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Sleeping, napping and staying up: the meanings of sleep among college students

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SLEEPING, NAPPING AND STAYING UP:
THE MEANINGS OF SLEEP AMONG COLLEGE STUDENTS

by

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Abstract

Throughout public discourse, sleep, despite being a physiological function and an important facet of an individual's health, is frequently utilized as a rhetorical device to comment on an individual's productivity within society. As Antje Richter (2003:34) explains, to consider someone early to rise yet late to bed is less a comment on their sleeping behavior and more an assessment of their dedication to their business. Too often productivity is conveyed as existing in the absence of sleep, an idea that has contributed to the association of sleep with laziness (Yi 2003:60) and a general misuse of time (Richter 2003:36). The purpose of this study is to explore the relationship between sleep and personal perspectives of productivity within a college population. Utilizing in depth, ethnographic semi-structured interviews, and working with 25 college students from the University of Central Florida, it was found that the standards and expectations students have internalized regarding their productivity are influencing the way in which they are practicing in their daily sleeping behaviors and ultimately influencing the amount of sleep they get each night.

Dedications

For Mr. Steven deZwart – thank you for believing in me all those years ago.
I hope I've made you proud.

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I wish to thank my professors, Dr. Joanna Mishtal, Dr. Matthew McIntyre, and Dr. Fernando Rivera for their contributions and guidance through the research process. Dr. McIntyre, thank you for helping me identify my research focus and pointing in me in the right direction. Dr. Rivera, thank you for the additional resources you have provided and the alternative perspectives you have contributed along the way. Thank you Dr. Mishtal for agreeing to be my thesis chair, for guiding me through each step and for helping keep me on track. Thank you Dr. McIntyre and Dr. Rivera for serving on my committee and for the insights you have provided in these roles.

To my friends and family, thank you for keeping me grounded when my research got the better of me.

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Chapter One: On the Anthropology of Sleep

"Issues concerning sleep and the night have nearly always been taken for granted

and considered natural phenomena as solid and eternal as the weather and the

wind…. Why is there such a strong case of night blindness in the fields of

sociology and anthropology?"

- Brigitte Steger and Lodewijk Brunt, Night-time and Sleep in Asia and the West,

p. 2-3

Despite theoretically lasting a full third of normal human life, sleep has been generally ignored

by anthropological scholarship throughout its history as a discipline. Few examples of exploring

the subject exist within the field, and, as Josef Kreiner (2003:ix) explains, they are primarily

concerned with sexuality – such as Bronislaw Malinowski's research in the Trobriands, or

Friedrich Krauss's research in Japan. According to Brigitte Steger and Lodewijk Brunt (2003:3),

"hardly anyone… has thought it worthwhile to consider night-time or the time of darkness as a

distinct category…. It appears as if human behavior is only of interest when it occurs during the

day." Fortunately there has been a shift in interest in recent years.

Perhaps the most influential and most prolific source of anthropological data regarding sleep is

Night-time and Sleep in Asia and the West, an anthology of articles presented at a conference

held in Vienna in 2001, edited by Steger and Brunt and published in 2003. The publication

features article topics ranging from the politics of midday napping in contemporary China to the

technology used to regulate sleep in the United States armed forces.

In the opening chapter, Steger and Brunt (2003) lay an extensive groundwork for the rest of the

book as well as present questions for the discipline. Throughout their discussion two very clear

statements regarding the scholarship of the night emerge: the current assumption that "daytime

is… the standard for human existence" (2003:6) and that, despite this, "night is no longer

reserved for sleep alone" (2003:8). Steger and Brunt draw upon Murray Melbin's concept of

"colonization of the night" which states that we now gain "productive time" by extending our

daytime-standard activities into night-time hours (2003:8). The rhetoric of productive time has

even lead to the establishment of what is known as "proper sleep hygiene" and the

implementation of this rhetoric, as well as Melbin's mentioned research, is utilized throughout

the remainder of the text.

Perhaps the most interesting topic explored by Steger and Brunt (2003) is Steger's typology of

sleep culture. She theorizes that societies organize sleep in one of three ways: monophasic,

biphasic (also referred to as "siesta culture"), and polyphasic sleeping patterns (2003:15-18).

Monophasic cultures engage in one sleeping period during a 24 hour period that usually lasts

about 8 hours. This type of sleep culture has been rapidly spreading throughout the world almost

entirely hand-in-hand with Westernization. Biphasic, or siesta cultures, sleep in two phases

throughout the day – usually consisting of a midday nap and a slightly longer rest overnight. This type of sleeping culture, though previously the standard in many Hispanic cultures as well as Chinese culture, has gradually lost its footing in the wake of westernization as it has been widely characterized as a "lazy" or "backwards" behavior (2003:17). Polyphasic sleep is perhaps the most interesting: Steger explains that this type of sleep culture can be found across the globe practiced by individuals of all socio-economic backgrounds and in all climates. The key to understanding this type of sleep practice is that all of society "does not turn in for a lengthy time each day"; instead, each individual regulates the frequency and length of their rest periods (2003:18). It is important to note that Steger does not present these three patterns as exclusive of one another – it is possible, and likely probable, that all three are practiced to a certain extent within any given society.

While Antje Richter (2003:32) explores the dichotomy of sleep valuation in Ancient Chinese texts, and Li Yi (2003:50) discusses the politics surrounding the 20th century fight over preserving the traditional Chinese biphasic sleeping patterns, both authors touch upon the same underlying trend: sleep is often utilized in social and political discourse with the primary objective of expressing a political or cultural rhetoric that has little to do with sleep itself. Interplayed with this rhetoric was the concept of the ideal citizen as one who sacrifices the "personal indulgence" of sleep in favor of using that time to better society through activity (Richter 2003:33). While discussed here in the context of Chinese society both before and after extensive contact with the West, this ideology can be found in the Western concept of the

protestant work ethic which has very strongly influenced how sleep is conceptualized in modern-day America.

In his article "Sleep and night-time combat in contemporary armed forces," Eyal Ben-Ari (2003:108) explores the technology used to regulate sleep in the American military and how unit sleeping patterns and behaviors are now being incorporated within the larger "organizational 'logic' of these forces." He describes the effects that sleep loss has on an individual, which include "attention lapses, irritability, susceptibility to accidents and decreased attention to self-care" but explains "it is decision-making, logic and the 'higher' mental functions that are the most degraded by sleep deprivation" (2003:111). He explores how the military has developed different technologies to manage soldiers' sleeping patterns, but it is his exploration of their "Sleep Management Manual" that reveals the greater cultural struggle the system must address, as it explicitly states that "sleep... is not a sign of weakness or low motivation" (2003:115). It is evident that sleep education, even when approached from a biological perspective, must address cultural standards, stigmas and ideas held by the target audience.

In addition to the scholarship presented within this anthology, there are several other anthropological articles that address the topic of sleep and the night. In their article "Anthropology of the Night: Cross-Disciplinary Investigations," Jacques Galinier et al. (2010:821) explore the lack of "appropriate measuring tools to tackle the subject of sleep" currently within the discipline. While they spend much of the article examining different

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examples of sleep throughout several different cultures, they conclude that while we lack both laboratory and field data, as well as the general concepts necessary for anthropological analysis, we as researchers must "proceed on both levels simultaneously: [the] accumulation of data on one side, [and the] creation of concepts on the other" (2010:836). The following two studies investigated this topic further.

In **"**Prioritizing Sleep for Healthy Work Schedule," published in the *Journal of Physiological Anthropology*, Masaya Takahashi (2012) conducted a qualitative analysis of mid-day napping and the effect this has on work schedules. He states that "repeated partial sleep deprivation, even achieving 5 to 6 hours of night's sleep, causes a gradual impairment in neurobehavioral performance each day" and goes on to examine the extent to which mid-day napping can address the biological impact of chronic sleep deprivation and the effect this would have on daytime productivity (2012:2). While this study does not provide an in depth analysis of the cultural acceptability of mid-day napping in a predominantly monophasic sleeping culture, it provides some interesting data on sleep deprivation within adult populations.

On the other side of the age spectrum, Heather Noland, James H. Price, Joseph Dake and Susan K. Telljohann (2009) explore the cultural aspects of sleep in their article "Adolescents' Sleep Behaviors and Perceptions of Sleep." Their study sampled high-school students from the Midwest and investigated "the prevalence of adolescent sleep deprivation, factors that affect the quantity of sleep, adolescents' perceptions of their sleep, and the effect of sleep deprivation on

academic performance and weight status" (2009:225). Ultimately, they found that while the participants knew the "appropriate" amount of sleep they should be getting and were able to recognize both factors that contribute to good sleep and that promote sleep deprivation, this knowledge was not enough motivation to promote adequate sleep (2009:229). From a theoretical perspective, the most interesting aspect of Noland et al.'s conclusion was that despite recognizing the primary influence of social obligations and societal requirements on adequate adolescent sleep, the "solution" they proposed was not a change in these pressures, but rather increased parental regulation of adolescent sleeping behaviors (2009:230). This avoidance of addressing social pressures in favor of increasing external and internal regulation is a trend found throughout the majority of publications regarding sleep.

In addition to the quantitative and qualitative data that these two studies contribute, both aid in the development of the general concepts that Galinier et al. (2010) have requested. For better or for worse, both documents establish a precedent of exploring sleep culture within the context of productivity with populations starting as young as adolescence. They also both suggest that what changes can or should be made to address sleep deprivation within society should not interfere with or change productivity standards or expectations. Whether the field will hold to these concepts and practices will have to be seen.

