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篇名：

When Early Birds Meet Night Owls

早起鳥與夜貓子的對決

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I. Introduction

A. Background

Do you go to bed early and wake up full of energy, feeling lively and powerful? If so, you are considered the “early birds”. Or maybe you are just the opposite: You go to bed late and can’t leave your warm, lovely bed, fearing the noisy sound of the alarm. Then you are thought of as the “night owls”.

But what makes a person an early bird or a night owl? Environment, lifestyle, activities and childhood routines are all factors. However, some scientists think that your genes may play the most crucial role.

In the 2007 Science journal, scientists exclaimed that they have discovered a genetic mutation called the “after-hour genes”. It may explain why some people tend to be night owls. In the experiment, scientists found that “instead of following the typical 24-hour pattern, some of the mice had body clocks that stretched to up to a 27-hour day.” (The Telegraph, 2007). The DNA from the non Typical mice revealed that they have a kind of altered gene, named “after hours” or Afh, a variant of a gene called Fbx13.

Dr. Patrick Nolan, of the MRC Mammalian Genetics Unit, who led the study, said, “The internal body clocks of mice with the after-hour genes run on a longer cycle than mice that have a normal copy of the gene, who like most of us live on a 24-hour schedule.” In other words, night owls are able to stay alert longer than early birds since they have “after-hour genes”. This statement may make some people shocked, due to our stereotype that early birds always catch the worm while night owls don’t. In the following thesis, we are going to dig into the stereotype, and whether being an early bird or a night owl would influence high school students’ academic performance and creativity.

B. Motivation

Since we were little, our parents, teachers, and elders have taught us that “early birds” have more achievement than the “night owls”. Early birds get up early, totally awake for their brand-new day. In contrast, night owls burning the midnight oil and getting up late are considered lazy. This stereotype makes us believe the early birds catch the worm and have more achievement in the society. Take farmers for example.
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They work and sleep according to sunrise and sunset. So diligent are the farmers that they grow the crops providing everyone with energy to go through every day.

Farmers are typical early birds, respected by many people. However, artists, designers, editors, or writers tend to be night owls due to their different working hours. Though they are night owls, they are creative and productive, which is totally different from the stereotype.

Then, we read the article on Studio Classroom called “Night Owls and Early Birds” (Osment, 2011) about this issue by chance, and the research indicates that night owls can actually pay attention to what they do longer than the early birds. Because of 10 hours later of being awake, night owls can stay alert and attentive until bedtime. This research raises our interests to dig into the factors which determine why we are early birds or night owls, and how that influences students’ academics and creativity.

C. Purpose

Does the proverb “early birds catch the worm” still apply to the modern society as more and more people get used to working in night? In order to verify whether the proverb is correct, we are going to find out the reasons why people choose to be an early bird or a night owl, and explore how their schedule influence their performance.

D. Research Questions

In this study, the main questions we will look into are listed as follows.
RQ1. Why do students become an early bird or a night owl?
RQ2. How does being an early bird or a night owl influence students’ academic performance?
RQ3. How does being an early bird or a night owl influence students’ creativity?
RQ4. What do students think about the stereotype “Early birds get the worms”?

II. Thesis

RQ1. Why do students become an early bird or a night owl?

According to the research about what makes a person an early bird or a night owl, which is published in Science (2007), gene may be one of the factors that control
people’s internal body clocks. Later Dr. Steven A. Brown of the Institute for Pharmacology and Toxicology at the University of Zurich compared the effect of having the “after-hours genes” on late-risers to the effect of someone keeping time with a slow wristwatch (Owen, 2008). Dr. Brown also agrees that genes have a major influence on our internal body clock.

