspond to the expression ‘in the dead of night’ than to indicate dividing sleep into segments.” Still, I find nothing pushing the translation one way or the other. Translating concubia nocte as “after first sleep” appears equally justifiable as “in the dead of night”, as Nissin suggests. My view is that Nissin too hastily writes off the possibility that this refers to a time after first sleep. I find it hard to distinguish the two meanings so easily, given the scope of our current understanding of Roman sleeping patterns. Furthermore, for Tacitus “the middle of the night” and “after first sleep” might be the same thing, with no tangible difference between the two meanings.

In other instances, we see similar uses of terminology. For example, Seneca employs concubia nocte in a tricky backtracking of quotations, possibly defining the time of sleep. Petronius’ usage of prima nocte is ambiguous but might be looked at as a reference to first sleep. Phaedrus’ use of the term describing a sleeping wife is more certain. These terms appear more in other periods of Latin literature, a scope outside the bounds of this thesis.

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98 Ibid, Histories, 3.69.
99 Nissin, “Sleeping Culture in Roman Literary Sources,” 118.
100 Seneca the Elder, Controversiae, 7.1.27. Seneca quotes Cestius, using concubia nox, as imitating Virgil, who simply used nox (Aen. 8.26).
101 Petronius, Satyricon, 112.
102 Phaedrus, Fables, 3.10.31 (Here primo somno).
103 Including some uses Nissin herself admits are almost certainly “first sleep.”
in times where the meaning of these terms is difficult, nothing precludes the idea of “first sleep”, contrary to Nissin’s interpretation. Their mere existence, and their possibility as pertaining to first sleep, however, suggests some knowledge and some sort of commonality about the idea of segmented sleep.

The division of sleep into two parts was almost certainly not a foreign concept to Romans. Some of the most famous historical figures practiced segmented sleeping habits, a fact that would not have been lost on people of the time. Augustus appears to have slept in such a fashion. 104 Also, Pliny the Elder undoubtedly practiced a segmented sleeping pattern. Most notably, he only began this habit after the Feast of Vulcan near the end of the summer. 105 Along with providing strong evidence of segmented sleep, Pliny’s changing habits reinforce the notion that Romans’ behaviors changed in accordance with the seasons. The Elder Pliny himself reinforces this evidence in his own work, writing in the dedication to his Naturalis Historia “I have taken care to make this work in odd hours, indeed even at night, lest anyone think I was idle in these hours.” 106 Though less direct than Pliny, Seneca as well suggests that a part of the night is a good time to accomplish work. 107 He may very well have been describing the same sort of work in between sleeping phases. Tiberius Caesar might have experienced segmented sleep, with anecdotes of his amazing night vision when he awoke in the night being widely reported. 108 In pre-industrial Europe, well documented in its practice of segmented sleep, this “cat’s eye” vision was popular enough to gather some professional interest. 109 The elite may not have practiced a

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104 Suetonius, Augustus, 88.
105 Pliny the Younger, Epistles, 5.8.
106 Pliny the Elder, Naturalis Historia, Preface (Ch. 4). subsicivisque temporibus ista curamus, id est nocturnis, ne quis vestrum putet his cessatum horis
107 Seneca the Younger, Epistles, 8.1.
108 Ibid, 11.54; Suetonius, Tiberius, 68.
109 Ekirch, At Day’s Close, 124.
segmented pattern as much as other classes of society, but the casual way in which these references appear might indicate segmented patterns of sleep were widely known.

Also of note are subtle references to segmented sleep, seemingly meant to be understood as such by a wide variety of readers. For example, Quintilian suggests “whenever you wake at night” (quotiens intermissus est somnus), you ought to use the darkness and tranquility of mind to assist in meditating upon your work.110 Pliny seems to refer to this nightly waking, saying that the dreams experienced upon falling asleep again after waking are agreed to have no significance.111

Notable is the way in which many of these references correspond to reports from the more well-documented period in Ekirch’s work. Meditation was a common activity for people during their midnight interval.112 Work, writing, and sculpting an industrious character were other common practices; amazingly, some also left their houses to take care of other matters or simply join their friends for some company before returning home for more rest.113 This might help explain the presence of noise generated by people in the city in the middle of the night in authors such as Martial, Juvenal and Seneca.

The Evidence Against

While much of the scientific evidence seems to point to a human propensity for biphasic sleeping patterns, some data exist that counters this idea. Because sleep is both a cultural construct as well as a biophysiological reality, not all societies experience sleeping patterns equally. One experiment, conducted by a German Science TV channel, had volunteers live in

110 Quintilian, Oratoria, 10.6.1-2.
111 Pliny the Elder, Naturalis Historia, 10.98.
112 Ekirch, At Day’s Close, 310.
113 Ibid, 305-7.
Stone Age conditions for two months to monitor the change in their sleeping patterns. While the participants both stayed in bed and slept for longer durations, no biphasic sleep schedule emerged. These findings are somewhat significant because they directly contradict the findings of Wehr in his laboratory experiments. It should be noted, however, Wehr’s subjects developed a segmented pattern of sleep during a short photoperiod, similar to the amount of light experienced during the winter. Still, the participants did not display biphasic tendencies during the experiment, suggesting a possible difference between “real world” applications and laboratory environments such as employed by Wehr. Yetish and his colleagues, in their study of three geographically distinct tribes, also found that no steady biphasic sleep pattern exists, with both naps and nighttime wakings being infrequent. Also notable were their findings that the three pre-modern tribes in question slept no longer than modern societies, contradicting the findings of the German TV study. These divergent results indicate the societal influence of sleep over the biological tendencies of the human body, demonstrating that establishing a preferred sleep pattern for the human body is problematic.

Making an argument against segmented sleep using evidence from ancient sources is difficult. Perhaps the strongest indication is the limited quantity of references within the record. This argumentum ex silentio is not convincing, however. As noted earlier, the Latin vocabulary of concubia nocte and primo somno is not without cautions. While the dictionary

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114 The study occurred in August and September.
116 A caveat introduced in the article: This study was not an industry-supported study and did not involve the tight controls such a study might practice.
117 Pioscyzk and colleagues acknowledge this discrepancy in the study and provide limitations on the study that may have influenced those findings (low number of participants, unaccounted time frames).
118 Yetish et al., “Natural Sleep and its Season Variations.”
119 In the next chapter, I argue that Roman views on sleeping might be a contributing factor to the low number of references.
includes a possible meaning of “first sleep”, and Ekirch himself notes their usage as such, Nissin disagrees with this view. While I have stated that I find her assessment too hasty, one cannot deny the possibility of her argument that the phrasing *concubia nocte* means something more akin to “in the dead of night” than to any sleeping pattern. Her opinion is that the Roman day was likely biphasic, but restricted to a rest around mid-day and a single block of sleep at night. The view that the night was for sleep is well-attested in the sources, particularly Seneca, as is the satirical complaint of losing sleep at night due to the noise in the city. Such sentiments do not provide strong corroboration for the view that Romans slept in a single block, but do provide a small buttress. Tacitus describes the night watch, which may be interpreted as occasionally synonymous with segmented sleep, as a laborious duty, possibly demonstrating that even for soldiers waking in the middle of the night was an arduous effort.

**Mixed Evidence**

Many references in the ancient sources do not fall into either category. Two categories comprise this section: evidence that can be argued for either side, and that for which an argument can be made against its relevance to the topic. The primary problem is that much of this evidence is too ambiguous to decode — its relation to segmented sleep is not explicit enough to categorize as favoring or denying the existence of segmented sleep.

*Vigilia* began as a military term denoting different times of the watch. Livy uses it extensively, often clarifying precisely which *vigilia* he meant (first, second, etc.). By the Silver Age, however, the term appears to have taken on a broader meaning of simply “being awake”.

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120 Nissin, “Roman Sleep,” 50; “Sleeping Culture in Roman Literary Sources,” 118-119.
121 Nissin, “Sleeping Culture in Roman Literary Sources,” 119.
The dictionary lists a possible meaning as lying awake at night or experiencing sleeplessness.\textsuperscript{123} The literary record suggests that Romans applied the term both to daytime and nighttime wakefulness.\textsuperscript{124} Some uses seem to indicate a suggestion of being awake in the middle of the night.\textsuperscript{125} The common usage might indicate a growing acceptance among the Roman population that nighttime behavior during periods of wakefulness were as normal as, and frequently functioned similarly to, the diurnal variety.

Remarks about people waking in the middle of the night appear scattered in Silver Age literature. Some of these seem more suggestive than others, such as Quartilla’s party in the \textit{Satyricon}. Encolpius describes how he and the other party goers fell asleep, were lightly bothered by some robbers shortly into their sleep, and later on woke up once again to continue the festivities.\textsuperscript{126} Based on the context, the party goers slept longer than briefly, but not more than a few hours. They eventually found themselves amid a wedding consecration ceremony taking place in the middle of the night.\textsuperscript{127} The text here is corrupted, but it appears the party goers once again went back to sleep. No one seems to have had any discontent about waking midway through sleep to continue in merrymaking and return to bed thereafter. Still, the genre of literature might point to this story being used more for humorous or satirical effect than portraying any wider cultural norm. Moreover, the ability of the inebriated to sustain habitual sleeping habits is suspect.