In analyzing these proposed concepts, the question arises - why are we so obsessed with sleep and its context within the rhetoric of productivity? Various sociological studies have attempted

to find an answer. Simon J. Williams and Sharon Boden (2004:4) in their article "Consumed With Sleep? Dormant Bodies In Consumer Culture", as well as Megan Brown (2004:176) in her article "Taking Care of Business: Self-Help and Sleep Medicine in American Corporate Culture," both ultimately draw this back to what is essentially the protestant-ethic driven capitalist colonization of the night, as previously discussed by Melbin (Steger and Brunt 2003:8), Richter (2003:33) and Yi (2003:51). Brown (2004:178) states that "the idea of a tireless work ethic – a significant, if frequently stereotyped, aspect of Puritan and immigrant cultures – is a longstanding American tradition," and people are willing to put money down in order to achieve this established standard. Williams and Boden (2004:3-7) explore in their article how this standard has expanded into the realms of beauty, luxury, and work performance, and how consumer culture has changed to accommodate this. What these two articles, as well as the work done by Takahashi (2012) and Noland et al. (2009), show is that current sleep culture cannot be adequately explored in any given society without investigating the internalized ideals and standards that have been enculturated over time.

Looking further beyond the social sciences, there is significant research regarding the relationship between sleep and health conducted from the medical perspective. For the purpose of brevity, related studies will be touched upon in passing but only publications building on the research presented above will be explored in depth in the following pages.

While Takahashi (2012) explored some of the biological components of the effects of napping behaviors on daytime productivity, other researchers have investigated this topic further. In 2009, researchers in China studied the effect of lunch-time napping on college students' memory, vigilance reaction time (attention) and cognitive function, and their findings suggest that while short-term memory and cognitive function were not significantly altered by an afternoon nap, those individuals who napped experienced greater vigilance reaction scores (Zhang et al. 2009:285-287). While publications from the Mayo Clinic (2010), The National Sleep Foundation (2011) and the Pew Research Center (2009) all promote the benefits of day-time napping, Zhang et al.'s (2009) research, as well as research conducted by Stafford University Medical Center (2006:1) that reached similar conclusions, both provide empirical experiential data that support these claims.

But how exactly does sleep loss affect an individual biologically? Giuseppe Curcio, Michele Ferrara, and Luigi De Gennaro (2006) explore the connections between "Sleep loss, learning capacity and academic performance" in their article in Sleep Medicine; and John G. McCoy and Robert E. Strecker (2011) also explore this topic in their article "The cognitive cost of sleep lost." Ian M. Colrain (2011) narrows the scope of his investigation and explores the effect sleep has specifically on the brain; Sean P. Drummond, Gregory G. Brown, J. Christian Gillin, John L. Stricker, Eric C. Wong and Richard B. Buxton (2000) narrow their study even further in their article "Altered brain response to verbal learning following sleep deprivation." All of these articles came to the conclusion that sleep deprivation has a complex and ultimately detrimental

biological effect on cognitive function and daytime productivity that manifests in varying

manners for both short-term and chronic situations (Curcio et al. 2006:332; McCoy and Strecker

2011:578; Colrain 2011:4; Drummond et al. 2000:656).

It is important to understand the biological effects of sleep loss as they directly influence what, if

any, behavioral changes may accompany it. In her article "When Worlds Collide: Adolescent

Need for Sleep Versus Societal Demands", Mary A. Carskadon (1999:349-350) investigates the

increasing decline in adequate sleep obtained by high school students and she credits this to a de-

synchronization between social obligations and the biological processes of sleep. Though she

does not have data to support such, she postulates what effect this sleep deprivation might have

on academic and interpersonal success – though just a year before, Carskadon paired up with

Amy R. Wolfson (1998) and explored the effect that sleep deprivation in high school students

has on those behaviors. Although this study did not provide a direct quantitative correlation

between lack of sleep and poor academic performance, its findings did suggest a connection

between sleep loss and daytime behavioral problems (1998:884).

More concrete evidence of the behavioral changes observed in conjunction with sleep loss

among this population is the observed increase in consumption of caffeinated beverages.

Christina J. Calamaro, Thornton B. A. Mason and Sarah J. Ratfliff (2009:e1008) studied this

particular behavior and found that "despite the drive to sleep, adolescents… consume caffeinated

beverages to stay awake later into the night. Subsequently, their ability to stay alert and fully

functional throughout the day was impaired by excessive daytime sleepiness." Calamaro et al. make a connection between caffeine consumption, late-night activities, technology and multitasking but did not specify what, if any, social reasons were behind such use.

Understanding where an individual is learning their sleep behaviors from is integral to understanding why an individual sleeps in a particular manner. Culture is perpetuated by the formal and informal passage of knowledge and these pathways are as much a part of a culture as the practices themselves. Judith A. Owens, Jessica Stahl, Alison Patton, Uha Reddy and Megan Crouch (2006:128-127) explore this aspect of the issue in their article "Sleep Practices, Attitudes, and Beliefs in Inner City Middle School Children: A Mixed-Methods Study" wherein they try to understand what behaviors are preventing adequate adolescent sleep, as well as where and from whom these behaviors were learned. Their findings suggest that most adolescents learn about sleep from the adults in their life, including their parents, their friends' parents, and their teachers, though the influence of siblings and other relatives was also a major source of information. Owens et al. (2006:126) also touch upon the influence of the media but are unable to draw any conclusions about its influence from the data they were able to collect.

Along the same line of thought, Kathryn M. Orzech (2012:4) also explores the different sources of sleep- and health-related information adolescents have and found the sources to be the same. However, she discovered that the information offered by an individual's parents or the media was characteristically "non-specific" – she suggests that this made the messages easier to ignore,

leaving information obtained from friends and self-experience to have a stronger influence over sleep behaviors (2012:6).

In the pursuit to understand the social complexities of sleep – though there may be some initial theoretical perspectives within the social sciences – there is little previous anthropological research. This research builds on studies conducted on adolescents' perspectives on sleep and the relationship between sleep and health mentioned above, but instead explored these topics within a sample of college students. As a researcher, I am particularly interested in investigating sleep among the college population due to my own experiences with sleep during my time attending university. As a student involved in numerous extracurricular activities and consistently dealing with the side effects of sleep deprivation, I was curious how other students practice and experience sleep. In addition to my personal interests, it is important for the field of anthropology to investigate the perspectives held by this specific population because they represent a period of life within which an individual must learn to balance multiple stressors they likely did not experience prior. It is during this time that many individuals believe they become a member of adult society. In addition, research has shown that the beliefs developed while in college have a very strong influence over beliefs and behaviors later in life (McCabe et al. 1996:462).

Research Design and Methods

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The primary method of data collection utilized for this project was in-depth ethnographic, semi-structured interview. This method was appropriate for the specified research questions because they are based upon understanding the participant's perspectives on sleep and the relationship between sleep and productivity. Unlike a survey or behavior log, the interviewing method provides an open-ended structure of response that allowed for greater exposition on the participant's thoughts and beliefs, as well as helped minimize the risk of a pre-structured, edited response which can often occur with other methods of data collection. These interviews were conducted either in private study rooms in the campus library or locations out of listening distance of passerby, and each interview lasted 30-45 minutes. No follow-up interviews were conducted, and each participant received remuneration in the form of $10.00 upon completion of the interview to compensate them for their time. Before the interview, students were briefed on the consent process and informed they reserved the right to withdraw from the study at any time. No personal identification was collected and all names used herein are pseudonyms.

The sample selected for investigation was composed of 25 English-speaking college students who attended the University of Central Florida in the fall of 2012 and were between the ages of 18 and 26. These parameters were selected to create a sample representative of the traditional college student demographic. Participants were recruited primarily through in-class announcements, though one was referred to the study by another student involved.

Table 1. Participant characteristics

Extracurricular Involvement		
	# of Participants	
Employed (range 3-30 hours/week)	13	
Volunteer	6	
Campus Clubs	8	
Average Amount of Sleep (in hours)		
	Average	Range
Overall	6.76-7.9	3-10
Of employed	6.7-7.6	5-10
Of volunteers	6.8-7.9	5.5-9
Of campus clubs	6.7-8.2	5-10

Table 2. Napping among participants

Frequency of Napping		
	# of Participants	
At least once a week	9	
At least once a month	2	
As needed	10	
Do not nap	4	
Length of Nap		
	# of Participants	
0 min < or = 30 min	8	
30 min < or = 1 hour	2	
1 hour < or = 2 hours	7	
2 hours < or = 3 hours	2	
"Short" vs. "Long" Naps		
	Short	Long
# of participants using word	8	14

Range	15 min - 2 hours	30 min - 4 hours

Table 3. "Productive" vs. "non-productive" participants

Participant Characteristics		
	Group P, p = 18	Group N, p=5
Involved in extracurricular activities	11 (61%)	3 (60%)
Nap occasionally	15 (83%)	4 (80%)
Negative opinions of napping	7 (39%)	1 (20%)
Consider social activities productive	16 (89%)	4 (80%)
Believe they get enough sleep	12 (67%)	2 (40%)
6 or less hours of sleep several nights a week	4 (22%)	5 (100%)
Primary Themes in Defining Productivity		
	Group P	Group N
Output/Product	13 (72%)	1 (20%)
Value	6 (33%)	2 (40%)
Effort/Activity	5 (28%)	1 (20%)
Goals	4 (22%)	4 (80%)

When asked how much sleep they typically get each night, many participants reported a range of hours instead of specific amount; as such, the average amount of sleep reported throughout this article is frequently noted as a range of hours instead of a specific amount of time. To calculate this number, the lower end of each range reported was averaged to obtain the lower limit of the overall average range, and the upper limit was obtained by averaging the upper end of each range reported.

One of the main analytical tools utilized in this article was coding participant responses to identify primary themes and trends. For some of this analysis, such as the "short" vs. "long" nap dichotomy displayed in table 2 and discussed in chapter three, a simple word search was utilized to identify the usage of keywords; other coding and text analysis required more in depth examinations of the narratives.

For example, while each participant was asked directly if they consider themselves as productive and they self-identified into their respective categories, in order to examine each participant's personal definition of productivity, I coded each of their responses to identify primary themes. Initially this was done by locating keywords such as "valuable" or "output"; however, after establishing the four primary themes. From this point, each response was then re-examined and coded according to any initially overlooked keywords as well as any overall interpretations. The comparison of themes between group P and group N in table 3 are based upon how many students included each theme in their definition of productivity. As is noted in the full discussion of this topic in chapter four, several students identified more than one theme in their definitions. For the comparison in table 3, responses were not restricted or coded according to one "primary" theme, but instead each theme mentioned was counted individually.

