Chapter 2 – The Meaning and Measure of Happiness

- 1. Positive psychologists argue that national statistics describing how we are doing as a society provide a misleading view of happiness and health because they
 - A. only measure economic changes.
 - B. do not involve large enough samples.
 - C. do not measure happiness and positive mental health or functioning directly.
 - D. are biased by middle class values.
- 2. Positive psychologists argue that statistics on the *objective facts* of people's lives give a misleading view of well-being because
 - A. the facts of people's lives are not strongly related to their subjective interpretations.
 - B. the facts do not capture all the relevant objective features of an individual's life.
 - C. of the many regional and cultural differences that are glossed over by summary statistics.
 - D. the facts are biased towards the "haves" and do not fairly represent the life circumstances of the "have-nots."
- 3. The difference between hedonic and eudaimonic conceptions of happiness boils down to the difference between
 - A. pleasure/happiness and meaning/personal expressiveness.
 - B. pleasure and happiness.
 - C. short-term and long-term satisfaction.
 - D. serving the self and serving others.
- 4. The word "daimon" in eudaimonia refers to
 - A. happiness.
 - B. true self or spirit.
 - C. God or a transcendent power.
 - D. personal fate.
- 5. According to Waterman's studies, **eudaimonic** enjoyment results from activities that create feelings of
 - A. relaxation, excitement, and happiness that make us forget our problems.
 - B. personal expressiveness, meaning, challenge, competence, and growth.
 - C. spirituality and awe.
 - D. triumph and superiority.
- 6. When Waterman had people rate their 5 most self-defining activities according to their level of hedonic and eudaimonic enjoyment, he found that the hedonic and eudaimonic ratings
 - A. were largely unrelated.
 - B. showed almost complete overlap.

- C. showed substantial overlap (50 to 66%). D. were negatively correlated. 7. In a series of studies, Laura King and her colleagues examined the relationship between positive affect (e.g., happiness) and sense of meaningfulness or life purpose. Overall, these studies found that A. the experience of positive affect was consistently related to meaningfulness. B. positive affect and meaningfulness were unrelated. C. the experience of positive affect or happiness detracted from a sense of meaningfulness. D. meaningfulness and happiness showed an inconsistent relationship. 8. Subjective well-being (SWB) is defined and measured by A. happiness and health. B. personal expressiveness and happiness. C. life satisfaction and positive affect. D. life satisfaction, positive affect, and negative affect. Harker and Kletner examined the type of smile women showed in their women's college yearbook photographs and related smile-type to life outcomes 30 years later. What kind of smile predicted what life outcomes? A. Non-Duchenne smilers were generally unhappy and depressed. B. Duchenne smiles were related to greater health and happiness and more stable and satisfying marriages. C. Duchenne smiles predicted success and happiness, but were confounded with the effects of physical attractiveness. D. Duchenne and non-Duchenne smiles only predicted people's general feelings about life and not their actual competence, marital stability/satisfaction or health. A. are two ends of a single dimension or two independent dimensions of emotional experience.
- 10. The controversy regarding affect (emotion) concerns whether or not positive and negative affect
 - B. measures are valid and reliable or contaminated by self-report biases.
 - C. are adequate representations of people's complex emotional experiences.
 - D. are both necessary to define happiness or if positive affect is sufficient.
- 11. According to research by Diener and his colleagues, happiness is built more of positive emotions than on their 2.__ on the 1. A. 1. diversity 2. intensity B. 1. intensity 2. frequency C. 1. frequency 2. intensity D. 1. intensity 2. diversity
- 12. The **peak-end rule** says that the impact of an emotional experience is determined by