However, after making a survey of 71 senior high school second-graders’ opinions, we found that there are more causes affecting students’ sleeping time, such as environment, lifestyle, habits, etc. Here are the main reasons enumerated below:

a. Environment: The peaceful and silent atmosphere of early morning or late night affects people of choice of being an early bird or a night owl.

b. Lifestyle: Part of the night owls think that sleeping is a waste of time. So they don’t want to spend too much time lying in bed. On the other hand, part of the early birds attach importance to their health, and that’s why they’ll avoid going to bed too late.

c. Habits: Some students are used to sleeping late because they usually get a lot of homework and have to go to cram school till late night. It gradually leads them to have difficulty falling asleep in the early night. Other students were asked to go to bed early by their parents, and therefore their body clocks now make them sleepy in the early night every day.

d. Others: Many students must get up very early to catch up with the school bus or associations’ practice the next day, so they tend to sleep earlier than others at night.

Based on Figure 2.1, we can see that among the 25 early birds, 0 person is influenced by environment (0%); lifestyle influences 5 people (20%); habits influence 12 people (48%); and other factors influence 8 people (32%). Apparently few of the early birds are affected by environment. The major cause that makes them an early riser is their own habits. The habits lead them to keep early hours.
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Figure 2.1 The reasons why people become early birds or night owls

How about night owls? 7 of them are influenced by environment (15%); lifestyle influences 4 people (9%); habits influence 25 people (54%); other factors influence 10 people (22%). Obviously, it is habits that mainly affect night owls’ life schedule. As students, many of the participators have formed the habits of staying up studying till midnight from the time when they bury themselves into studying to be admitted to a nice high school.

RQ2. How does being an early bird or a night owl influence students’ academic performance?

Based on the report of National Geographic News, Christina Schmidt of the University of Liege in Belgium conducted a research in 2009 on the brain activity of early birds and night owls (2009). The research found that an hour and a half after waking, both early birds and night owls scored the same on tests focusing on attention. However, ten hours after waking, the “morning people” felt sleepier and performed more slowly on tests than the night owls.

Attention span has strong influence on students’ academic performances. In order to find out whether being an early bird or a night owl would influence students’ academic performance or not, we designed questionnaires to gather data for statistical analysis. The respondents gave scores from 1~5 to represent how much being an early bird or a night owl influence their academics and creativity. 1 means “No influence,” 2 means “Little influence,” 3 means “Some influence,” 4 means “Much influence,” and 5 means “Very much influence.”

As shown in Figure 2.2, when being asked if being an early bird or a night owl has any influence on academics, among 25 early birds, no one gives score 1 (0%); 4 people give score 2 (16%); 10 people give score 3 (40%); 9 people give score 4 (36%) and 2 people give score 5 (8%). Apparently, most people agree that being an early bird has influence on academics.
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On the other hand, as shown in Figure 2.3, when being asked if being an early bird or a night owl has any influence on academics, among 46 night owls, 4 people give score 1 (9%); 6 people give score 2 (13%); 14 people give score 3 (30%); 16 people give score 4 (35%) and 6 people give score 5 (13%).

Based on the statistics, most people agree that being an early or a night owl has influence on academics no matter which category they belong to. So, what influence? Is it positive or negative? And what is the reason?

According to our questionnaire, a majority of early birds think that when they go to bed and get up early, they feel energetic so they can study and concentrate in class.

On the other hand, for night owls, nearly all of them agree that they can study more efficiently at night because they feel more powerful and their train of thought will be clearer. They also admit that sometimes during class, they might fall asleep. The reason is that they stay up late the night before and the time of the next day’s class is too early.
RQ3. How does being an early bird or a night owl influence students’ creativity?

Professions such as writers, designers and artists require creativity, and stereotypically, they stay up late, claiming that they have more inspiration at late night. High school students also need exercise their creativity when doing homework or participating in various kinds of activities. Is being an early bird or a night owl influence their creativity?

In our study, among 25 early birds, 6 people give score 1 (“No influence”), and 12 people give score 2 (Very little influence). Obviously, more than a half people (18 people: 72%) think being an early bird has no or little influence on their creativity. The results are shown in Figure 2.4.

![Figure 2.4 Bar chart and pie chart showing the scores on creativity](image)

Does being a night owl have any influence on creativity? Among the 46 night owls, 15 people give score 1 (33%) ; 9 people give score 2 (19%) ; 14 people give score 3 (30%) ; 4 people give score 4 (9%) and also 4 people give score 5 (9%). The results are shown in Figure 2.5.