<u>Significance</u>

While some research has been undertaken to understand the perspectives of adolescent populations, there has yet to be any anthropological data collected on the perspectives of college students. This population has been selected because they represent a socially significant period in which individuals must learn how to balance academic, social and economic stress they likely were previously not exposed to. In addition, present-day college students are expected to fulfill an ever increasing amount of responsibilities while still maintaining a high degree of social, and often economic, productivity. Further still, research has shown that the beliefs and moralities developed while in college heavily influence an individual's beliefs and decisions later in life (McCabe et al. 1996:462). How these individuals understand the relationship between sleep, health and productivity will likely affect their life-long sleeping patterns, and the analysis of this relationship will provide a better understanding of the effects collegiate pressures have on student health and performance.

Chapter Two: Collegiate Sleeping Patterns and Expectations

Before we can understand the relationship between collegiate sleeping behaviors and understandings of productivity, we have to understand how college students practice and conceptualize sleep. As such, a significant portion of each interview was spent discussing this topic. This chapter answers the following questions: how much sleep do the participants get?; which of Steger's sleeping patterns (Steger and Brunt 2003:15) do they practice?; and do they think they get enough sleep, and why? The findings that emerged indicate that most college students do not employ a strict sleep schedule and are instead very flexible in their practices. In addition, the participants utilized the monophasic sleeping pattern almost exclusively, only adopting an alternative pattern to accommodate an abnormal daily schedule and only on a temporary basis. Finally, while a majority of students believe they get an adequate amount of sleep, that belief is largely based off their personal expectations and not the actual length of time.

The majority of students participating in this research maintained busy schedules with multiple commitments that extended beyond taking classes, as table 1 demonstrates. Of the 25 participants that took part in this study, 23 were full-time students enrolled in at least 4 classes, 11 of whom worked part-time, and the remaining 2 participants were three-fourth time students enrolled in just 3 classes and both maintaining employment. The 13 total students who are employed work an average of 19.45 hours a week, though their schedules ranged anywhere from 3 – 30 hours. In addition, 6 participants reported volunteering regularly and 8 participants were actively involved in extracurricular activities around campus. Surprisingly, 2 participants balance

full-time enrollment, a job, volunteer commitments and club activities on campus. Only 9 participants did not report any additional commitments outside of their classes.

These responsibilities were frequently cited as a major component of daily activity for the 16 participants engaged in them outside of class. For some, these obligations interfere with the amount of sleep they are able to obtain, but they are not necessarily indicative of a lack of sleep.

<u>Nightly sleep</u>

Overall, the participants sleep an average of anywhere from 6.76-7.9 hours at night, but there is a lot of variation within this population, with a reported range from 3-10 hours. It should be noted that these numbers have been calculated exclusive of time spent napping during the day as midday napping is discussed in chapter three. In addition to a notable range of hours each night, there was an appreciable amount of variation in how participants practiced their daily sleeping habits and how they explained their sleeping patterns. Most students provided a several hour window of when they typically get to sleep at night, frequently around midnight or one in the morning, but otherwise did not indicate a significant effort to stick to a particular schedule. Several students, however, maintain a very strict sleeping schedule.

When talking about her sleeping habits, Ruth was very straightforward with the reasoning behind her strict scheduling. A full-time student in her second year, she is motivated by good grades. She explained how in previous semesters she had a very sporadic sleeping pattern and was not able to focus on her school work. She started treating her sleep differently when she realized just how competitive graduate school applications can be, saying "I need to get good grades… If I didn't have that pressure, I would probably not be so paranoid about going to sleep at a certain time." Ruth now regularly goes to sleep by 10:00-10:30 p.m. every night, is up by 6:30 a.m. for school during the week, and rarely sleeps past 8:00 a.m. on the weekends. She realized that without an adequate amount of sleep she has a lot of difficulty completing her school work or focusing on her studying, and as a result is determined to get eight hours every night.

Two other participants maintained a very strict schedule, but, unlike Ruth, were not motivated to do so in order to maintain a particular grade – rather, it was simply an extension of the sleeping habits they adopted before attending UCF. Lina, a full time student taking four classes and participating regularly in a club on campus, gets a consistent eight hours every night of the week. In explaining her sleep schedule, she insisted that she is in bed every week night by 11:00 p.m. and up by 7:00 a.m. every day for class. While she may stay up slightly later or sleep in a bit on the weekends, she does not typically deviate significantly from her weekday schedule. She explained that this pattern in place long before starting at UCF: "I've always had a fairly stringent sleep schedule, that's just me. My friends used to disparage it, 'Even at sleepovers she's in bed by 11:00 p.m.'"

Similarly, Betty, a full-time senior at UCF, recalled the schedule her parents enforced while she was in high school. She explained, "my mom had me on a really strict 'you don't have to be asleep but you have to be in your room, in bed with the lights off at 9:00 p.m.' I carried a lot of that." While her bedtime might shift by couple hours during the week, she is insistent on getting eight hours of sleep every night, stating "it's just muscle memory. I need eight hours."

For one student in particular, sleeping a consistent amount of time every night was not the result of active planning but rather her inability to alter her body's natural rhythms. Despite spending the majority of her primary education attempting to alter her sleep schedule, Donna, a full-time student, is unable to fall asleep at any time prior to 4:00 a.m. As a result she sleeps almost consistently until 12:00-1:00 p.m. every day. Regardless of the atypical hours, she still averages eight hours nearly every night of the week and finds that she does not typically need to use an alarm to wake up. She explains, saying that "after eight hours my body is like 'you're done here, go do something.'" Donna recalled taking the prior semester off of school and to work and explained that "it was never not [sic] a struggle. I never adjusted to having to wake up that early." To get to work on time she had to be out of the house by 7:00 a.m. and would be so exhausted by the end of her shift that she would go home and "I'd spend all my time sleeping." However, within two days of leaving that position she was back to her previous sleeping pattern, unable to sleep before 4:00 a.m. She worries about getting another early morning job, saying "I

can't be productive early in the morning. It's a waste for me to be up, I just hate it… it would be a disaster for me."

Unfortunately, not all students have the opportunity to attend school without working in addition to their classes. Individuals who were employed typically reported getting slightly less sleep than the participants overall, with a range of 6.7-7.6 hours per night. However, there are more employed students reporting only f5 hours some nights, as well as more students reporting a greater variation in the sleep that they are able to get. The following students presented the greatest impact of their working circumstances on the sleep they are able to get at night.

For Margaret, a full time student who works two part time jobs, her sleep schedule depends significantly on what shifts she has been assigned to work. While she averages about eight hours of sleep per night over the course of the week, her hours per night are unpredictable. She explains, "my sleep varies from like 10 hours [one night], and then I'll get 5, and then 10 hours the next day, and then I'll get 5 again. My body never figures out what my sleeping schedule is." Even though she reports getting more hours of sleep in college than she did in high school, she explains that the irregularity of her sleeping patterns affect her just as negatively as the restricted hours.

David reported a similar experience. He also works two jobs to support himself while in college, and described how in previous years his jobs severely restricted his sleeping pattern. One position was with a local restaurant that would schedule him until 11:00 p.m., and the other, located on the other side of town, would schedule him for work at 5:00 a.m. the next morning. He admits to simply not sleeping some nights because "there was no point about it" if he had to be up by 3:30 a.m. to get to his other job on time. He ultimately quit the early morning job after several months because it was too much for him to manage, explaining that he "wasn't getting enough sleep for school and I wasn't getting enough time for school and to study. I'm sure my grades reflected that."

In addition to Margaret and David, Karen often finds the demands of her two jobs put a lot of pressure on her daily schedule. While one job is with an organization on campus, the other is with a local restaurant that will regularly schedule her until three or even five in the morning, or until they close. While she tries to sleep as much as possible when she can, her mid-morning classes prevent her from sleeping in late enough to make up for her late night shifts and she is often left feeling tired.

Based on nightly sleep alone, the participants are getting slightly less sleep each day than is generally recommended by medical sources, such as the Mayo Clinic (Morgenthaler 2010:1) and the National Sleep Foundation (Bonnet and Arand 2011:4). Only a few students implement a strict sleeping regimen in their daily lives; instead, most students experience a lot of flexibility in

the times they go to sleep and wake up. The students who are employed report sleeping for

roughly the same amount as the participants overall but they experience a greater variation in

how much sleep they are able to get on different days of the week due to their work

commitments. This additional responsibility can potentially influence the student's ability to

perform well in school, as well as how they feel on a daily basis.

Sleeping Patterns

One of Brigitte Steger's (Steger and Brunt 2003:15) main investigations in Night-time and Sleep

in Asia and the West was regarding the categorization of monophasic, biphasic and polyphasic

sleeping patterns. As discussed previously, monophasic sleep occurs in one sleeping period

during a 24 hour window, typically lasting 8 hours, and is the predominant sleeping pattern

found in the western developed nations. Biphasic sleep, or the siesta pattern, divides daily sleep

into two separate phases during a 24 hour window. These phases do not have to be, and

frequently are not, equal in length; rather, this pattern is typically practiced with a sleeping phase

at night complemented with a somewhat shorter midday nap. Polyphasic sleep, on the other

hand, is practiced without an extended period of sleep at any particular time of the day. Instead,

individuals sleep several times a day for a short amount of time. In contrast to monophasic and

biphasic sleep, polyphasic sleep is almost never practiced collectively by a society and is instead

regulated by the individual. All three sleeping patterns are found around the globe, and it is not

uncommon for all three to be practiced within a single culture (Steger and Brunt 2003; 15-18).

Among the participants of this study, the monophasic sleeping pattern was practiced by every student. There were few variations from this trend, and when they occurred they were done so on a temporary basis, typically utilized as a strategy to moderate sleep, imminent deadlines and other responsibilities.