- A. the duration and peak-end intensity of the experience.
- B. the peak of emotional intensity and the ending intensity and not the duration of the experience.
- C. the average of the lowest and highest peak intensity.
- D. only the duration because peak and ending intensity make little difference.
- 13. Experience Sampling Methods (ESM) involve
 - A. recording "real time" changes in emotional experience and retrospective recording shortly after events occur (e.g., daily diary).
 - B. global ratings of critical life events that sample the most important experiences in people's lives.
 - C. recordings of people's emotions and actions by neutral observers.
 - D. thematic statistical analysis of people's self-reported "best" and "worst" life experiences.
- 14. The day reconstruction method developed by Kahneman and his colleagues asks people to
 - A. record their emotional reactions during the day using a small handheld computer.
 - B. reconstruct their day as a sequence of episodes or scenes in a film and giving each episode a short name.
 - C. reconstruct their day around those activities that had the greatest emotional impact.
 - D. reconstruct their day by specifying what happened and how they felt during each hour after they awoke.
- 15. The different information that may be gained through Experience Sampling Measures compared to Global Self-Report Surveys is highlighted in the Kahneman et al. study using the day reconstruction method. According to global surveys, raising children is a significant source of 1._____ for most people. In contrast, Kahneman et al. found that women's day to day (ESM) **positive emotional ratings** of "taking care of my children" were
 - A. 1. regret and frustration 2. very high
 - B. 1. happiness 2. dependent on the support they got from their husbands.
 - C. 1. life satisfaction 2. lower than watching TV, shopping or fixing meals
 - D. 1. life satisfaction 2. were only high on the weekends when they could spend quality time with their kids.
- 16. According to your text's comparison of Experience Sampling Methods (ESM) and Global Measures, each measure has a "maximal sensitivity" to different influences on well-being. Which of the following best describes these different sensitivities?
 - A. ESM is most sensitive to stable personality trait influences, while global measures are more sensitive to situational influences.
 - B. ESM is most sensitive to individual differences in well-being and global measures are more sensitive to commonalities among people.

- C. ESM is most sensitive to psychological variables and global measures to social variables.
- D. ESM is most sensitive to situational influences and global measures are most sensitive to stable personality trait influences.
- 17. A criticism made of the hedonic definition and measure of subjective well-being by eudaimonic researchers such as Carol Ryff is that the hedonic view
 - A. does not specify the basis and meaning of well-being.
 - B. tells us if people are happy, but not why people they are happy.
 - C. does not distinguish between happiness and health.
 - D. all of the above
- 18. In the model of positive or complete mental health developed by Ryff and Keyes, the dimensions of psychological well-being and social well-being attempt to measure and define the
 - A. specific aspects or markers of positive functioning.
 - B. positive side of mental illness.
 - C. strengths and weaknesses of people dealing with emotional problems.
 - D. the psychological ingredients for successful mental illness recovery.
- 19. Self-determination theory specifies three needs as the foundation for well-being. These are
 - A. autonomy, self-esteem, and nurturance.
 - B. independence, esteem, and belongingness.
 - C. autonomy, competence, and relatedness.
 - D. autonomy, self-esteem, and success.
- 20. In their 14-day diary study of "what makes a good day," Reis, Sheldon, and colleagues found that needs for relatedness and autonomy were more likely to be satisfied
 - A. on Friday night.
 - B. on weekends.
 - C. in the period following an event that *increased* a sense of competence.
 - D. in the period following a *decreased* sense of competence.
- 21. In their 14-day diary study of "what makes a good day," Reis, Sheldon and colleagues examined the relationship of need fulfillment to well-being and happiness. Results showed that
 - A. only trait measures of need fulfillment were related to well-being.
 - B. only state measures of need fulfillment were related to well-being.
 - C. both trait and state measures of need fulfillment were related to well-being and relatedness needs had the most impact on daily well-being.
 - D. both trait and state measures of need fulfillment were related to increased well-being and competence needs had the most impact on daily well-being.
- 22. According to your textbook authors, a basic *difference* between hedonic and eudaimonic approaches to understanding happiness and well-being is that

- A. hedonic approaches are "research driven" and eudaimonic approaches are "theory driven."
- B. hedonic approaches are "theory driven" and eudaimonic approaches are "research driven."
- C. hedonic approaches emphasize quantitative measurement and eudaimonic approaches emphasize qualitative measurement.
- D. hedonic approaches emphasize qualitative measurement and eudaimonic approaches emphasize quantitative measurement.
- 23. Based on studies examining the relationship between hedonic and eudaimonic measures of happiness and people's everyday understanding of the meaning of a good life, your textbook authors argue that hedonic and eudaimonic views
 - A. are two distinct and largely independent ideas about the meaning of happiness.
 - B. are complementary and interrelated.
 - C. cannot be compared because relevant research is lacking.
 - D. have recently been integrated into a single new model of happiness.