\textsuperscript{123} Simpson, \textit{Cassell’s New Compact Latin Dictionary}.
\textsuperscript{124} Its use strictly during the night: Seneca the Younger, \textit{Epistles}, 8.1; In relation to waking from sleep: Seneca the Younger, \textit{Epistles}, 122.1; Contrasting sleep and wakefulness with a possible meaning of being awake at night: Seneca the Younger, \textit{De Consolatione ad Polybium}, 7.2; Pliny the Younger, \textit{Epistles}, 1.3; On general wakefulness: Phaedrus, \textit{Fables}, 3.25 (prologue), Seneca the Younger, \textit{De Ira}, 29, \textit{Epistles}, 122.3.
\textsuperscript{125} Notably Seneca the Younger, \textit{Epistles}, 8.1.
\textsuperscript{126} Petronius, \textit{Satyricon}, 22-23.
\textsuperscript{127} Ibid, 26. A torch lights the way for the procession.
Other night activities are common as well. Caligula enjoyed dancing at night; though the time is unspecified, the implication is that he frolicked sometime between the first and second watch.\textsuperscript{128} Claudius was a notoriously poor sleeper, often waking around midnight, about the time first sleep might normally end.\textsuperscript{129} Instead of then returning to sleep, he compensated by dozing off in court. Quintilian suggests too many people do too much work at night. The night is a good time to get work done, but only for those driven few.\textsuperscript{130} Here he imparts the philosophy that night is the proper time for sleep, but also opines that there is ample enough time for all the rest a person requires if one is careful.\textsuperscript{131} Working at night was a common theme. Juvenal relates the importance of fathers training their sons to wake in the middle of the night in order to accomplish their tasks.\textsuperscript{132} Notably, this is only to be done \textit{post finem autumni}. Seneca advises to use some of the night for the day’s business.\textsuperscript{133} Quintilian also recognizes that only a large part of the night is needed for sleep, the other, presumably, open for study, work, or other matters.\textsuperscript{134}

Some references are almost too vague to consider, although they underline the difficulty of assessing the topic in the sources. Tacitus, writing about the death of Piso, comments that he ordered his chamber to be sealed off late at night (\textit{multam post noctem}), after his wife had

\textsuperscript{128} Suetonius, \textit{Caligula}, 54. Suetonius hereafter shares an anecdote of the emperor inviting senators over only after the second watch (once he was finished dancing).
\textsuperscript{129} Ibid, \textit{Claudius}, 33.
\textsuperscript{130} Quintilian, \textit{Oratoria}, 10.3.25-27.
\textsuperscript{131} The association with segmented sleep is unclear. The suggestion of both too many people already employing the night for work, as well as using only the extra hours, unneeded for sleep, might indicate a reference to those hours of wakefulness indicative of segmented sleeping patterns.
\textsuperscript{132} Juvenal, \textit{Satires}, 14.190-93. ...at \textit{nunc post finem autumni media de nocte supinum clamosus iuvenem pater excitat:} “\textit{accipe ceras, scribe, puer, vigila, causas age, perlege rubras maiorum leges.”} The point Juvenal is making here is unclear. Juvenal contrasts this behavior with the more austere life of generations past. Are boys in Juvenal’s time simply too lazy or out of sorts to operate on normal biological timing, indicating an expectation to otherwise be awake at this time? Is the emphasis on the changing duties of the father or the degradation of future generations? Does this speak to some sort of training in order to condition one to a segmented schedule?
\textsuperscript{133} Seneca, \textit{Epistles}, 122.4.
\textsuperscript{134} Quintilian, \textit{Oratoria}, 12.11.19.
departed from the chambers.\textsuperscript{135} Were the two up late into the night talking, or had they awoken after their first sleep, at which point it was customary for the wife to move bedchambers? Petronius writes the witty abduction of Giton by Ascyltos, who stole him in the middle of the night. Here Encolpius does not realize what has happened until he wakes up the next morning.\textsuperscript{136} Some confusion ensues as to Giton’s true feelings about Ascyltos, providing some reason to believe he was not abducted but purposefully ran off. Here as well, the text provides little to determine whether they absconded due to Encolpius “missing” his waking period because of his intoxication. Unless a strong link is shown, this particular episode and others similarly ambiguous are unhelpful in my opinion.

Episodes of possible divided segments of sleep can often be categorized due to other factors, making identification even more difficult. Caligula suffered from insomnia, a fact made most famous by Suetonius.\textsuperscript{137} One interpretation is that Caligula suffered from a distinct fear of the night and wandered the halls either to keep his mind at ease or out of a sense of loneliness.\textsuperscript{138} Ekirch, however, notes that waking after a half a night’s worth of sleep with either an inability or lack of desire to sleep again might be indicative of a segmented sleeping pattern.\textsuperscript{139}

Galba ate breakfast before daylight, but only in the winter.\textsuperscript{140} A pre-dawn meal in the wintertime would require an early breakfast and might be a misidentification of a light meal during a waking period. The Elder Pliny describes ambassadors who came from the faraway

\textsuperscript{135} Tacitus, \textit{Annals}, 3.15.
\textsuperscript{136} Petronius, \textit{Satyricon}, 79.
\textsuperscript{137} Suetonius, \textit{Caligula}, 50.
\textsuperscript{139} Ekirch, \textit{At Day’s Close}, 306. Benjamin Franklin was perhaps the most famous practitioner of such a habit.
\textsuperscript{140} Suetonius, \textit{Galba}, 22.
island of Taprobane who “did not prolong their sleep to daybreak.”  

His statement may indicate the Romans understood the island peoples not to take part in a second sleep, the one that would last until daybreak. Such a habit of foregoing second sleep matches the description Ekirch makes of individuals in pre-industrial England also skipping the second phase of sleep. Yet Pliny also indicates that the Taprobanians are unaccustomed to napping. Because surviving on first sleep alone could prove difficult, their abstention from naps might indicate a monophasic pattern in which they simply awaken shortly before dawn and do not permit themselves to “sleep in”.  

Furthermore, Taprobane, commonly identified as Sri Lanka, lies close to the equator, sharing hours similar to the tribes reported by Yetish. Taprobane’s geographic location might also help elucidate the particular sleeping pattern Pliny was attempting to describe.

A daily rest period, or siesta, is a well-known part of Roman culture. Such a normalized schedule suggests a predilection toward a biphasic schedule. How much sleeping occurred, however, is still up for debate. If the Romans did customarily partake in a nap, it would indicate that Romans routinely operated on a biphasic schedule. If they simply rested, that does not negate the possibility of biphasic tendencies, but does make them harder to establish.

Notably, many accounts of naps and siestas take place during summer hours. Bedrooms specifically designed for either daytime or nighttime rest existed, suggesting some separation between the two in the Roman mind. One of the primary differences between the two types of

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142 See preceding paragraph.
143 Yetish, et al., “Natural Sleep and Its Season Variations.” See previous section. Yetish also postulates that segmented sleeping patterns are not native to people within the tropics, only becoming a normative pattern with the longer winter nights associated with higher degrees of latitude.
144 A good examination is given by T. Wiedemann, *Sleep*, 125-139.
145 See, for example, Pliny the Younger, *Epistles*, 9.36; Seneca the Younger, *Epistles*, 83.6, who relates a nap after morning exercises and a bath warmed by sunlight, which replaces a cold water plunge on account of the speaker’s age. Both seem highly unlikely in the middle of winter.
146 See, for example, Pliny the Younger, *Epistles*, 1.3, 9.36, 7.4.
rooms, if attainable, seems to have been the desire for seclusion and privacy in a night room. Furthermore, the Romans distinguished between day and night sleep, further indicating an acknowledgment of the existence of daytime rest. Among many societies, daytime napping is common, but not expected. Worthman and Melby note that “specific physical and cultural ecologies may discourage or encourage napping.” Establishing a predominant pattern of napping, as opposed simply to a siesta culture, would strongly suggest biphasic tendencies in the Romans, particularly in the longer summer months and would indicate a stronger tendency toward maintaining a biphasic pattern into the winter months, shifting to a segmented pattern rather than a more separated pattern involving a nap.

147 Tacitus, Annals, 11.4; Pliny the Elder, Naturalis Historia, 18.14.
148 See page 19 about the human tendency to be biphasic.
Chapter Four: Evidence Continued

Introduction

In an observation germane to this thesis, Thomas Weidemann, in his essay on the Roman siesta and daytime sleep, states that “the evidence…should warn us how difficult it is to make generalizations about social practice on the basis of literary evidence. Each text in its own way mentions napping for reasons internal to its literary purpose, in terms of the expectations of rhetoric and popular philosophy about the morality of sleep.”\textsuperscript{150} Texts come with baggage, which might alter the narrative of whatever social practice the commentary describes. Much of the evidence from chapter three came from literary sources, primarily because of the complications of trying to determine when Romans slept based on any other ancient source of data. Keeping Weidemann’s caution in mind, this chapter attempts to provide a deeper context for complicated or unclear issues surrounding segmented sleep.

The topics in this chapter cover those that were brought up only briefly in the preceding part. It includes examination of Roman cultural attitudes toward sleep, biophysical matters related to sleep, the questions surrounding both lucubration and insomnia, and the impact of lighting. Issues such as insomnia are too large to treat here to completion and deserve their own work dedicated solely to their place on the issue of segmented sleep; as such, I have provided what I hope to be a concise prolegomenon for future projects.