For example, at the time of interview, Carol had recently utilized a polyphasic sleeping schedule to help her meet a deadline for one of her classes. After an extremely involved homecoming week she was hard pressed to write two papers due the following day, and while one could be delayed until the next afternoon, she found it necessary to stay up all night to get through the other. Despite her intentions, she admitted that at a certain point she found it very difficult to stay awake. In order to stay up and complete her paper, she worked out a system "where I would work for 45 to 50 minutes and then sleep for 10 to 15 minutes, and then work again." In recalling the experience, she spoke very positively about how this tactic helped her complete her paper in time for class the next morning. In addition to being effective, this particular strategy "was a motivator as well – I get this much work done and I can take a quick nap, then I can work again. It was the first time I've ever done that, usually I just will power through until I'm done."

While no other students reported utilizing a polyphasic sleeping pattern, Maria, a full time student working on campus, reported utilizing a biphasic sleeping pattern as a means of

managing her work load with classes. While attending a local community college she discovered that her productivity and accuracy would naturally peak at 3:00 a.m. As a result, she would frequently go to bed around 10:30 p.m. just to wake up at 3:00 a.m. to complete her homework before going back to sleep again until class later that morning. While she has employed this tactic less and less since transferring to UCF she still occasionally falls back on it if her work load becomes too much. In spite of the effectiveness of this strategy, she is actively trying to institute a permanent monophasic sleeping pattern in response to her increasing amount of daytime responsibilities.

While alternative sleeping schedules are not necessarily prevalent among the participants, a few of them mentioned these alternative sleeping schedules in their interviews, as well as their perceptions of them. For example, in Lina's opinion, biphasic sleeping patterns are frequently connected to a higher degree of productivity, particularly later in the day. She views these practices positively and spoke highly of companies in the USA that are instituting mid-day napping policies. Patricia, on the other hand, spoke about her boyfriend's sleeping schedule in the Navy and how his responsibilities require him to sleep in several increments of 3-4 hours throughout the day. According to her boyfriend, he eventually got use to the schedule, but she has very strong opinions against it. "It sounds unhealthy," she stated, making a face. "I feel like a large chunk is better, and maybe with a nap is still helpful, but to structure your sleep in four hour sets doesn't sound healthy."

Along the same line, Donna spoke at length during her interview about the research she undertook during high school investigating alternative sleeping patterns, and at one point asked me if I had ever heard of polyphasic sleep. She responded to my summary of Steger's work with "that's super crazy to me that people actually do it! I could never!"

Is it Enough?

While these students are averaging slightly less sleep than is generally recommended, do they think they get enough sleep? Of the 25 students interviewed, 16 believed they got enough sleep at night, reporting an average of 7.4-8.3 hours with a range of responses from 5-9 hours. The remaining nine participants believed they did not get enough sleep at night, reporting an average of 6-7.5 hours of sleep at night, with a range of 3-10 hours.

Those who believe they get enough sleep at night explained their reasoning in several different ways. Many of them argued that they got as much sleep as they need because they are able to function as they expect to during the day and not experience a negative impact on their health; others argued that while they did not get enough consistently each night, it balanced out well enough that they felt no significant negative impact from a lack of sleep. In short, they have met their expectations for daily functioning; they believe they got enough sleep because, according to how they understand it, their sleep has achieved its expected purpose.

Karen's explanation is a perfect example of the influence of expectation. As stated earlier, she reports sleeping an average of 5-8 hours a night although she is often required to work until 3:00-5:00 a.m. at a local restaurant. When asked if she thinks she gets enough sleep, she responded "More or less. I'm still tired a lot, but I mean I'm a college kid, *I'm going to be tired*" (emphasis added). She believes she gets enough sleep because, as a college student, she doesn't expect to get a lot of sleep to begin with.

Carol also expressed this expectation during her interview. While she remarked that she is happy with the eight hours of sleep she typically gets at night, as she believes it is good for her health, she admitted that she thinks she gets an abnormal amount of sleep. Comparing her eight hours to the 4-5 hours her boyfriend, an engineering major, gets on a regular basis, she feels that she is "getting an abnormal amount of sleep for a college student…. I think I might sleep too much." Like Karen, Carol expects to be sleep deprived as a college student. She presents her boyfriend's significantly restricted sleeping pattern as the standard experience and spoke in an almost guilty manner regarding her own behavior, despite believing that the eight hours she gets at night is tied to her good health.

Several other students also expressed the sentiment that they sleep too much. Lisa, a full-time senior with a job on campus, reported an average of nine hours of sleep per night in addition to a

two hour daily nap. However, she doesn't believe that she needs more than eight hours of sleep on any given day because she was able to accomplish all of her responsibilities with that amount in previous semesters. Despite this, however, she has no intention of reducing her current sleeping hours any further. She explains, "I think eight hours is perfect for me, but going back to eight hours… I don't see that happening." When prompted to explain her reasoning, she stated that she has too much free time: "If I'm bored, I go to sleep. It keeps me from eating, that's the way that I see it."

Nancy similarly admitted to sleeping during the day as a way to pass the time. She's a full-time student who volunteers several days a week with a local organization, and she was about to start a part-time job on campus at the time of interview. She was visibly very eager to start her new position and admitted that was because she felt like she could be doing a lot more with her time than she was. "I pass time sleeping when I could be doing something, stuff that can change or fix things. Something productive." She compared the amount of sleep she gets on a daily basis to that of her friends and family and believes that she just sleeps too much.

Each of these students compared their experiences to what they expect to experience: Karen compared herself to a general stereotype; Carol compared her experience to that of her boyfriend; Lisa compared her current behavior against that of previous semesters; and Nancy compared her experience to her friends and family also attending college. Their assessment of

their own sleeping behaviors was moderated by their perceived expectations arguably more than their lived experience. James is a perfect example of that conflict of interests.

James is a full-time senior balancing a job, a weekly volunteer commitment and a leadership position within a major university organization. He reported an average of 6-8 hours of sleep at night and believes he's getting enough because he is logging the appropriate hours. Despite this, however, he reported feeling "physically exhausted" and "worn out" from his non-stop schedule of responsibilities. He proposed that perhaps he is not attaining the quality of sleep that he should since he has trouble falling asleep and wakes up tired, instead of falling asleep quickly and "waking up refreshed." Still, he says that eight hours are the optimal amount because it is something he has always heard recommended and he believes it is a good goal, despite getting that amount and not feeling how he thinks he necessarily should. He gets the hours he thinks he is supposed to, and by meeting that expectation, regardless of how it conflicts with his lived experience, leads him to believe he gets enough sleep.

The nine students who stated they do not get enough sleep on a regular basis gave several reasons for this belief, citing everything from being unable to get through lunch with a friend without excessive yawning, to being unable to get through the day without a nap in early afternoon, to the somewhat stereotyped "I'm on Facebook a little too long." Several students reported a lack of sleep due to their significant other's late-night work schedule, while for others it was their own work obligations that kept them from sleeping at night.

The experience of Elizabeth is perhaps the most interesting, especially when understood as a counterpart to James. A sophomore at UCF, Elizabeth believes that she does not get enough sleep at night, and like James, suggests that the quality of sleep she achieves at night is significantly below what she thinks she needs. As a result, she consistently feels like she is constantly tired and dragging through the day. However, where James believes he gets enough sleep because he "logs" the appropriate hours, Elizabeth does not. She reported sleeping an average of six hours at night, though she cited difficulty falling asleep and frequent disturbances, leading her to claim that some nights she does not believe she falls asleep at all.

It seems these sleep issues predate her time in college, as she could only remember three instances of sleeping through the night throughout her entire life. She recalled sharing a room with her sister growing up and the vast difference she observed in their sleeping habits. One day her sister made a comment to her, saying "I never saw you sleep! I was always asleep before you and I woke up after you. I don't know how you sleep." Elizabeth remarked on this, stating solemnly "we shared a room for 17 years, and she never saw how I sleep because *I sleep so weird*" (emphasis added). She expressed a lot of anxiety and loneliness when she spoke about her sleep behaviors because when she compared them against how she observed those around her experiencing and practicing sleep, she felt "really weird and messed up." She spent most of her interview speaking less about the physical side effects of her sleep and much more about the emotional distress caused by the perceived abnormality of her behavior.

While these students are averaging just under the typically recommended eight hours of sleep overall, the hours that they log and the patterns that they practice are very diverse. The only obligation that was observed to affect sleeping behaviors consistently, though not always drastically, was employment. The students who were employed reported slightly less sleep than the participants overall, but the greatest difference observed was in the variation of sleeping hours day-to-day. Employed students were more likely to report getting fewer hours of sleep some nights but then significantly more sleep on other nights of the week, depending on their academic and social obligations.

The only significant trend observed among these students in regards to their sleeping was the manner in which they assessed the amount that they personally got each night. While there is a slight correlation between average nightly sleep and the student's perception of getting enough sleep, it appears the participants based their assessments on how they measured up to the standards and expectations they each held regarding sleep. Of the 25 students that participated in this study, over half believe they get enough sleep at night, largely because they do not experience the negative side effects they associate with regular sleep loss. They generally feel as they expect to feel and achieve what they expect to achieve each day, so they believe that sleep has fulfilled its function. Few students tied this assessment to how many hours they get at night.

There appears to be a standard regarding a lack of sleep in the community that is tied to the social identity of being a college student. For some, this is reinforced by the practices they observe those around them engaging in, while for others the awareness of the stereotype is enough to promote a shift in acceptance and personal behavior. Unfortunately, no data was gathered regarding how much sleep the participants expected to get as college students, but a few provided some perspective with the comparisons they mentioned in their interviews. Regardless, based on the hours of sleep reported and excluding the four students who experience significant variation in their nightly sleep schedules, the participants got about seven and a half hours of sleep at night – several hours more than the five or so hours students proposed the "standard" college student achieves. There is this social understanding of sleep loss that is not entirely congruent with what these students reported, and these expectations warrant further study.