Chapter 2 – Answer Key

- 1. C p.15-16
- 2. A p.16
- 3. A p.17-19
- 4. B p.18
- 5. B p.19
- 6. C p.19
- 7. A p.19-20
- 8. D p.21
- 9. B p.23
- 10. A p.23-24
- 11. C p.24
- 12. B p.26
- 13. A p.26-27
- 14. B p.27-28
- 15. C p.27-28
- 16. D. p.28-29 17. D p.29-30
- 18. A p.30
- 19. C p.31-32
- 20. B p.33
- 21.C p.33
- 22. A p.35
- 23. B p.35

Chapter 2 - Discussion Questions, Exercises, and AssignmentsNote

Note:

Discussion questions are meant to connect student experiences to topics in positive psychology and provide a basis for in-class discussions.

Exercises and Assignments describe short written assignments that also connect student experiences to positive psychology and often involving "doing" positive psychology. They provide another basis for class discussion and can be evaluated and weighted according to individual instructor grading preferences.

Chapter summary questions, Web resources and suggested readings at the end of each chapter can also provide a basis for class discussions, exercises, and assignments.

Discussion: Hedonic versus Eudaimonic Conceptions of Happiness

Purpose: Explore differences/similarities of these conceptions and Waterman's studies. (Chapter 2 - p.18-19)

- 1. Describe three activities that bring you pleasure and make you feel good.
- 2. Describe three activities that bring a feeling of accomplishment, express your interests, talents, or passions and give you a sense that this is who you are.
- 3. What are the differences and similarities between 1 and 2?

Discussion: "Authentic Happiness"

Purpose: Explore different meanings of happiness and the value of *all* our emotions.

Martin Seligman (Chapter 2, p. 18) asked whether or not we would choose to be hooked up to a "happiness machine" that would keep us in a constant cheerful state. Would you choose to be hooked up? Why or why not? Is perpetual cheerfulness an ideal state? What would we lose? Does cheerfulness need unhappiness to be experienced and valued? Why do we have so many different emotions?

Discussion: Happiness is Everything, or is it? (Carol Ryff, Chapter 2, p.29-30) Purpose: Compare and contrast hedonic and euadaimonic views of happiness. If you had to choose between being healthy (mentally & physically) or happy, which would you choose and why? What do you believe is the relationship between health and happiness? Does one cause the other? Is one the foundation for the other? What would be examples of behaviors that increase health, but decrease happiness and behaviors that increase happiness, but decrease health? Can you be healthy and unhappy? Happy and unhealthy?

Assignment: Positive Psychology Tests

Purpose: Increase student understanding, first hand experience, critical thinking and self-observation regarding positive psychology tests and measures.

1. Google Authentic Happiness and go to the website with all the questionnaires. http://www.authentichappiness.sas.upenn.edu/

You will need to register and get a password, but if you are concerned about privacy, give bogus information on the registration form. However, you want to indicate you are a college student, give correct age and sex and area code to get accurate normative comparisons for tests results.

Complete each of the tests...takes awhile so may want to spread it out. You will get a profile for each test you take.

When you have taken all the tests...copy the test description/result grid and hand it in so I can give you credit for completion. Your responses are confidential. I'm not looking at your scores.

2. After looking over what the test measures and your scores, write a **brief single-spaced half to 1 page** description of what you learned about yourself as well as comments, criticisms, and reactions to the tests and to the website itself.

Chapter 2 – Assignment: Research Article Review

Purpose: Increase student understanding and exposure to specific methods and findings of positive psychology research.