\textsuperscript{150} T. Wiedemann, “The Roman Siesta” in Wiedemann and Dowden, \textit{Sleep}, 138.
Source Evaluation

Any student of ancient history knows the first thing to keep in mind about assessing any literary source is that upper class men wrote nearly everything. This inescapable fact influences almost every aspect of the writings on which historians depend. Keeping it in mind is paramount. In the case of segmented sleep, driven by both cultural and biological factors, both the class and sex of these writers incorporates important ramifications.

Even though some may have given inordinate attention to outside demographics, the poor or women, for example, there should be no doubt that ancient writers wrote based on their experiences as members of the upper class and established elite. Unfortunately, their bias presents problems that undermine the pursuit undertaken in this thesis. Ekirch notes that in his vast research, “allusions to segmented sleep are most evident in materials written or dictated by all but the wealthiest segments of society and sparse among the ample mounds of personal papers left by the upper classes…”151 He states this is a common trend in his research, and intensifies beginning in the late seventeenth century, “when both artificial lighting and the vogue of ‘late hours’ grew increasingly prevalent among affluent households.”152 The division discovered by Ekirch identifies a possible impediment to understanding the true nature of segmented sleep among the Romans. The upper classes represented a small percentage of the total population of the empire. If wealthy Romans were as predisposed to eschewing segmented sleep as their later European counterparts, either in record or practice, the evidence naturally becomes skewed. Based on the paucity of explicit reports about segmented sleeping patterns, the evidence seems to suggest that members of the upper class wrote about the behavior

151 Ekirch, At Day’s Close, 304.
152 Ibid, 304.
infrequently, similarly to Ekirch’s subjects. This similarity might suggest a disassociation between the practices of the common people and that of the established elite. While such a dichotomy might be true, a substantial difference exists: Ekirch uncovered a superabundance of reports about segmented sleep from the lower classes. Nothing similar exists from the Roman world. We must attempt to reconstruct their world without access to the data Ekirch enjoyed. Still, it seems reasonable to acknowledge that members of the established class had privileges beyond those enjoyed by other people in society.

From this understanding, two consequential conclusions may be made. First, the apparent infrequent direct references by Roman authors does not exclude a culture of segmented sleep, just as sparse mentions in the seventeenth century did not negate the existence of the practice in Ekirch’s study. Second, the upper classes likely establish the minimum expectation for segmented sleep. As found in Ekirch’s study, causes such as artificial lighting meant that the lower classes practiced the pattern more predominantly than the elite. Given the deficiency of sources pertaining to the lower class, we must evaluate them starting with the expectation that their rates of segmented sleep might well have been higher than for the elite.

In some ways, Ekirch’s description of missing reports by the well-off might aid the understanding of Roman sleeping practices. While we cannot say to what degree wealthy members of Roman society likely lived with more access to light than their poor and/or rural counterparts, it seems reasonable to assert that they had more light exposure in general than their counterparts.\textsuperscript{153} Furthermore, the trend of “late hours” among certain circles of the upper classes

\textsuperscript{153} Several factors might influence this, such as: cost of oil lighting, the number of individuals in a household (each with the need for personal lighting), more spacious living quarters requiring more lighting.
is well attested in the record. These two factors mirror facets of life Ekirch reports of the upper classes in his own study. If segmented sleep was a common practice in the Roman world, there exists a strong possibility that the written record resembles the story of post-seventeenth century Europe more than the preceding periods. In other words, Roman authors, like the affluent of the seventeenth century, would likely have been silent on the issue regardless of the predominance of the practice.

**Artificial Light**

Contemporary sleeping habits bear little resemblance to pre-modern ones, primarily due to the impact of artificial lighting on our daily cycles. Because of this discrepancy, ancient historians have conducted their research based on the *a priori* assumption that Roman sleep occurred in the same monophasic block in which our own functions. In terms of research, the effect has been a complete disregard of any attention paid to the investigation of sleep. I outlined briefly the changes lighting has on our circadian rhythms in chapter three, and new research appears regularly. The effects of modern lighting on the modern world and its understanding of normative sleeping patterns is difficult to overstate.

Artificial lighting has not limited its influence in altering the paradigm of sleep only on modern society, however. By the first century CE, the period which this study covers, the Romans had developed a level of civilization unmatched to that point, and thereafter for centuries after the fall of Rome. Access to sources of artificial light (lamps, torches, etc.) would have been ubiquitous, much more so than in a simple hunter-gatherer society (and perhaps

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154 For example, many of the events in the *Satyricon* are heavily influenced by actions taken during late-night parties.
155 See page 20ff.
156 Ekirch also makes a similar sentiment. Ekirch, “Sleep We Have Lost,” 368.
medieval Europe). The upper classes, particularly, would have enjoyed unparalleled ability to surround themselves with some source of artificial light. Naturally, those living in cities would also experience more exposure to artificial sources than those in the countryside. The significance of this has been understandably overlooked, as scientists have only begun describing the effects of such sources of light in the last decade.

New studies indicate that humans are more sensitive to light than previously imagined. In a rather groundbreaking series of studies and review of data, Duffy and Czeisler found unexpected results of the sensitivity of the human brain to artificial light. The applicability to understanding the sleeping patterns of the Romans (and perhaps the class bias of our ancient authors) is easy to note. Their early findings suggested that humans are more susceptible to sleeping changes due to light during their biological night. Furthermore, those changes can occur as quickly as only two days upon entering a new lighting environment. They also found that light sources even as dim as a candlelight can begin to alter the timing of one’s sleep phase, with individuals already accustomed to dim environments being more susceptible to the change.

The implications here are evident. Artificial light sources seem to have been commonplace among the elite of the city, with their existence well attested in both the literary and archeological record. Martial notes that even sleeping slaves often had a lamp nearby. The effect of artificial lighting on the upper classes, including writers, may have put them at odds

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157 I base my reason on several factors. More individuals in a house, slave and master, would have meant more need for light sources. More money gave individuals better access to lighting options and took away incentive to be parsimonious with their use. The existence of heavily decorated rooms in elite housing suggests visibility was important to demonstrate one’s social status, which would mean need for better lighting.

158 Lights accompanying roads, public buildings, insula blocks, etc. would have provided some constant ambient light.

159 Duffy and Czeisler, “Effect of Light on Human Circadian Rhythms.”

with the rest of the population of the city, not to mention the divergence from those living in smaller communities. Most importantly, through their commonplace exposure to artificial light, the upper classes of Roman society may have inadvertently began to shift their sleeping patterns to a routine more monophasic in appearance.

A more monophasic sleeping pattern may account for certain attitudes held by the elite toward sleep. For example, Juvenal’s remark that one must be rich to get sleep due to the noise in the streets may come as a byproduct of the elite’s shift toward a more monophasic sleeping pattern.\(^{161}\) People already awake for a few hours in the middle of the night would suffer less from the exterior noise. Seneca suggests that only those with a truly tranquil mind can experience restful sleep, absent of nightly wakings.\(^{162}\) His remark suggests that nighttime wakings were still routine enough to be considered an issue, but that the expectation of the upper class was to practice a monophasic pattern. The expectation to sleep in a singular block of time might also be why Juvenal notes that the youth have lost their work ethic, and it falls upon fathers to wake their children in the middle of the night in order that they might study.\(^{163}\) The effect of light on the upper classes may have differentiated their experiences from the much larger population of the lower classes both in and, especially, out of the city.

The sleeping changes potentially experienced by the wealthy would necessarily affect the ways in which authors wrote about the subject. Roman writers in the Silver Age were exclusively male. The most commonly identified problem associated with their sex rests with their inability to address the lives of half of the population accurately. Naturally, this pertains to sleep as well. After all, sleep differs between sexes and may help show sociological differences between male

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\(^{162}\) Seneca the Younger, *Epistles*, 56.7; See also Juvenal, *Satires*, 13.218-19.
and female experiences. More important to note, however, in relation to investigating segmented sleep, is the role sex plays in one’s biological reaction to light. Men appear more sensitive to artificial light. According to Thomas Wehr, modern artificial lighting can affect men so much that “when it comes to seasonal changes, they just don’t get it.” Even with modern lighting, women still experience seasonal changes, shifting their sleeping patterns in the winter and being more susceptible to temporary problems such as SAD. Men, however, experience no shift in their routines, seemingly dominated by modern lighting.