Chapter Three: Napping – Perceptions and Inconsistencies

It is impossible to examine sleep within a population without also considering their napping behaviors. Napping has been observed in populations and cultures all around the world and can play a major part in the amount of sleep that an individual gets on a daily basis (Milner and Cote 2008:272). According to a Pew Research study (Taylor 2009:2-4), roughly a third of individuals aged 18-29 nap on any given day – however, this same study also found that college-educated individuals are less likely to nap. The three major questions this chapter answers regarding collegiate napping are: why are students napping?; how do they define napping?; and do they view napping positively or negatively? I found that although the participants almost exclusively utilized monophasic sleeping, daytime napping was a common practice for many of them. Of the 25 participants, 21 reported that they nap: two nap at least once a month and nine of them nap at least once a week. The other 10 participants nap "as needed" or only when they are sick. The remaining four students very adamantly declared that they never take a nap.

Why Nap?

While the circumstances leading up to a midday nap were very diverse, over half of the napping participants nap with a similar intention. Robert, who naps several times a month, explained this motivation very succinctly: "if I lose sleep during the night I can make up for it with a nap." This was by far the most common explanation given for midday napping, regardless of how frequently or infrequently the individual would nap. Elizabeth, introduced in the previous chapter, reported napping only for this reason, yet interestingly made a comment about

previously learning in freshman psychology that it is impossible to make up for sleep lost. She

explains, "You're not really catching up on it, and it's not like you're storing it, either. You

didn't sleep at all and now you can sleep all weekend and catch up – that's not really it. Each

time is individual." Regardless of this understanding, she reported napping when her course load

was particularly exhausting or when she had morning classes or study sessions that, when

combined with her difficulty sleeping, would prevent her from getting enough sleep at night.

Two of the napping participants reported only napping when they were feeling ill. Lina, also

introduced in the previous chapter, explains that while she typically does not nap it all depends

on how her body feels. As a babysitter, she claims to understand the benefits of a nap when you

really need it, and admits to napping on the weekend if she finds it necessary. However, she has

a different approach to napping during the week: "if it's during the weekend, okay, no biggie. If

it's during the week, unless I'm sick I won't simply because it screws with me being able to get

to sleep later on that night." When she's sick, Lina explains she is much more lenient with her

weekday napping as she believes that her body needs the extra rest.

Helen also claims to only nap during the day when she is sick. A senior at UCF, she reports

getting on average only five hours of sleep each night due to nighttime anxieties and early

morning carpool. Regardless, she finds herself unable to nap during the day to make up for any

lost sleep the night before. She explains, "napping is generally when I have an aggressive

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headache or I feel really sick, so it's not a frequent thing." Even so, when napping to address any illness, she only naps for 20-40 minutes.

Five participants reported napping because it is good for their health, with four of them napping at least once a week. Jennifer, a sophomore, credits her mom's interest in her health for encouraging her to nap on occasion. In between balancing four classes and 20 hours of work a week, she finds she *does not* always get the sleep that she needs or eat as well as she would like. On Sundays when she visits her family at home, her mother frequently inquires after her health and will even weigh her to make sure she is eating properly. She explains how her mom then "stuffs" her with food and the resulting "food coma" nap helps keep her from getting sick throughout the week.

For Maria, napping once a week on Sundays has been tradition for years. When she was younger, her family would attend morning service at church, go home and nap from 4:00-6:00 p.m, and then go back to church again for night service. Though she no longer attends night service, she claims her body still "shuts down" every Sunday from 4:00-6:00 p.m. "My body can tell when I didn't take a nap on Sunday," she explains. "I start to feel it in the week, it's so strange, like say about Wednesday I'll start to feel so overwhelmed with everything… feel so drained. I'm very tired just because I didn't take that nap on Sunday." She considers her weekly nap to be an important part of her schedule because it helps her prepare for the week and gives her the energy she needs to complete all of her school work.

William is a senior at UCF also taking four classes and working 19 hours a week with his job on campus. He reports napping one or twice a week for anywhere from one to two hours. When asked why he naps, he responded directly "I think it's good for the body." William's napping schedule was the most flexible of the employed participants, saying that if he wants to take a nap he generally is able to do so without significant conflict with his obligations. Patricia, a junior taking five classes and working between 10-15 hours a week, agrees that you just have to listen to what your body needs. She has an hour of her daily schedule set aside for her personal well-being, and while she most frequently goes to the gym during that time, if she is ill she will swap her gym time for a nap.

The two remaining nappers are Lisa and Nancy, introduced previously, who nap during the day as a way to pass the time. No other students reported this motivation.

Definitions of a Nap

One thing that became apparent during research was that there was no clear trend in how the students defined a "nap," or how long they expect a nap to last. Of the 19 students that specified how long they typically nap, eight specified 30 minutes or less, two reported 30-60 minutes, seven reported napping for 1-2 hours, and two specified napping for up to 3 hours.

The idea of a "power nap" was mentioned by four participants during their interviews but there was no particular consistency in how they defined a power nap. In their study investigating the relationship between daytime napping and nighttime sleep, June Pilcher, Kristen Michalowski and Renee Carrigan (2001:71) define a power nap as an episode of sleep typically less than 20 minutes that is frequently used as a "countermeasure to fatigue and sleepiness." Carol and Barbara echoed this definition and both limited their definitions to 20 minutes or less, and though Sandra did not provide a specific time frame she indicated a time notably less than the hour nap she took regularly. Nancy, on the other hand, defined a power nap as lasting approximately two hours. In addition to this, she spoke very negatively of a nap lasting only 15 minutes, claiming that such short naps are "too quick" and often result in headaches. Interestingly, Nancy frequently spoke about her sleeping and napping behaviors, as well as those of her older sister, in regards to the idea of "powering up." She explains, "That's what I call it, powering up. You need your rest… [if] you're not sleeping and you're doing this and you're doing that, you're putting all this wear and tear on your body."

More individuals, however, utilized "short" and "long" during their discussions regarding napping, and there are some interesting trends observed in their usage. A total of 17 students, including the power nappers, used at least one of these words in describing napping, with 5 of them mentioning both; however, only 8 participants spoke about "short" naps, and that is including all 4r students who spoke of power naps. The most interesting observation of this

semantic comparison is that the 8 participants who mentioned some form of "short" nap spoke about those naps positively, whereas the 14 participants who mentioned "long" naps all spoke about them negatively.

The difference in this perception is interestingly not linked to the actual time spent sleeping. Five of the eight participants who discussed "short" naps, including the power naps, defined them as roughly between 15-30 minutes, while the remaining three defined them in excess of an hour or two in length. On the other side, of the 14 participants who spoke of "long" naps, only six defined them in excess of an hour whereas another five defined them as less than 40 minutes (the remaining three did not specify a particular length of time). Instead, it appears that a participant's definition of a nap as either "short" or "long" is directly linked to how napping for a certain length of time makes them feel.

Jennifer compares her experiences with both "short" and "long" naps, explaining how on "the days that I have the short naps [defined as 20 minutes], I feel like a lot more organized. As opposed to when I do have my longer naps [defined as two hours], I usually just feel groggy when I wake up." When comparing the two, Karen provides an almost identical sentiment: "With the short ones [30 minutes], once I wake up I'm a little more energized, I've had a little bit of rest and my brain is able to shut off for a little while. The longer naps [over 30 minutes] I'm just lethargic and tired and my body just feels heavy. I'm just so tired because I over-slept." Nearly every other student who mentioned "long" naps spoke of them similarly. While "groggy" was

the most widely reported side effect, others cited feeling "lethargic", "too tired" to do anything, "lazy", "grumpy" and even "melancholy." Two even reported getting headaches if they napped for too long. For some students, these side effects play an important role in how they view napping overall.

Napping: Good or Bad?

With napping so prevalent among students, do they view it positively or negatively? Based on their responses, 14 participants view napping positively and 9 view it negatively. Those who view napping in a positive light do so for reasons largely discussed in the previous sections of this chapter: it helps them catch up on missing sleep and they consider it good for their health. Quite a few students reported that napping positively affects their academics in some manner. Richard, a part-time senior, explains "if I hadn't gotten in the habit of napping, my grades probably would have suffered. It restores my concentration." Others mentioned naps restoring energy and helping them get through class work or extracurricular obligations, and a few students discussed the benefits that napping can have on memory and performance.

Charles, a freshman and avid piano player, drew a connection between napping and his ability to process information from the day. He explains, "After I take a nap things will come together in my brain. I feel like after I [nap], all the practice I've done comes together more. I feel like there's some connections made there... I'll come back to something I was working on and it will

make a lot more sense." All but one of the individuals who view napping positively reported napping at least on occasion. James, introduced in the previous chapter, acknowledges that while his sleeping difficulties prevent him from taking a nap during the day, it can be very beneficial for the people who are able to engage in the behavior. He was the only non-napping participant to share this opinion.

The nine individuals who view napping in a negative light do so for mostly the same reasons participants reported disliking "long" naps. Students report feeling "groggy," "lethargic" and "sluggish" from taking naps during the day. As a result of these side effects, Sharon, a full-time student, actively avoids napping during the day "because I feel it's *bad for me*" (emphasis added). No other student expressed feeling as though napping was bad for their health, but several admitted they avoid taking naps because of these negative side effects. Other students dislike napping because of the difficulty they have falling asleep, making it nearly impossible for them to nap for a short enough length of time to avoid these side effects.

What is most interesting about the nine students who report negative opinions regarding daytime napping is that, while three of them refuse to nap because of this opinion, six of them still report napping regularly. These individuals, however, do not provide any additional reasons why they dislike napping. Though there is a correlation between how much sleep these students get at night and the length of their typical nap, with three participants reporting six or fewer hours a night and naps at least two hours long, there is no correlation between how much sleep they get

at night and how frequently they nap. In fact, there is no reported difference between these students and the others in this study that would explain why they view napping negatively yet still engage in it.