![Figure 2.5 Bar chart and pie chart showing the scores on creativity](image)

How do students think about the relation between bedtime and creativity? For
those early birds, sleeping time has little effect on individuals’ creativity. They think people are born creative or unimaginative. It doesn’t make them more imaginative to sleep earlier or later.

As for night owls, most of them also agree that whether someone is creative doesn’t depend on his or her sleeping time but on their talents. However, there’s still a part of the night owls feel more energetic and inspired in the silent night.

Generally speaking, Even though more night owls than early birds deem that they could be more creative at specific time, mostly at late night. For most of the students, being an early bird or a night owl doesn’t have much influence on their creativity.

RQ4. What do students think about the stereotype “Early birds get the worms”?

We wonder whether students nowadays still believe the stereotype of early birds and night owls. The questionnaires which we made have a conclusion to it. The result is evident that more students disagree with the stereotype than those who agree.

As shown in Figure 2.6, among 25 early birds, only 4 people (16 percent) agree with the stereotype of early birds. 21 people (84 percent) agree with it, though. How about night owls? Among 46 night owls, 8 people (17 percent) agree with the stereotype, while 38 people (83 percent) agree with it. Neither early birds nor night owls overwhelmingly agree with the stereotype.

![Pie charts showing percentage of students agreeing or disagreeing with the stereotype.](image)

Figure 2.6 The percentage of “agree” and “disagree”

The reason most students disagree with the stereotype is that they tend to believe people’s success lies in devotion of time and energy rather than the choice of being an early bird or a night owl. There are many factors deciding achievements,
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including efficiency, time management, energy level, internal body clock, and so on. Being an early bird or a night owl is only a personal choice, not a main factor to decide whether a person will become successful or not.

III. Conclusion

Based on our research, of all the respondents, both early birds and night owls become what they are because of habits. Habits play an important role on their choice of bed time. These students believe that the time they go to bed has a strong influence on their academic performance. Over half of the students, regardless of early birds or night owls, think their choice of bed time has at least some influence on their academic performances. Since class starts at 8:10 am in high school and students are required to come to school to study or take tests as early as 7:30 am, being an early bird seem to have some advantages over night owls. Although night owls should be at least equally focused or even “stay alert longer than early birds” according to Dr. Schmidt’s experiment (Minard, 2009), most of them think burning midnight oil has more negative effect on their academics because school starts when they feel sleepy.

Different from academics, however, most students think that being early birds or night owls has little influence on their creativity. They might think that being creative results not from sleeping time but from talents. As for the stereotype, about three-fourth students disagree with the stereotype “early birds catch the worm”. Obviously, the stereotype is not accepted by most of the students. Since “night owls” such as artists, designers, or editors can be very successful, students don’t think that being an early bird can always “catch the worm”. The stereotype established long ago may sound too out-of-fashion right now.

IV. References


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V. Appendix

Night owls v.s. Early birds

Dear respondents,

thank you for being willing to fill up this questionnaire. Through this interview, we want to find out why people have different lifestyles, what they think about the stereotype of early birds or night owls, and how their lifestyles influence their academics and creativity. Your response will be used for our research only, and we will protect your personal information. Please answer the question freely and explain yourself clearly. Thank you!

林容，林誼柔，馬世耘 from Class 219

Q1. Are you an early bird or a night owl?
A. I’m (a)… □ early bird □ night owl
   I think I become one because

_________________________________________

Q2. How much does being an early bird or a night owl influence you?
   (Directions for scoring: From 1 to 5.
Q 2.1 How much does being an early bird or a night owl influence your academics?
A. Score:____
   Reason(s):______________________________________________________________
Q2.2 How much does being an early bird or a night owl influence your creativity?
A. Score:____
Q3. Do you agree with the stereotype that early birds are more successful than the night owls?
A. □ Yes, I do. □ No, I don’t.
Reasons:__________________________________________________________________________