**Seasonal Changes**

The possibility that male members of the upper class experienced fewer seasonal changes than other members of society may help determine to what extent the Romans at large underwent similar sociological alterations in response to biophysiological rhythms. As we examined in chapter three, Roman authors were aware of modifying their life to fit the seasons. Interestingly, some of the more notable examples of adherence to seasonal changes withhold any commentary on changing sleeping patterns. Seneca recognizes the need to adapt to the season, but seems unaware of any change in sleep. Persius does likewise in his satire. Yet ample scientific evidence exists linking sunlight and sleep patterns. It seems reasonable to conclude that three possibilities arise: the writers were so accustomed to the idea of a segmented mode in the winter and alternative in the summer they felt no need to elaborate; the pervasive effect of artificial light had aligned their seasonal patterns so that only slight differences occurred; their sleep patterns suffered no changes between summer and winter. This last possibility seems the least likely, with

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164 Williams, “The Sociological Significance of Sleep.”
165 Angier, “Modern Life Suppresses An Ancient Body Rhythm.”
a siesta culture well established, and occurring frequently in the summer months. Furthermore, Pliny’s recognition of his own shift from a siesta to possible segmented sleep suggests some change did occur.\footnote{Pliny the Younger, Epistles, 9.36, 9.40.}

My opinion is that Roman authors, and by extension many of the male elite, experienced limited seasonal variation in their sleep, influenced enough by artificial light to mitigate the differences but not eliminate them entirely. Most of the population in the empire would have undergone more shift in sleep patterns. The Romans likely did not have enough artificial lighting to override natural body rhythms in men completely. Still, Roman authors may have experienced enough lighting to transform their paradigm of sleep enough to make it noticeably different from the patterns of most Roman citizens. It seems plausible that lighting created a situation where the authors of the time experienced later sleep onset, a shift toward a monophasic pattern of sleep, and experienced significantly less seasonal change than others in society.

Seasonal shift might also help to contextualize accounts of sleep disturbances and tradesmen working late night and early morning in the city.\footnote{e.g. Martial, 12.57.} Late-night noise in the summer might occur around twelve, still figuratively the middle of the night to a common Roman who fell asleep earlier in the evening. In the winter, a midnight disturbance would become positively infuriating to anyone who had not switched to a segmented sleep pattern. In fact, if midnight activities intensified during the winter months due to more of the population being active in the middle of the night, the male elite, who may not have made such a drastic change to their own patterns, could have become increasingly agitated at the lower classes and their odd nighttime behavior, helping to shape Roman attitudes toward sleep.
Cultural Attitudes

Our own modern culture holds certain stigmas about sleeping. Leadbeater and Wilsdon note the increasing deficiency of sleep experienced by working adults. In their view, a “macho” working culture stigmatizes sleep as something only “wimps” need to function. In this view, sleep forms a concomitant relationship with work, “intimately bound up with discourses and debates on work time, work ethics and work culture.” How many have experienced the adulation heaped upon co-workers who wearily claim they are functioning on “only 3 hours of sleep”? For many, the dedication to work, indeed any sort of responsibility, at the expense of sleep is a badge of honor, worthy of garnering all sorts of praise. Consider the different patterns our lives may take if society prioritized sleep above work and duty. Imagine your co-worker receiving commendation from your boss after proudly announcing his/her second week straight of full, eight-hour nights of restful slumber.

Decades of scientific sleep observation has demonstrated the intrinsic link between a society’s attitudes and beliefs toward sleep and their ability to alter sleep patterns and quality. For all of our own understanding of this connection, however, borne out in research and our daily lives, the application to the study of Roman sleeping behavior escapes us. The Romans enveloped sleep with a set of ideas and beliefs, undoubtedly shaping the way in which they practiced this nightly occurrence.

The Romans had a somewhat antagonistic attitude toward sleep. That is not to say they had no positive association, however. Sleep was a natural part of the daily cycle, one which

171 Williams, “The Sociological Significance of Sleep.”
172 Worthman, “Toward a Comparative Developmental Ecology of Human Sleep.”
caused little consternation by itself. Undisturbed sleep was a luxury.\textsuperscript{173} Some even looked forward to sleep, viewing it as a sort of companion or lover.\textsuperscript{174} A lack of sleep from mental stress or overwork might cause problems with alertness or even physical maladies.\textsuperscript{175} Their overall impression, however, seems to have been one of \textit{ne quid nimis}. Sleep was perfectly acceptable, undertaken in moderation, occurring at the proper time, and practiced for the correct reason. In short, the Romans had several cultural values they placed upon sleep.

The Romans clearly viewed the night time as the proper time for rest; this idea appears frequently among writings. The natural body cycle may have been the impetus to hold such a strongly correlated view of night and sleep.\textsuperscript{176} Common thought maintained that sleep occur at night, and only in the appropriate portions seen to by nature. Deviation from this schedule and allotment might have been somewhat scandalous. Seneca, rallying against those who keep night hours, appears to sum up Roman thought with a short, rhetorical question: “Do you think they, who don’t know when to live, know how to live?”\textsuperscript{177}

For ancient authors, sleep contained a moral component. Wiedemann identifies the presence of the rhetorical and philosophical theory \textit{temperantia} within the Roman view of sleep.\textsuperscript{178} To remain in self-control, one ought to strive to conquer his natural inclination to sleep more than is needed.\textsuperscript{179} Dowden outlines the complex relationship between wakefulness, a good, morally acceptable act, and sleeping, a necessity.\textsuperscript{180} In his view, conquering one’s natural

\textsuperscript{173} A notable theme in Martial. See: 10.47; 12.18; 4.64; 2.90.
\textsuperscript{174} Martial 1.71; Statius, \textit{Silvae}, 5.4.
\textsuperscript{176} Seneca the Younger, \textit{Epistles}, 122.9.
\textsuperscript{177} Ibid, 122.3. \textit{Hos tu existimas scire quemadmodum vivendum sit qui nesciunt quando}
\textsuperscript{178} Wiedemann, \textit{Sleep}, 131.
\textsuperscript{179} The same may likely be applied to women, though writers were primarily concerned with males.
\textsuperscript{180} Ibid, 141-63.
inclination to sleep was a sign of determination and sedulous attention to cultivating an industrious character. Those who kept too many night hours for illicit purposes, or those who succumbed to sleep too frequently, displayed a lack of character and might even signal themselves to be morally bankrupt.\textsuperscript{181} Juvenal provides a fitting example, suggesting that prolonged sleep, in part, has made the Roman women of his time unruly, unweddable \textit{monstra}.\textsuperscript{182}

The copious stories about the ill actions transpiring in the night should come as no surprise. It was no accident that, when the soldiers revolted against Vitellius, Tacitus includes their nighttime activities as part of their misconduct, describing them as “giving way to indecent revelry, feasting, and nightly gatherings” (\textit{effusi in luxum et epulas et nocturnos coetus}).\textsuperscript{183} Juvenal’s reproachable wives are worst to their husbands at night, when in bed together.\textsuperscript{184} Seneca grumbles about those who refuse to wake up until evening, their eyes full of the previous night’s degeneracy.\textsuperscript{185} Nero’s infamous penchant for vice intensified at night.\textsuperscript{186} Tacitus describes Petronius as a night person, plagued by \textit{ignavia}.\textsuperscript{187} His ascension to fame was accidental, and his personality and waking habits were correlated. Accounts such as these illustrate the Roman’s perturbed relationship with the night.\textsuperscript{188}

\textsuperscript{181} Illicit purposes involved anything outside the purview of work and the cultivation of a diligent personality.
\textsuperscript{183} Tacitus, \textit{Histories}, 4.36.
\textsuperscript{185} Seneca the Younger, \textit{Epistles}, 122.2.
\textsuperscript{186} Tacitus, \textit{Annals}, 15.37.
\textsuperscript{187} Curiously, Lucius Piso seems to have escaped this night curse, carving for himself a respectable career, and the trust of two emperors, despite his tendency to spend most of the night banqueting until extreme intoxication. Ibid 16.18.
\textsuperscript{188} Seneca, \textit{Epistles}, 83.14.
Certainly, by the time of the empire, night was a worrisome subject for Romans, combining their moral objections with a natural human fear of the dark. Everything intensified after darkness fell, and the Romans struggled to conceive of a benign nature to the night. Juvenal notes the many dangers at night, marking it as a perilous time in the city. The night helped to steal away one’s wits, depriving rational thought and assisting one’s gullibility. Night may serve to transform otherwise honorable men into savages. Tacitus indicts the night as a cause for the soldiers’ revolt against Vitellius. Indeed, the night “had removed all shame” from the men. Darkness shaped the way in which people might perceive otherwise innocuous events. Matters trivial during the day became terrible dread at night. The night even became a metaphor for personal struggles, highlighting a bout of depression or bend toward more sinister thoughts.

These views inescapably would have influenced the way Romans practiced and reported on sleep. As noted earlier, a culture’s beliefs and ideas about sleep play a role in their actual sleeping; therefore, Romans, who placed moral and socially charged motives on sleep and held notions of the night’s vaguely sinister influence on people, would likely have undergone an unconscious inducement to alter their patterns of sleep. In other words, an amnesiac Roman living in a remote region of Gaul would almost certainly experience sleep differently from Romans who held such morally infused views about sleep. That same Roman, if asked to write about it, would describe sleep in an altogether different manner from his counterparts.

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189 It seems likely this view was nothing new. Attitudes during earlier periods lie outside the scope of this thesis, however. I mean only to comment that, regardless of the long-term development of these views, their presence is unquestionable by the time of the Silver Age authors.
190 Juvenal, Satires, 3.268ff.
191 Tacitus, Annals, 2.82. He notes how iuvat credulitatem nox.
192 Tacitus, Histories, 4.36. quippe omnem pudorem nox ademerat
193 Seneca the Younger, Epistles, 104.24.
194 Seneca the Younger, De Tranquillitate Animi, 15.
Little exists to demonstrate how widespread views toward sleep were. For instance, did the moral judgments of sleep penetrate class barriers, percolating among the populations of the major political centers and even beyond, into the countryside? Was a rural farmer, already exhausted from a hard day’s work, concerned about the immodest association with nightly activities when the morning would bring another round of arduous labor? As with the discussion about artificial lighting, class division plays a key role in understanding to what extent Roman conceptions of the night and sleep affected various populations. Did some of these ideas even make it beyond the politically motivated males of Rome? The prominent belief that only work was an acceptable reason to be up at night may have only applied to those whose primary concern was establishing a name for themselves in the Roman political world. How much attention did the disenfranchised give toward the propriety of sleep? If these moral views were widespread enough, whatever alteration they induced would have become the normative model of sleep. On the other hand, a lack of percolation would have left the elite with different experiences from their countrymen.