In all, students are napping for a variety of reasons – everything from catching up on missed sleep the night before to addressing temporary illness to passing free time were mentioned by the participants. 21 students, 84% of the respondents, report engaging in napping behavior at least as needed, with 9 napping at least once a week. Four students abstain from napping for a variety of reasons but typically due to personal difficulties falling asleep and observed negative side effects. One of the biggest findings regarding napping was the broad range of definitions students assigned to the practice. A semantic consistency, such as the phrase "power nap", was not associated with a practical consistency, as student definitions of a power nap ranged from 15 minutes to two hours. Usage of "short" and "long" in personal definitions was also a common practice, but more students spoke about long naps than short ones. Of these definitions, everything described as a "long" nap was discussed negatively, whereas most of the "short" naps were handled positively. However, much like the usage of "power nap", neither "long" nor "short" naps exhibited any consistency in length; in fact, the shortest "short" nap was only 15 minutes less than the shortest "long" nap.

Instead of being tied to a particular time frame, these definitions were instead associated with how the nap made the students feel – naps associated with positive feelings of well-being were

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considered "short", whereas naps associated with negative feelings were considered "long." Not surprisingly, these personal definitions and experiences reflected a general opinion of napping overall. Fourteen students have a positive opinion regarding midday napping, and the reasons they give for this perspective mirror the positives of "short" naps; similarly, the nine students who have negative opinions of midday napping list the same reasons for their opinion as the students who described "long" naps. The most perplexing group of students is of the six regular nappers who have a negative opinion of the practice. An analysis of the reported data provides no explanation for the conflict between their belief and their behavior, revealing a gap in the methodology of this study. Further investigation would be necessary in order to explain the motivation behind the actions of these students.

Chapter Four: Composite Understandings of Sleep and Productivity

One of the primary findings of Antje Richter's (2003:32) and Li Yi's (2003:50) analysis of

Chinese culture was the degree to which sleep was utilized in social and political discourses as a

rhetorical device to convey standards regarding economic and moral productivity. In the West,

the Protestant work ethic is frequently seen as a reflection of these same principles, and scholars

such as Simon J. Williams and Sharon Boden (2004:4), Megan Brown (2004:176) and Matthew

J. Wolf-Meyer (2012:160) discuss how this ethic continues to influence the social

understandings of sleep in Western developed nations. In addition to their discussions, Leon

Kreitzman (1999:98) examines how modern political figures, like John F. Kennedy, Winston

Churchill and Margaret Thatcher, have utilized sleep as a rhetorical device to establish a standard

of solidarity and commitment to their obligations in public office. Despite this literature,

however, there is little research exploring whether sleep and productivity are understood in

relation to one another.

The primary question this chapter discusses is whether or not there is a relationship between

sleep and perceptions of productivity for college students. The narratives demonstrate that while

there indeed is a relationship, it is complicated and varied.

Early on in the research process it became rapidly apparent that the way in which participants

utilize and understand what "productivity" means rather obviously influences how they analyze

and discuss its role and influence in their lives. As such, the guiding questions used during the interviews were adjusted to include an investigation into these personal definitions, as well as include directly asking each participant if they believed they were productive. The insights these last-minute additions provided have proved to be an important component of the overall analysis. At large, the students in this study believe themselves to be productive individuals: 18 participants reported believing they are productive and 5 believe they are not. Two participants declined to respond and as such will not be factored into any of the following discussion. For the sake of brevity, the students who self-identified as productive will be referenced as group P, and the group that self-identified as not productive will be referenced as group N.

Interestingly, there are few reported data points that appear related to a student's understanding of their productivity. Everything from a their extracurricular responsibilities, including volunteering, club activities and employment, to their opinions on napping, personal napping behaviors and reported sleeping habits were examined, and are compared in table 3, but they do not appear to be linked to their perspectives on productivity.

In addition to their disagreement on personal productivity, group N is different from group P in two aspects. As mentioned previously, in group N only 20% students have a negative opinion of napping, whereas 39% of group P is of that opinion. Along the same line, 40% of group N students believe they get enough sleep, as opposed to the 67% of group P that believe the same. While there is no specific reason for this belief, there is a surprising correlation with the average

amount of sleep reported. Of the 5 students in group N, all 5 reported getting 6 or fewer hours of sleep at least several nights a week – in comparison, only 22% group P reported similar averages.

These differences, however, are not significant enough to explain why some students believe they are productive, yet other students believe they are not productive. With no objective explanation, we must examine the students' subjective understandings of what productivity means.

<u>Defining Productivity in Relation to Sleep</u>

Productivity, though it is often discussed in everyday culture, is a concept that does not carry a standard definition or meaning in the same way as the ideas "producer" or "consumer". While business literature defines productivity as increased output for measured input (Hitt and Brynjolfsson 1996:122), the social sciences define it as any activity that creates goods or services, regardless of payment (Moody 2010:409) and in political discussions productivity is defined in terms of economic growth and production efficiency (Klein and Luu 2003:433-434). When undertaking this research, it became rapidly clear that the students did not consistently ascribe to any one definition – instead, they each held their own definitions of what productivity meant to them in their lives. Understanding how they define the term is key to understanding how they interact with, utilize, and apply it.

Though each definition was unique, there were four main ideas that were common between both groups, those being: output/product, value, goals and effort. To examine the prevalence of these ideas among each identifier, we will first look at group P, and then compare their responses with that of group N.

"Productive" Definitions

Within group P, exactly half of the students mentioned only one idea in their personal definitions, 44% mentioned two, and only 6% mentioned three. No student used all four. They are discussed below in order of popularity.

Definitions of productivity regarding the output or product created were the most popular within group P, with 13 (72%) including it as either the sole definition or a component in a composite definition. For David, output was the single most important factor in his personal definition. He explains, "I feel like productivity is being able to show what you've done with your time…. There has to be an outcome." Karen takes the idea of productive output one step further and explains that while the volume of work is an important factor, it has to be "positive work." She explains this positive work as something that is "useful in the long run," saying that if, for example, you did really well on your homework but you did the wrong section, that activity was

not productive because it was of no use in the long run. Jennifer echoes this idea of useful output in her definition, saying "if I study for three hours and get a C on the exam, I don't feel like that generated any productivity for me; as opposed to studying for seven hours and getting a high A – that generates productivity." For these students, the output or product of their time is an important part of whether or not they consider themselves productive. As David says, "the one resource we all have is time – what you do with your time is important."

Value was the second most popular idea expressed by group P, influencing the definitions of six (33%) individuals. For Charles, productivity is, quite simply, "the ability to get the things done that I consider valuable." Included in his list of valuable activities was studying, playing the piano, and anything that "will help me in the future, or that I enjoy, or that will make me happy." Maria expressed a different kind of value in her definition of productivity. She considered "finding a way to please everyone at the same time" and still having time for herself as the primary basis of her definition, thereby assigning the opinions of others a greater value in her assessment than other factors. Her perspective on the productivity of social events and outings reflected this same valuation system. In her opinion, going out only occasionally "is not enough to others," and because it doesn't meet their expectations of her she does not consider that time productive.

Maria, however, was not the only participant to value the opinions of others in defining their personal understandings of productivity. Betty admitted that she bases her idea of productivity

"off what my mom would like, so I'm kind of like 'What would my mom be proud of me for doing today?'" Richard, similarly, admits that "my dad's opinion is really important to me, and if I feel like he would judge something I'm doing as not productive then I feel a pressure that I'm being hedonistic and overly indulgent. I try really hard to make sure that what I choose is really productive." These individuals define and moderate their productivity based either on what they, or those important to them, deem valuable.

Effort and activity was the next most popular idea expressed by group P, with five (28%) of students including this idea in their definitions. These students consider the personal effort they invest or the activity level they maintain to be directly related to their productivity level. For Susan, productivity is about conserving effort, and getting things done in the most "efficient manner." However, for other participants it is more important for them to stay busy than it is for them to consolidate their efforts. Sharon ties her feelings of productivity to her ability to "constantly be doing things all day," a sentiment shared by Sandra and Patricia. "I like being busy," Patricia explains, "If I have days where I'm not busy then I don't feel like the day was successful."

The least popular idea mentioned by the "productive" group was that of achieving or working toward personal goals, with only four (22%) including it in their definitions. Perhaps more interesting is that only one individual spoke about long-term goals – the rest tied their productivity to their ability to meet daily goals. Lina, for example, sets a goal of what she wants

to accomplish at the beginning of each day and "if I haven't managed to finish it by the end of the day I feel like my day wasn't productive." Interestingly, Lina uses this strategy for both school work and relaxation, saying that if she intends to spend a day simply watching TV she will still consider that "a productive day because that was my goal." Donna breaks her day down further than Lina, setting goals for certain time frames. For example, she will set small goals such as having the kitchen cleaned by 2:00 p.m., then completing her math homework by a 4:00 p.m., and then getting dinner made by 6:00 p.m. She explains, "even if it's only a small amount of things, having them done in a reasonable amount of time, in the manner I intended them to be, is productive to me." While these personal goals keep them on track to complete their assignments on time, they put more productive value in the achieving the goal itself than the outcome of the assignment they were working on. That is not to say the grade or evaluation is not important, but that they do not factor it into defining if their time was productive or not productive.

"Non-Productive" Definitions

The self-deemed nonproductive students offered some significantly different definitions of productivity. While the four primary ideas were all present in their definitions, they were utilized in different proportions and in different ways than among the other group.

Effort and output/product were used by only one student each, and the manner in which they were utilized is not notably different than that of group P. Value was mentioned also by two students; however their utilizations differed from group P in several ways. For example, Nancy regularly volunteers at a local assisted living and expressed a lot of joy related to this responsibility. When asked about her productivity, she responded that she has too much free time and she would rather use that time to do something she considers valuable, like earn money to help her parents pay their bills or volunteer more at the assisted living. She was upset with how much time she spent sleeping and napping when she should be doing things that ultimately had a greater impact outside of her own life. She wants to use her time to "change or fix other things" – to do "something productive."