My own view is that few people outside of major political centers around the empire thought a great deal about these issues. Other concerns such as tending to one’s crops or livestock seem likely to have taken precedence over obsessing about the rectitude of sleep — an individual can only carry so many burdens in their head at once. Much like Ekirch’s “common” subjects, who seem to have embraced the culture of segmented sleep as opposed to the more popular late-night revelries and accompanying sleeping patterns of the upper classes, less established Romans probably gave little attention to the thoughts and activities of the elite in respect to sleep. The further one’s position was removed from the urban upper class, the more
likely this attitude held, with those in the countryside being least affected by the ideas on proper sleep decorum established by the Senecas of the world.

The cities likely experienced some shift in their sleeping patterns based on their exposure to the well-documented, ideal model of sleeping behavior. The Silver Age marks a period when Roman proclamations involving the moral implications of sleep are noticeably emphatic. The agitation with which authors like Seneca write suggests the presence of a wider recognition within society, or at least their own peer group. As these ideas gained more traction in society, the accompanying moral underpinnings could have seeped into a more general segment of the population. Feeling a need to eschew their natural predilection toward segmented sleep in order to meet these standards, individuals outside of the elite demographic might have sought out ways to shorten their nights to more manageable lengths appropriate to monophasic blocks by drinking, gambling, or engaging in all sorts of revelry. Such behavioral differences might explain the growing animosity of Roman authors toward those misbehaving and carrying on inappropriately at night. As with many cultural attitudes across time, the Romans paid little attention to the nuances of night activities. Two categories existed: work and indecency. Those outside the upper-classes that did practice segmented sleeping habits, but did not spend their waking hours devoted to “approved” tasks, would become enmeshed with more devious affairs.

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195 It is important to note that much of what we know come from personal correspondences. Others, like Quintilian, wrote with the target audience of members of the upper classes. Still, the quantity of works and the passion with which the authors write seems to indicate that such sentiments were not isolated to a few individuals, but instead represented a shared and, more importantly, recognizable viewpoint.

196 At least from the point of view of Roman authors. Importantly, the elite worked at night; the rabble partied.

197 Exactly when these Roman views on sleep began is difficult to say. It remains extremely unlikely they started after the Augustan age. An in-depth study of opinions concerning sleep of preceding periods lies outside the bounds of my research. At the least, I feel comfortable stating that the emphasis placed upon these ideas by Roman authors is stronger during the Silver Age. I think that the stress shown by authors during this period would garner attention from the wider public is a likely possibility. In modern parlance, sleep was trending in the Silver Age and the population would have taken notice.
in the elite authors’ eyes. Combined, the integration of these two behavior sets would create a situation in which, while the actual numbers of people deciding to stay awake later into the night increased slightly, the reports of “nightly indecencies” would skyrocket, as opposed to the assignment of segmented sleeping patterns.

**Insomnia**

A deeper understanding of insomnia might help to provide more recognition about the presence of segmented sleep among the Romans. In modern culture, full of its own notions and beliefs about sleep, insomnia remains an important topic of study. Our current knowledge of the subject may help to inform its role in Roman society. Experts typically divide insomnia into two categories: primary, where no causes are associated with the condition, and secondary, in which a triggering cause is apparent. Causes for secondary insomnia can amount to anything that may cause sleep loss, including stress, diet, bad dreams, etc. Whether the Romans understood the difference is debatable. Caligula suffered from insomnia, which a conservative reading of Suetonius would classify as primary. The Elder Seneca notes that worry can cause insomnia, which would be classified as a secondary type in today’s literature. But the division may not be so clear. In the *Thebaid*, Tydeus wanders the halls at night, stressing about the burdens of kingship. Poetical, yes, but what excludes Caligula from being weighed down by the burdens of his own rule? Should we take Suetonius’ description of Caligula suffering a primary form of insomnia at face value? More than a few commentators have remarked on possible explanations for Caligula’s insomnia, loneliness, or mental insanity being a prevalent theory. The causes of

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199 Seneca the Elder, *Controversiae*, 7.3.8.
201 A recent master’s thesis also argues this: H. Frude, “Use and Perception of Night in Suetonius’ De Vita Caesarum,” 38. She also quotes Hurley (1993) to reinforce the notion of loneliness.
insomnia appear hard to pinpoint. Although ancient writers were keen to assign a reason to the condition, their assessments merit caution.\textsuperscript{202}

In addition to the different causes of insomnia, different types of insomnia also exist. In one study, about twelve percent of those who reported sleep problems reported themselves to have delayed sleep phase disorder, in which a person goes to sleep and wakes up later than normal.\textsuperscript{203} The primary culprit is most often artificial light, based on the effective treatment of melatonin supplement combined with light therapy.\textsuperscript{204} While modern populations undoubtedly experience the effects of artificial lighting to a greater degree than the Romans, I earlier provided good reason to believe the Romans themselves suffered unintended consequences of their own light sources. The numbers may not have reached as high as twelve percent, but even a single digit percentage of a city as densely populated as Rome would have become noticeable. The implication becomes evident when considering Roman attitudes toward sleep. Given their strong moral views on proper sleeping habits, could it be that Romans might have miscategorized those suffering from insomnia and sensationalized their activities? In a society in which the elite writers equate untimely waking activities with moral degeneracy, those suffering from a delayed sleep phase disorder might be labelled as troublemakers, awake on account of their moral failings or character defects rather than a medical condition.

While accounts of insomnia certainly exist in ancient literature, the number seems proportionally underrepresented. The CDC estimates that roughly one quarter of all American adults suffer from some form of insomnia.\textsuperscript{205} Earlier, I remarked how one-third of the UK

\textsuperscript{202} In some cases, such as Suetonius and Caligula, “that’s just how he was” is the reason.
\textsuperscript{203} Falloon et al., “The Assessment and Management of Insomnia in Primary Care.” (with original study link)
\textsuperscript{204} Ibid
\textsuperscript{205} “Insufficient Sleep Is a Public Health Problem,” Centers for Disease Control and Prevention, September 03, 2015.
population reports suffering from insomnia. The statistics of insomnia among the Romans remain impossible to gauge, but given the sizable percentage of people suffering from insomnia in modern society, it seems entirely plausible to imagine a higher rate than what appears in literature.

Other factors would also help strengthen the idea that insomnia was more widespread among the Romans than we might think based on ancient sources alone. One Swedish study concluded that floor dampness shows a significant association to the prevalence of insomnia. Roman houses and apartments, with minimum shelter from the outside elements, were likely quite prone to year-round dampness. Moreover, women, a demographic already underreported in ancient sources, suffer from insomnia at higher rates than men. As noted in a study performed in Taiwan, this difference between the sexes exists across countries and cultures. The study attempted to determine whether sociological factors could explain the higher rates of insomnia among women. They determined that controlling for social roles only helped reduce the rate of insomnia slightly. Socioeconomic status did not explain the discrepancy between the sexes. Women in Roman society probably suffered from insomnia at higher rates than men, reinforcing the idea that the condition was perhaps underreported.

Modern society itself has succumbed to the misrepresentation of insomnia, most notably in the case of segmented sleep. Modern psychiatrists and sleep researchers are becoming increasingly aware of the trend of misdiagnosing patients waking from their “first sleep” with

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207 As is well-known, many houses were purposely left open (i.e. impluvium).
208 Ying-Yeh Chen et al., "Can Social Factors Explain Sex Differences in Insomnia? Findings from a National Survey in Taiwan," *Journal of Epidemiology and Community Health* (1979-) 59, no. 6 (2005), 488.
209 Ibid.
insomnia. These situations seem almost interchangeable with a Roman citizen of the first century CE and provide a possible interpretation of some accounts of insomnia. In short, the person in question wakes up routinely in the middle of the night. As midnight wakings are supposed to be abnormal, this person becomes increasingly frustrated at his or her inability to fall back asleep immediately. The stress prevents any sleep from occurring, both for the rest of that night and long-term. In the present day, this patient sees a sleep professional and complains about routinely waking up in the middle of the night. The doctor assesses them as suffering from insomnia and treats it as such. In antiquity, the person would likely lie in bed or wander the halls bemoaning his/her rotten luck, wishing for daytime. If that person is an emperor or someone else of note, some authors are likely to record this peculiar behavior.