Helen also used the idea of value in her definition of productivity, but did so in a manner unlike any other student. While all students were asked if they consider social activities to be productive, Helen considers social interaction to be integral to her general assessment of productivity. More than that, even, is that those interactions have to be "meaningful." During her interview, she spoke very highly of the individuals and friends she considers to be close to her, and she emphasized the importance of "having someone to turn to." On the other side of that, however, Helen also reported a lot of social interaction related stress and anxiety.

The biggest definition related difference between both groups was in regards to how each utilized goals as a component of their understanding of productivity. Whereas only 22% of group

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P mentioned goals, and did so almost entirely in reference to short-term or daily goals, 80% of group N based their definitions on goals, and all of them did so in reference to their long-term goals. Helen, for example, expressed a lot of concern over the fact that she was not actively making progress on the things she wants to complete by her 30s. William, a film major, based his entire personal definition on this one idea. He expressed a general feeling of malaise in regards to his productivity, saying "I have these long-term goals of what I want to do creatively but I feel like I often just don't have the time for it." Despite balancing full-time classes, being involved in a club on campus and working about 20 hours a week, he does not often feel like his days have been productive because he ties his productivity so closely to the creative endeavors he does not have enough time to pursue.

Despite recognizing that he is involved in a lot of things the average student is not, James, who balances full time classes, a job, weekly volunteering, club activities and intensive grad school applications, does not consider himself productive. "I never feel satisfied with that I've done because I'm always thinking about what I haven't done," he explains. He bases his productivity on the progress he makes on each of his long-term goals and more specifically on not falling behind his personal schedule for each of them. In his opinion, productivity is "something that I'm always approaching and sometimes I'm closer to than others but never quite there."

Insights from Napping

After defining their personal perspectives on productivity, students were asked if they believed that daytime sleeping increased or decreased their productivity for the remainder of the day. Interestingly, there was no clear consensus, and opinion did not seem related to perspectives on personal productivity. Of the 25 participants, 11 reported feeling that napping can increased productivity, 9 feel as though it hurts it, and 5 were neutral on the topic.

The participants who reported that napping helps their daily productivity claim that is reenergizes them, allowing them to continue working or to be able to work longer without getting tired. Charles explains it as a cost-comparison situation: while he would rather not nap during the day and take care of his obligations, if he is too tired and feels like he could not do anything productive with his time, he will take a nap "so the whole day is not lost." He explains that after taking a nap, he is able to engage in the activities that he needs or wants to do that he was too tired to do previously. For other participants like Helen, taking a midday nap helps their productivity by improving their overall mood which then makes it easier for them to complete the work they need to do.

A few participants went on to say that by taking the time out of their day to take a nap they not only felt more energized but also that they needed to be more productive afterward to make up for the time they spent asleep. Lisa explains, saying that after a nap "I feel like I want to be productive more because I took that time to sleep, and I'm like 'Okay, now I need to get to it.'"

Almost hand in hand with this perspective, however, is the idea that midday napping negatively impacts productivity because there are more important things to do with that time. For Donna, napping leaves her feeling like "I've lost a huge chunk of my day and… usually I have something I had to do during that time." For participants like Elizabeth, this feeling actually prevents them from engaging in napping. She explains, saying "You're missing out on something during the middle of the day…. when you could be doing something." As Nancy says, "You could be getting stuff done. You can sleep later." For Betty, midday napping is only something you do when you have nothing else planned for the day. She explains, "for me it always seemed like a waste of time…. From my perspective, napping is kind of a weakness, like you cannot get on this set schedule, so you are encouraging a behavior that is bad and excusing it for yourself."

In regards to sleep, particularly midday napping, responses were torn almost equally between it positively or negatively affecting a person's productivity. The idea of napping as a waste of time is one that can be traced back to the Protestant Work Ethic, which classifies such activity as indulgent and inappropriate, and states that all available time should be invested in activity (Jones 1997:761). The idea mentioned by some of the participants wherein you have to "make up" for the time spent sleeping also ties into this ethic of activity. Overall, however, the fact that only five participants did not have particular feelings either way regarding the positive or negative effect of napping on productivity, and that the remaining participants all mentioned

purposefully practicing or avoiding napping to either capitalize upon its benefits or avoid its

drawbacks indicates a cognitive association between engaging in particular sleeping behaviors

and moderating personal productivity.

The Role of Anxiety

Despite all of this, the differences observed between group P and group N are not simply

restricted to how much sleep they get at night and how the define and understand productivity in

their own lives. Over the course of the interview process, ten individuals indicated that anxiety

interferes with their ability to sleep at least several times a semester. For some, this anxiety is a

direct response to an increase in academic stress around midterms, finals or large projects, but

for others this anxiety manifests itself on a regular basis. What is most interesting about those

who deal with these anxieties is how it is distributed along similar lines as self-perceived

productivity. In total, 33% of group P reports at least occasional anxiety, yet 80% of group N

reported the same. When narrowing the focus further and looking at only those individuals who

report anxiety interfering with their sleep on a regular basis, only 17% of group P report these

conditions while 60% of group N report the same.

In analyzing what anxieties keep them up at night, nearly every individual who reported

experiencing anxiety described it in relation to the things they either already did that day or still

had to do, or both. Only one individual did not cite this reasoning, who instead is has trouble

sleeping due to her social anxieties and personal phobias. Interestingly, another participant

described her anxiety as both related to school responsibilities and her inability to get as much

sleep as she believes she needs, which in turn will often keep her awake. However, the large

majority of these students are kept up with anxiety about things they need to do.

A Complex Relationship

While the members of group P provide a lot of important data that help us understand how

students manage and regulate their sleeping habits, as well as how they understand and define

productivity, it is the small group of students in group N that help us best recognize and perhaps

understand the relationship between collegiate sleep and perspectives on productivity. These

students not only consistently report six or fewer hours of sleep several times a week, a greater

percentage of them believe they don't get enough sleep overall. In addition, more of them have a

positive opinion regarding midday napping than the sample group at large. In regards to personal

definitions of productivity, while they utilize the same four primary ideas, they focus

significantly more on long-term goals than the other group. More of them also report anxiety

interfering with their sleep, with 80% experiencing this at least several times a semester, and

60% experiencing it on a regular basis.

In light of these findings, there does appear to be a connection between how much sleep a

college student gets and their personal understanding of productivity. It seems that basing your

personal perspective on predominantly long-term goals leads to some degree of anxiety-induced sleeping difficulties. The reason for this anxiety is often linked to things that the individual has yet to complete – for a student assessing their daily activities according to their progress on long-term goals, trying to sleep with a list of incomplete tasks is a regular occurrence but it clearly interrupts their sleep on a consistent basis. Whether anxiety is the sole reason behind why self-labeled "nonproductive" students report fewer than six hours of sleep several nights a week is not clear, but it does suggest that how they perform according to their personal productivity during waking hours can and does influence the sleep they get at night.

Based upon the sample size involved in this investigation, the relationship between these trends is notable. When listed together – the difficulty sleeping due to anxiety, the regular lack of sleep reported, the focus of defining productivity according to long-term goals, and the negative assessment of personal productivity – they appear almost cyclical; however, if the relationship is in fact cyclical in nature, it is difficult to say which of the four components leads to the establishment of the others. Regardless, it is difficult to ignore the degree to which they were observed together.

Chapter Five: Conclusions

The purpose of this study was to investigate the ways in which college students conceptualize and understand sleep, particularly the relationship between sleep and productivity or lack thereof. The findings made in regard to this relationship are best reviewed through the theoretical framework of the political economy.

Overall, the political economy of Western society is hugely influencing how these students are practicing their sleeping behaviors. In general, Western society has established a standard of daytime activity that is inherently tied to the economic system and at least loosely based upon the Protestant Work Ethic. There is this idea that an individual has to do certain things in particular ways in order to participate in and benefit from the economic structure of society. If an individual does not comply with these standards of practice, they frequently run into many obstacles when they try to engage in the social economic system.

In relation to this study in particular, the influence of the Western political economy can be seen in how these students are engaging in and thinking about their sleeping behaviors. For example, every single participant engages in the culturally predominant monophasic, or single period, sleeping pattern, and almost all of them do so overnight. This leaves the daytime free for them engage to both socially and economically with society at large. The few students who deviated

from this standard of monophasic sleep did so infrequently and solely as a coping strategy to balance the requirements of their daily life with their physiological need to sleep.

In addition to this, the participants reported viewing daytime napping in a positive light only when it does not interfere with the individual's ability to function according to their standards for the rest of the day. In fact, most participants discussed managing their daytime sleep according to how it could potentially either positively or negatively affect their personal productivity.

Furthermore, it appears that how the participants define productivity in their personal lives influences how they perceive themselves as able to meet the standards of productivity that they have internalized throughout their life. The participants that shape their definitions primarily according to output, value or effort more readily assess their personal productivity positively; whereas those that define their productivity according to long-term goals and their inability to complete those goals in what they believe to be a timely manner more readily assess their personal productivity negatively. This negative assessment and the resulting cognitive dissociation between personal activities and perceived standards in turn appears to cause psychological stress and anxiety that in turn is impacting these individuals' ability to sleep.

As Ben-Ari (2012:108), Takahashi (2012:2) and many of the other researchers mentioned in chapter one have outlined, and as many of the participants themselves mentioned observing in

their lives, a lack of sleep can have very detrimental physiological and psychological effects. If how these individuals are understanding productivity is affecting the manner in which they are practicing their sleeping behaviors, which based upon this study it appears to be doing, it is important that we investigate this relationship and understand the extent to which it is potentially affecting their wellbeing.