Naturally, such investigation would be unneeded if insomnia were a simple term, easily understood. Unfortunately, the opposite appears to be the case. Robert Getty investigated the meaning of *insomnia*. Its use is often confounding, with the second declension plural and first declension singular often being ambiguous. He tracked the meaning of the word through time, suggesting that, by the Silver Age, *insomnia* had picked up two new possible meanings: “dreams” and “waking up from a dream”, with a possible third: “being awake”. The confusion presents a challenge when assessing how Romans used the word. For example, if more writers in the Silver Age employed Statius’ meaning, describing those who had just woken after a dream, that could signal a momentous shift in our understanding of Roman insomnia as it relates to

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211 Robert J. Getty, "Insomnia in the Lexica," *The American Journal of Philology* 54, no. 1 (1933), 17-23. Specifically, Getty claims “dreams” is unique to Pliny Elder, and “waking visions” is occasionally meant. Statius uses it to mean “waking from a bad dream” or, perhaps more generally, “being awake”.  

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segmented sleep. At minimum, the expanding meaning of *insomnia* in literature indicates the Romans themselves were increasingly understanding these meanings of the word.

Ekirch notes the references to those in his own study who awoke fresh from their dreams.\(^{212}\) Moreover, he also suggests that because of the tranquil nature of those waking hours and the ability to reflect on one’s visions accordingly, segmented sleep played a paramount role in dream dissemination in literature, an intriguing theory if applied to Roman authors.\(^{213}\) The argument would state that the quantity of reports we have concerning an individual’s dreams would only have been possible had Romans practiced segmented sleep. Some scientific evidence exists to support the notion that waking from a dream in the middle of the night is a normal part of a segmented pattern. Clinical studies performed by Wehr reported that participants who fell into a segmented pattern often experienced REM sleep (associated with dreaming) immediately before waking.\(^{214}\) Ekirch quotes Wehr as testifying to the propensity for subjects to wake after “especially intense periods [of] vivid dreams”.\(^{215}\)

Insomnia is difficult to address in its relationship to segmented sleep. The Romans might have mislabeled cases of insomnia, attributing the condition based on their cultural attitudes toward sleep, providing us with an inaccurate look at their actual sleeping habits. But to what extent did they classify segmented sleeping patterns as insomnia? And to what extent did they attribute insomnia to rotten behavior based on cultural notions of sleep? I believe a targeted work, focusing on insomnia and its relation to segmented sleep, would make a worthwhile study.

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\(^{212}\) Ekirch, *At Day’s Close*, 311-312.
\(^{213}\) Ibid, 322.
\(^{215}\) Ekirch, *At Day’s Close*, 323. Dreams at night are a common *topos* in Roman literature.
Leveraging our recent progress on the understanding and classification of insomnia might serve to delineate the numerous questions surrounding this issue.

**Lucubratio**

*Lucubratio* helps establish the fact that some Romans gave part of the night to work. In short, the term refers to the habit of Roman authors to study and write at night by the light of a lamp. Ker identifies a *topos* among Roman writers in which the practice of *lucubratio* helps display them as self-effacing and hard-working, and it may have helped boost their position in the eyes of their audience.\(^{216}\) The transmission of lucubration was an important component in an author’s attempt to demonstrate his dedication to providing his best work for his audience. Ker also groups *lucubratio* with other nocturnal activities taken up by Romans to live a life of proper frugality, and he places it in the larger conversation about Roman views on the proper uses of night hours.\(^{217}\) The fact that *lucubratio*, and the nighttime-work culture in which it resides, is so well established provides its most frustrating aspect: we still have no idea when in the night these customs occurred. We are often stuck with tantalizingly vague references, such as Martial’s taunt about writers wasting their time *media nocte*.\(^{218}\)

The traditional interpretation seems to be that *lucubratio* took place either immediately after dinner, before sleep, or before breakfast, after the night’s sleep had concluded. Nissin supports this view, stating that a night’s sleep could be postponed on account of *lucubratio*.\(^{219}\) In my opinion, however, this timing presupposes the notion of a monophasic sleep pattern. Rather, the evidence makes it incredibly difficult to pinpoint any particular timing of *lucubratio*. In fact,

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217 Ibid, 217ff.
218 Martial, 8.3.
219 Nissin, “Sleeping Culture in Roman Literary Sources,” 119.
Pliny’s description of his uncle’s style of lucubration directly contradicts Nissin’s model of prolonging the hours before sleep.

*Lucubrare Vulcanalibus incipiebat non auspicandi causa sed studendi statim a nocte multa, hieme vero ab hora septima vel cum tardissime octava, saepe sexta. Erat sane somni paratissimi, non numquam etiam inter ipsa studia instantis et deserentis.*

Beginning after the Feast of Vulcan, he worked during the night²²⁰, not to gain an advantage on the next day but to give himself more time to study.²²¹ In the winter he often rose at midnight or perhaps an hour later, but by two at most. He could fall asleep easily, and would frequently nod off and wake back up in the middle of his work.²²²

In my view, a case may be made that it was just as likely that *lucubratio* took place during the time coinciding with rising after one’s first sleep as it would in the more traditional pre-sleep period. Quintilian notes that the silence of the night makes *lucubratio* ideal for the serious work of writing.²²³ He also notes that the practice is best when we approach it fresh, rested, and with a peaceful mind.²²⁴ Tackling work with a rested mind seems to preclude the theory that *lucubratio* is best practiced before sleep. Note that this advice also corresponds nicely with Ekirch’s research, highlighting people’s views of engaging in nightly conduct with rested, tranquil minds.²²⁵ In addition, what better time to make use of the silence of the night?²²⁶ Therefore, I must conclude that, based on our current understanding, we have no way to determine whether a typical time for lucubration existed. In my view, the evidence suggests that it is just as likely that *lucubratio* was

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²²⁰ B. Radice here has “by lamplight”.
²²¹ Radice includes “[he] would rise half-way through the night”;
²²² Pliny the Younger, *Epistles*, 3.5.
²²³ Quintilian, *Oratoria*, 10.3.25.
²²⁴ Ibid, 10.3.27-28.
²²⁵ See: Ekirch, *Sleep We Have Lost*, 304, 371cf; *At Day’s Close*, 305cf.
²²⁶ Also noted in Ekirch with references to the time after first sleep as the most private and secluded available. *Sleep We Have Lost*, 372-73.
an activity practiced in between sleep phases as it is that it was an activity reserved for those times before or after a single block of sleep.

*Lucubratio* might provide some of the best evidence for or against segmented sleep. Moreover, the culture of nighttime habits in which the custom exists would be of immeasurable value to our understanding of Roman sleeping patterns. Unfortunately, no such study exists. Previous scholarship on *lucubratio* presuppose the notion of a monophasic sleeping pattern among the Romans. Such an assumption affects how an author views the custom when looking at the data. I think a study of *lucubratio* and its relationship to a culture of segmented sleep, approached from position void of assumption about Roman sleeping patterns, would help elucidate sleep among the Romans.

**Bedrooms**

So far, our approach to determining a pattern of segmented sleep has rested largely on the literary evidence. When dealing with the material world, one question plagues my mind: “What would a house or bedroom look like for those in a segmented sleeping culture?” \(^{227}\) The honest, simple answer is that no one knows. In fact, there remains the possibility that a distinction in surroundings between monophasic and polyphasic sleepers does not exist. The physical evidence of the areas in which Romans slept remains inconclusive in helping to determine the presence of segmented sleep.

As noted earlier, a Roman *cubiculum* was mainly for rest and other bed-related activities. \(^ {228}\) As Nissin argues, the *cubiculum* was an essential component to providing privacy, comfort and

\(^{227}\) This question was first posed by my thesis advisor, to her credit, and my consternation.

\(^ {228}\) Nissin, “Cubicula Diurna And Nocturna,” 88.
security in a Roman’s life.\textsuperscript{229} Because of the possibility for this privacy, the \textit{cubiculum} was the ideal place for \textit{lucubratio}. While this identification does little to help establish a sense of sleeping patterns, it does at the minimum continue a narrative about how Romans used their rooms and what activities they enjoyed in the confines of these spaces.

At least one example in the archaeological record suggests that these rooms may have doubled occasionally as a study, with a bench, chest, and wax tablets found on the first floor of the \textit{Casa del Sacello in legno} in Herculaneum.\textsuperscript{230} Furthermore, it appears that at least some rooms contained storage for personal items, corroborating a view about the multi-functionality of rooms.\textsuperscript{231} It seems likely that a normal room consisted of more than just a sleeping area, as Tacitus suggests that one missing-person investigation was able to determine that some commotion had taken place in the bedroom before the disappearance.\textsuperscript{232} Such findings seems unlikely without the existence of fixtures and objects beyond a simple bed.

Unfortunately, as noted earlier, the identification of bedrooms remains problematic. Differentiating among specific rooms in a house based on the archaeological evidence still eludes us. Adding to the confusion is that Romans seem to have enjoyed separate rooms for day and night use when they could. Pliny notably describes one of his bedrooms at his villa in Laurentum as being a \textit{cubiculum noctis et somni}.\textsuperscript{233} What to make of his description about a room for “night and sleep” is unsure. Whitton suggests Pliny’s description is simply meant to describe tranquility and is simply a use of a common pair found in Latin poetry.\textsuperscript{234} Whether this is hendiadys, suggesting

\textsuperscript{229} Nissin, “Roman Sleep.” The concept of a Roman private life is one of her central arguments.
\textsuperscript{231} Pliny the Younger, \textit{Epistles}, 2.17; Tacitus, \textit{Annals}, 15.55; Suetonius, \textit{Augustus}, 73.
\textsuperscript{232} Tacitus, \textit{Annals}, 4.22.
\textsuperscript{233} Pliny the Younger, \textit{Epistles}, 2.17.22.
\textsuperscript{234} Christopher Whitton, \textit{Pliny, the Younger : Epistles Book II}, (Cambridge Greek and Latin Classics. 2013) 248.
night sleep as opposed to a nap, or demonstrates the intriguing proposition that Romans had special rooms *noctis et insomniae* is unclear. Our current ability to identify rooms accurately is too inadequate to make any determinations about segmented sleep. As archaeological knowledge about bedrooms increases, a broadening of our understanding of the differences between the bedrooms of monophasic and biphasic individuals would be a worthy study. A future convergence of these two areas would help explain much about the sleeping habits of the Romans.
Chapter 5: Final Thoughts

Synthesis

As we have seen, identifying the existence of segmented sleep is no easy task. The direct evidence for is lacking, but so is the evidence against it, which frustrates any attempt to ascertain an answer. Furthermore, previous studies on issues surrounding sleep provide little help because they were written without the insight into the historical significance of segmented sleep, and, consequently, assume the existence of a monophasic sleep culture among the Romans. For instance, Dupont’s *Daily Life in Ancient Rome*, once considered a seminal work in the field, has exactly one paragraph dedicated to sleeping habits, which reads as follows:

As night closed in, the time of leisure and bodily relaxation came to an end. Sleep acted as a transition, preparing men for the renewed stresses of the early morning. A bout of insomnia or a banquet that continued too late into the night could be very damaging to one’s health. Sleep afforded the soul a measure of tranquility and allowed the body to regather its strength. Those plagued by a bad conscience, whose souls were troubled by remorse, regret, and worry or longing, or who dwelt too much on the past or the future, would not get much sleep. Eventually they would fall ill as surely as those who woke up every time there was a noise in the street. They would grow exhausted and their bodies would disintegrate.235

Here the term “sleep” carries with it a host of connotations, all wrapped up in the single hidden meaning of “monophasic sleep”. For Dupont, indeed for nearly every historian who has covered the subject, the notion of sleep existing in anything but a single block seems antithetical

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to reality. And who could blame them? The mere possibility of a segmented pattern only came to light a little over a decade ago.

The paucity of direct evidence is certainly one reason to believe segmented sleep was not common among the Romans. On the one hand, scarce evidence stands as a perfectly reasonable justification explaining why historians have often overlooked investigation in this area. On the other hand, I think it fair to assert that the Romans were certainly aware of sleeping patterns we would identify as segmented and that at least some Romans routinely held to such habits.

Nissin, in her holistic study of Roman sleep, provides an abbreviated examination of biphasic sleep. Based on her study of *concubia nocte* and similar terminology, she concludes that “the segmented nightly sleeping pattern was not an established Roman sleeping practice but the Roman sleeping culture was biphasic, consisting of two main divisions: the midday siesta and one period of sleep at night.” In my view, a deeper examination begins to form a picture of potential Roman sleeping habits that contradict her assessment.

The scientific support for segmented sleep among the Romans remains strong. Numerous studies have demonstrated the ease at which the human body reverts to a segmented sleeping pattern once modern lighting is removed. Furthermore, the well-established link between sunlight and sleep onset provides strong evidence that Romans felt the inescapable biological push to follow more natural sleeping hours, coinciding with the timing established in studies on several pre-modern societies. The time of day sleep onset occurred, typically between one to three hours.

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236 To highlight the point, Dupont’s next section on seasonal rhythms includes no mention of the change of sleeping behavior.
237 E.g., Pliny the Elder during the autumn and winter months.
238 Nissin’s dissertation was accepted only three months prior to the time of this writing. Therefore, she provides the most current, and thorough, view of segmented sleep to date.
239 Nissin, “Roman Sleep,” 50.
after sunset, would vary widely due to the changing of the seasons; the Romans never inhabited the tropics, where segmented sleep patterns are more difficult to establish. Nighttime in winter, often well in excess of twelve hours in those places occupied by the Romans, would be far too long to sleep through entirely.

While science gives us strong reason to believe segmented sleep was commonplace among the Romans, we must also examine the cultural aspects of sleep. Ekirch notes that the growing social trend of holding late-night gatherings created a divide in the sleeping patterns between the rich and poorer classes. Banquets and evening social calls were popular with the elite in the first century and may have played a role in separating their sleeping habits from the majority. Many elite began their day around sunrise or shortly before. The timing of a later night and earlier morning in a single block does not exclude the possibility of segmented tendencies even for the elite. In fact, as Ekirch notes, apparent monophasic sleep experienced by those who went to bed later may still have been a biphasic schedule sans their second sleep.\textsuperscript{240}

Artificial lighting possibly contributed the greatest influence on any potential adjustment to the elite’s sleep schedule. Even dim sources can affect a person’s circadian rhythms and shift their biological night back some time. Those in the upper classes would have found it difficult to escape the presence of artificial light; in my opinion, that sleep onset among the upper classes was later than in the majority of the population is unquestionable.\textsuperscript{241} The influence of artificial light would have been too great to overcome. In addition, many in the upper class filled that extra time by making investments into their social position through banquets or fulfilled the ideal Roman

\textsuperscript{240} Ekirch, \textit{At Day's Close}, 301. He notes that the later the time of initial sleep, the later the waking time was pushed back. When delayed long enough, the waking time coincided with morning. Still, these people were following the same normal schedule as if on segmented sleep, and fell back into such a routine with an earlier bedtime.

\textsuperscript{241} See section 4.3 beginning on page 37 concerning the existence and effects of artificial light.
moral obligation for industrious behavior, giving them little incentive even to desire to seek an earlier bedtime.

The culture of nightwork remains an aspect of Roman life understudied and possibly misunderstood. The art of *lucubratio* is well established and seems to have had many practitioners. But *lucubratio* constitutes only one behavior in the culture. For example, the *recognitio* was a daily habit performed by farmers whereby they would inspect their equipment and ensure their tools were unbroken. It was an essential part of the farmer’s routine, and might have been done at night. Night activities may have been conducted in the interim of first and second sleep. As noted by Ekirch, such productivity was not uncommon among societies with a precedent for segmented sleep. Whether these nightly activities embody a culture of biphasic nightly sleep is undetermined; they do not, however, preclude this idea, as often seems to be the case. In my view, a nightly work culture among the Romans suggests a tendency toward segmented sleep based on the similarities of the type of descriptions with the more demonstrable habits of later Europe.

The connections with Ekirch’s work are important because they provide a criterion by which to examine the Romans. The similarities between night descriptions in pre-industrial Europe and first-century Rome does not, by itself, prove anything. But the commonalities might help to form a better understanding of the vague references in ancient literature by providing a more comprehensible context than our own contemporary culture can. At the minimum, these shared

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242 Columella, *De Re Rustica*, 11.1.20-21 for the work of the *recognitio*. Gratitude to James Ker and his essay on *lucubratio*, without which I would be ignorant of the *recognitio*, its role as a night activity, and this reference. In perhaps the most salient example, the Augures also took their signs at night, either immediately after midnight or at dawn, corresponding roughly with the times often associated with after first sleep and second sleep, respectively. By the imperial age, however, this practice had gone out of fashion and, therefore, plays little part in this thesis.

243 Ekirch, *At Day’s Close*, 305cf, notably farmers at work.

244 See page 31 for the differences in tropical vs non-tropical latitudes.
portrayals demonstrate the possibility that tasks we tend to think of as too laborious to undertake in the midst of a midnight waking fugue, such as study or the tending of livestock, were perfectly reasonable for an individual between first and second sleep. The evaluation of men beginning their workday in the middle of the night made by previous historians could have come about by a misreading of nightly activities, taken up during the few hours of wakefulness experienced in the “middle of the night” by those on a segmented sleep schedule. The paramount importance of these parallels is the elimination of any preconceived ideas about Roman sleeping patterns being monophasic, based on assumed limitations of a segmented schedule.

I conclude a nuanced view of segmented sleep in the Roman world. The upper classes residing in the city are least likely to have fallen into a segmented pattern. The presence of artificial lighting, as well as the influence of their strong cultural attitudes, would have created an impetus to move to sleeping patterns more identifiable as monophasic. I believe that segmented sleep was still not rare, perhaps even not uncommon. The established elite seemed aware of such patterns and were possibly already accustomed to a biphasic pattern based on the existence of summer siesta culture. The changing seasons and long winter nights likely brought about the adjustment of more than a few individuals’ sleeping behavior to a segmented pattern. To what extent, however, is impossible to say. Ultimately, it seems likely that a single block of nightly sleep was more routine than two divided segments.

As one moved down the social ladder, particularly in economic terms, the more likely one was to practice segmented sleep, with the winter months showing a strong likelihood of the

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245 See page 23.
246 See page 31 concerning whether Romans actually napped during the siesta.
247 In other words, an observer would be more likely to note the absence of a segmented pattern if they took a random elite Roman on a random night of the year and observed him/her for a week.
behavior.\textsuperscript{248} Still, some may have resisted this call, instead finding ways to fill their nights with other activities, to the perturbation of those in the highest echelons of society. Artificial lighting would have been less typical, and the drive to fulfill Roman notions of studiousness diminished, allowing more natural rhythms to set and less inclination to fight them.