Additionally, it is important to examine how individuals conceptualize and understand the relationship between sleep and productivity because, as mentioned before, these two ideas are often discussed in relation to one another. Unfortunately, sleep is most frequently positioned in opposition of productivity. As Antje Richter (2003:34) describes, "to label someone as one who is 'early to rise and late to bed' is not primarily intended to give information on his or her sleeping habits but to characterize the degree of commitment to his or her respective business." Rhetoric drawing upon the ideals of the Protestant Work Ethic suggests that ignoring the "demands of human nature" to instead focus on activity, particularly that associated with economic benefit, is not only admirable but morally good (Jones 1997:760). Consequently, public political figures will often attempt to convey the idea that they are able to "manage with hardly any sleep" and are instead working tirelessly for the good of the country (Kreitzman 1999:98). The idea of productivity as existing in the absence of sleep has permeated daily life and a person's attitude toward sleep, instead of being a reflection of personal health practice, now "serves as a convenient indicator of the extent of [their] self-control and self-discipline" (Richter 2003:36). Sleep is instead viewed as "self-indulgent" (Steger and Brunt 2003:1), lazy

(Yi 2003:60), "a necessary evil" and even "a waste of time" (Richter 2003:36). Understanding how and to what extent individuals are internalizing this sort of rhetoric is a key component to not only developing concepts for anthropological investigations of sleep, but also for developing a healthy approach to proper sleep education.

The findings of this study are an important contribution to the field of anthropology, but more specifically to anthropological investigations of sleep. As outlined in chapter one, there is a significant lack of research in this particular field. In addition to a general lack of data, Galinier et al. (2010:821) lament the lack of appropriate concepts and "measuring tools to tackle the subject" from a research perspective. The findings of this study not only contribute to the general pool of data, but suggest that exploring and understanding how individuals conceptualize the very practice of sleep is a necessary component of this type of research. Objectively observable data is insufficient in explaining the beliefs and perspectives held by sample populations.

The significant variation observed in the personal definitions of naps and activity present valuable information for policy-making as well, particularly public health policy. Recognizing that such variation in understanding exists, even within a restricted population, emphasizes the need for a more comprehensive approach to public education. Consistent terminology is not equivalent to consistent meaning, and the differences that might exist between individuals need to be addressed for policies to most effectively achieve their desired outcomes.

For future research exploring sleep and its relationship to productivity, it is suggested that the role of expectations and standards be more thoroughly investigated, as well as the behavioral standards associated with the social identity of being a college student. Additional studies, perhaps with a larger sample size, would contribute valuable data to understanding the strength of the relationship between sleep and perceptions of productivity within the population. Another suggested direction of study would be to investigate the influence of the Protestant Work Ethic among college-aged individuals and the manner in which this ethic influences their health behaviors. Regardless of the specific focus, any additional anthropological research on the topic of sleep is greatly encouraged as it would provide important data to the still developing subfield.

Bibliography

Arand, Michael H. Bonnet and Donna L. (2011). How Much Sleep Do Adults Need? Retrieved 02/20/2013, from http://www.sleepfoundation.org/article/white-papers/how-much-sleep-do-adults-need

Ben-Ari, Eyal. (2003). Sleep and night-time combat in contemporary armed forces. In B. Steger, and Lodewijk Brunt (Ed.), *Night-time and Sleep in Asia and the West* (pp. 108-126). New York: RoutledgeCurzon.

Brown, Megan. (2004). Taking Care of Business: Self-Help and Sleep Medicine in American Corporate Culture. *Journal of Medical Humanities, 25*(3), 173-187.

Brynjolfsson, Lorin M. Hitt and Erik. (1996). Prductivity, Business Profitability and Consumer Surplus: Three Different Measures of Information Technology Value. *MIS Quaterly*(June 1996), 121-142.

Calamaro, Christina J., and Thornton B. A. Mason, and Sarah J. Ratcliffe. (2009). Adolescents Living the 24/7 Lifestyle: Effects of Caffeine and Technology on Sleep Duration and Daytime Functioning. *Pediatrics, 123*, e1005-e1010.

Carskadon, Mary A. (1999). When Worlds Collide: Adolescent Need for Sleep Versus Societal Demands. *Phi Delta Kappan*(January), 348-353.

Colrain, Ian M. (2011). Sleep and the Brain. *Neuropsychological Review, 21*, 1-4.

Curcio, Giuseppe, and Michele Ferrara, Luigi De Gennaro. (2006). Sleep loss, learning capacity and academic performance. *Sleep Medicine Reviews, 10*, 323-337.

Drummond, Sean P. A., and Gregory G. Brown, J. Christian Gillin, John. L. Sticker, Eric C.
Wong, and Richard B. Buxton. (2000). Altered brain response to verbal learning
following sleep deprivation. *Nature, 403*, 655-657.

Galinier, Jacques, and Aurore Monod Becquelin, Guy Bordin, Laurent Fontaine, Francine
Fourmaux, Juliette Roullet Ponce, Pierro Salzarulo, Philippe Simonnot, Michele
Therrien, and Iole Zilli. (2010). Anthropology of the Night: Cross-Disciplinary
Investigations. *Current Anthropology, 51*(6), 819-847.

Jones, Harold B. (1997). The Protestant Ethic: Weber's Model and the Empirical Literature.
Human Relations, 50(7), 757-777.

June J. Pilcher, Kristen R. Michalowski, Renne D. Carrigan. (2001). The Prevalence of Daytime
Napping and Its Relationship to Nighttime Sleep. *Behavioral Medicine, 27*, 71-76.

Kreiner, Josef. (2003). Foreword. In B. Steger, and Lodewijk Brunt (Ed.), *Night-time and Sleep
in Asia and the West* (pp. ix-x). New York: RoutledgeCurzon.

Kreitzman, Leon. (1999). *The 24 Hour Society*. London: Profile Books Ltd.

Luu, Peter G. Klein and Hung. (2003). Politics and Productivity. *Economic Inquiry, 41*(3), 433-
447.

Mayo Clinic. (2010). Napping: Do's and don'ts for healthy adults.   Retrieved 06/29/2012, 2012,
from http://www.mayoclinic.com/health/napping/MY01383

McCabe, Donald L., Linda Klebe Trevino and Kenneth D. Butterfield. (1996). The Influence of
Collegiate and Corporate Codes of Conduct on Ethics-Related Behavior in the
Workplace. *Business Ethics Quarterly, 6*(4), 461-476.

McCoy, John G., and Robert E. Strecker. (2011). The cognitive cost of sleep lost. *Neurobiology of Learning and Memory, 96*, 564-582.

Milner, Catherine E., and Kimberly A. Cote (2009). Benefits of napping in healthy adults: impact of nap length, time of day, age, and experience with napping. *Journal of Sleep Research, 18*, 272-281.Moody, Harry R. (2010). *Aging: Concepts and Controversies*. London: Pine Forge Press.

Morgenthaler, Timothy. (2010). How many hours of sleep are enough for good health? Retrieved 02/20/2013, from http://www.mayoclinic.com/health/how-many-hours-of-sleep-are-enough/AN01487

National Sleep Foundation. (2011). Napping.   Retrieved 06/29/2012, 2012, from http://www.sleepfoundation.org/es/article/sleep-topics/napping

Noland, Heather, and James H. Price, Joseph Dake, and Susan K. Telljohann. (2009). Adolescents' Sleep Behaviors and Perceptions of Sleep. *Journal of School Health, 79*(5), 224-230.

Orzech, Kathryn M. (In press; N.d.). A qualitative exploration of adolescent perceptions of healthy sleep in Tuscon, Arizona, USA. *Social Science & Medicine*, 1-8.

Owens, Judith A., Jessica Stahl, Alison Patton, Uha Reddy, and Megan Crouch. (2006). Sleep practices, Attitudes, and Beliefs in Inner City Middle School Children: A Mixed-Methods Study. *Behavioral Sleep Medicine, 4*(2), 114-134.

Richter, Antje. (2003). Sleeping time in early Chinese literature. In B. Steger, and Lodewijk Brunt (Ed.), *Night-time and Sleep in Asia and the West* (pp. 24-44). New York: RoutledgeCurzon.

Stanford University Medical Center. (2006). Nap A Day Makes Doctors OK, Stanford Study

    Finds.   Retrieved 06/29/2012, 2012, from

    http://www.sciencedaily.com/releases/2006/11/061101150526.htm

Steger, Brigitte, and Lodewijk Brunt. (2003a). Introduction: Into the night and the world of

    sleep. In B. Steger, and Lodewijk Brunt (Ed.), *Night-time and Sleep in Asia and the West*

    (pp. 1-23). New York: RoutledgeCurzon.

Steger, Brigitte, and Lodewijk Brunt. (2003b). Preface and acknowledgements. In B. Steger, and

    Lodewijk Brunt (Ed.), *Night-time and Sleep in Asia and the West* (pp. xi-xii). New York:

    RoutledgeCurzon.

Takahashi, Masaya. (2012). Prioritizing sleep for healthy work schedules. *Journal of*

    Physiological Anthropology, 31(6), 1-9.

Taylor, Paul. (2009). Nap Time *Pew Social & Demographic Trends*: Pew Research Center.

Williams, Simon J. and Sharon Boden. (2004). Consumed With Sleep? Dormant Bodies in

    Consumer Culture. *Sociological Research Online, 9*(2), 1-11.

Wolf-Meyer, Matthew J. (2012b). *The Slumbering Masses: Sleep, Medicine, and Modern*

    American Life. Minneapolis: University of Minnesota Press.

Wolfson, Amy R, and Mary A Carskadon. (1998). Sleep Schedules and Daytime Functioning in

    Adolescents. *Child Development, 69*(4), 875-887.

Yi, Li. (2003). Discourse of mid-day napping: A political windstock in contemporary China. In

    B. Steger, and Lodewijk Brunt (Ed.), *Night-time and Sleep in Asia and the West* (pp. 45-

    64). New York: RoutledgeCurzon.

Zhang, Guang-Jin, and Fei-fei Sun, and Jian-Qiao Liao. (2009). The effects of lunch time napping on habitual nappers' mental work efficiency in the afternoon and early evening: an empirical study from China. *Health, 1*, 284-289.