Leaving the cities for the more rural areas, I find it likely that sleeping patterns would follow more natural rhythms. Such populations would find an assortment of possibilities to occupy the time, not unlike those documented by Ekirch. Seemingly insignificant ideas like co-sleeping being more commonplace in the countryside than the city might help to affirm this idea. Couples might lie in bed and talk or engage in sex between sleeping phases, unassailed by apprehension caused by cultural attitudes. The farmer might make his nightly inspection of farm equipment. I see little reason to suggest that those away from the urban centers of Rome would not display a marked propensity to follow more natural physiological rhythms of sleep.

\textbf{Limitations of This Study}

I have looked primarily at the literary sources during the Silver Age, roughly corresponding to the years 20 – 130 CE. The scope of Silver Age literature has given me enough fuel to begin a comprehensive examination concerning the existence of segmented sleep. Furthermore, many authors during this period focused on matters pertaining to daily life in the empire, which is vital in this study. On the one hand, the volume of literature alone necessitated me placing some limitations on my selection of authors.\textsuperscript{249} After adding the need to research the scientific

\textsuperscript{248} See page 20.
\textsuperscript{249} See section 3.1 about other considerations.
undertaking of the issues, the archaeological evidence, and specific topics such as insomnia, the
breadth of my study felt overwhelming.

On the other hand, I have frequently felt that I have restricted the area of discussion too
narrowly. My most persistent feeling has been a sense of being on the verge of a more thorough
understanding of the topic and certain resolution to the issues, only to hit a wall and feel that some
answer lies just out of reach. I feel stymied due to the limited nature of assessing only Silver Age
material. In the future, I would like to open the period of study further, or, rather dauntingly, to the
entire one-thousand-year history of Rome. An expanded query would undoubtedly help shed more
light on the issue of segmented sleep.

While I read a great deal of literature from the Silver Age authors, I did so in translation.
Although I checked the data I felt applicable to my study with the Latin and feel confident in my
overall assessment of the literature, reading more of the works in the original language would be
preferable. Moreover, reading several authors in a short time comes with complications of its own.
As Getty demonstrated, each author uses vocabulary in a slightly different way. Each writes from
a slightly different perspective and has a different agenda. Applying a similar standard to all
authors might cause some problems while studying a topic as nuanced as segmented sleep. A
resolution might entail experts of each author assessing the topic of segmented sleep, using only
the Latin, and applying a deeper understanding of that author to the data.

I have attempted to include applicable archaeological evidence where appropriate.
Archaeology is not my area of expertise, however, and I have no doubt a seasoned archaeologist
might find this area of my investigation lacking. While our understanding of the material evidence
of sleep and nightly culture is limited, it is an expanding field. Here again, a more targeted look
conducted by experts in this topic would buttress my work.
Our understanding of some aspects of Roman culture remains limited, having repercussions on my study of segmented sleep. For example, urban Romans, especially those in the upper classes, may have slept with their spouses more infrequently than those outside the city. But what were the underlying reasons, if such behavior is true? Was it related to the differences in urban and rural life, or attributed to class division? Likewise, how widespread were Roman cultural attitudes about sleep? And to what degree did the male population’s military service, and training to keep different watches of the night, affect their sleeping patterns? Answers to these questions would help clarify a great deal about segmented sleep.

Our somewhat limited understanding of different levels of Roman society has left me with an abundance of unanswered questions, frustrating my study. For example, the issues of class and sex division, as well as the contrasts between rural and urban life, are among the most difficult factors to assess. My goal has been to assess segmented sleep as it pertained to the entire population of the empire. As is naturally the case in the ancient world, our evidence seemingly restricts knowledge to the upper classes. Furthermore, Roman cultural attitudes of the first century invited disparagement of disenfranchised members of society, such as women, the poor, and rustics. Therefore, it can be difficult to determine the truth when attempting to ascertain the behavior of these segments of society. The biggest questions in my view concern established Roman attitudes toward sleep. How far did their attitudes extend and how deeply entrenched in society were they? Were these the attitudes of the majority of the population, or only a select minority? I hardly see a farmer sitting down to analyze the Stoic tradition of proper sleeping habits after a long, grueling day in the field. Similarly, it seems unreasonable to expect individuals to conform to an ideal they

250 See section 2.2.
probably had little notion existed. While the proper division of time and laborious effort circulated through the upper echelons and politically connected circles of society, the majority of poor and/or rural citizens might have missed the memo completely. The answers to the questions of how pervasive Roman attitudes toward sleep were would greatly shape our understanding because of the effects on people’s behavior. My feeling is that these were not as important to those on the outside of the political spectrum, where one’s public image was less of a concern. We can not know for certain at present, with the views espoused belonging exclusively to the male elite.

What to Gain

Finally, I have left the section dealing with the importance of this study for the last in hopes that readers may discover it on his or her own accord. But I would be remiss not to mention the thoughts that motivated me to continue in the pursuit of this topic. In its most simple form, the study of the sleeping patterns of the Romans is important in the same way that the study of any topic of any culture is important: in order to form a complete picture of a culture, we must study every aspect.

George Steiner rightly claims that histories of sleep are “as essential, if not more so, to our grasp of the evolution of mores and sensibility as are the histories of dress, of eating, of child-care, [and] of mental and physical infirmity…” The sleeping patterns of the Romans would have determined their nightly habits, particularly during the long, winter nights. In turn, these would influence their daytime lives. As the months lengthened through the autumn, it is increasing difficult to fathom the Romans sleeping through most of the night. There had to have been several

251 That is to say, establishing a method by which a rural farmer in, say, Etruria would be exposed to Stoic philosophy of proper sleeping habits is difficult.
hours they spent awake, either before they slept, after they slept, or between sleeping phases. While these differences might seem insignificant at first, each time might accompany a distinct set of behaviors. Ekirch records little discussion concerning eating and merrymaking from those between sleeping phases, noting that for most it was a time of reflection or gentle discussion with a spouse.\textsuperscript{253} Likewise, several Roman authors discuss the joy of nightly banquets extending into the night. Early morning, as demonstrated by authors like Martial, was a chance to get a fast start on the day’s business, particularly fostering the \textit{patronus-cliens} relationship. Specific times of the day were more closely associated with specific routines than is true in contemporary culture. Because these actions would have occurred routinely enough to have been a habitual aspect of life, they would have been just as influential on the Roman identity as any day-time ritual. Establishing their sleeping patterns would help historians unlock their nightly habits and, by extension, would gain insight into the Roman worldview.

A specific example comes from the common assessment that Romans lived in a society where the public persona was paramount. Dupont characterized the population by stating that “only the outward man existed”, claiming that the Romans were incapable of “psychological inwardness or introspection.”\textsuperscript{254} Such a depiction is widely found among historians. Let us suppose that the Romans did practice segmented sleep, however. How accurate would this analysis be? Suppose most Romans woke up in the middle of the night, for at least half of the year, and did nothing more substantial than talk with their spouse, do some light cleaning, write, read, meditate, pray to the gods, or quietly ponder their lives. Very few of them undertook any project designed to gain them fame or recognition, with most committed to tasks so mundane almost no one cared

\textsuperscript{253} Such actions were not impossible for those on a segmented pattern, just as pre or post-sleep meditation was not unknown to monophasic sleepers, but they did not seem to be the norm.

to comment on them. Are these the actions of a people who “knew nothing” of introspection and “were never alone”? On the contrary, I think it demonstrates a profound duality in the Roman mind: the outward achiever, constantly striving to prove his worth as a *civis*, and the father and husband who shows great care in the small acts that benefit his intimate inner circle and family. I find that an alteration of a Roman’s sleeping patterns may have significant ramifications on our evaluation of their mindset.

As discussed in chapter one, a primary reason sleep has never garnered attention is the modern assumption that sleeping habits are uniform throughout time. If the Romans practiced a different sleeping pattern from ours, that demonstrates the historian’s projection of his or her own experiences onto the Romans bears caution. Perhaps we should not assume the Romans were like us in action, regardless of how insignificant the behavior might seem. A distinct difference in our sleeping culture might be only one of several instances where we have simply projected our norms onto Roman customs. After all, if something as commonly accepted as normative sleeping patterns were different, what else might we be missing?

Finally, the fact is that a society’s night culture is as distinct as its day culture. Indeed, as Williams points out, sleep necessitates its own culture: “Sleep, like waking life, is woven into the very fabric [of] our everyday or every-night lives, and is socially managed, scheduled and institutionalized in various ways.” Roman sleep would fit into a larger puzzle, comprising only one aspect of their night culture. Moreover, as I stated above, their sleeping pattern would irrevocably change their behavior, which would invariably alter their nightly lives.

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255 Ibid, 10-11.
256 I have used the elite man as an example here as a parallel to Dupont’s assessment. The same may be applied to women and other demographics of society.
In this study, I have attempted to ascertain the answer to one part of Roman night culture. I hope to spark a growing interest in this neglected field of study and encourage others to keep the possibility of segmented sleep in mind when examining Roman daily life. My study explored a limited segment of Roman history, leaving open many opportunities to broaden the goals of this thesis. I have also provided numerous avenues for future research. With luck, this small seed will develop into a major topic for academic study.
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Ancient Sources in Translation