Identify a research study from the chapter citations or the list of suggested readings that looks interesting to you and that is **NOT** described in a Focus on Research/Theory or Methods section of the text. Look up the complete reference to the study in the references section of the text. Find the article in the on-line library periodicals.

Copy and attach the articles' abstract to your review.

Write a two page maximum single-spaced review that answers the following questions:

- 1. What prior research and theory is the basis for this article?
- 2. What is the specific purpose of this research study?
- 3. Describe the sample studied and overview the measures/manipulations used.
- 4. Briefly describe the major results and what they mean for positive psychology.
- 5. Personal reactions: what did you think of this research?

Assignment: Daily & Global Measures of Well-Being

Purpose: Give students first hand experience with the difference between global well-being measures and experience sampling methods. Get them to think about day-to-day influences (state) on well-being and their overall judgment of life satisfaction/happiness (trait influences).

This daily diary exercise was adapted from the two sources listed below. I had tried a more elaborate data collection exercise that closely paralleled the Reis et al. study, but students complained that it was too time consuming and burdensome. This exercise gives students a taste of ESM and global well-being measures and allows them to share their own introspections about the determinants of daily well-being over a one-week period. Instructors who want a more detailed and elaborate "student experiment" can consult the two sources below.

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin*, 26, 419–435.

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science*, *306*, 1776–1780.

Instruction for Students

The purpose of this exercise is give you first-hand experience with global and

experience sampling measures of well-being. You will complete global measures of overall well-being. You will also be asked to record, once a day for seven days, the various emotions you experienced during the day and to write a brief account of the days' most significant events. In a write-up of this exercise you will present your "data" and relate your interpretations to the relevant research and theory in positive psychology reviewed in Chapter 2 of your text (The Meaning and Measure of Happiness).

1. Global Well-being Measures (see Attachment 1 and 2)

Complete the Life Satisfaction Scale and the Subjective Happiness Scale and calculate your score for each scale by following the directions at the bottom of the scale sheet.

2. *Daily Well-Being & Day Summary Rating* (see Attachment 3) At the end of each day complete the daily well-being ratings.

3. Daily Events

Keep a journal that has a separate page for each day of the week. At the end of each day, mentally reconstruct your day by thinking of it as the unfolding scenes or episodes in a movie. You might think of each day as having three major time periods: *morning* (waking up until noon), *afternoon* (from noon to 6 p.m.) and *evening* (6 p.m. until you went to bed). Use a breakdown of your day that makes the most sense to you.

Make a few brief notes for each episode, event or time period that captures what you **did** and how you **felt**. Record episodes in the order that they occurred during the day. Examples of the kind of entries that you might make in your journal are given below.

Monday

Morning

Mom called.

- Excited about my coming home this weekend. Feeling good about seeing family & break from school.

Test!

- Big political science test ...Felt very anxious, but relieved not as bad as thought. **Afternoon**

Lunch with the group.

-Some angry feelings about last weekend. Feeling worried I'll get blamed.

Evening

Library Research

- Made good progress on psych, project. feeling confident. *Roommate*
- -Long talk, roommate family problems; kind of sad, but glad I could help and be supportive.

4. Write-Up

Excluding Figure 1, a minimum of 2 and maximum of 4 pages <u>single-spaced</u> and typed.

Your report should include Figure 1- Daily Well-Being by Days of the Week and the results and discussion section described below. You do *not* need to turn your journal, scales, or scale ratings.

Daily Well-Being by Days of the Week (see Attachment 4). Make a graph of your daily well-being scores for each day of the week using the data from the Score Recording Table. Graph your score for each measure (DWB, DNE, DPE, DSR) using the color-line scheme shown on Figure 1: Daily Well-being by Days of the Week. Connect each data point for each measure across days of the week using the color-line scheme shown. Because you have four lines on this figure, neatness counts!

Enter your Life Satisfaction and Subjective Happiness Score in the space provided at the top of Figure 1.

Calculate your **average daily well-being** for the week by adding up your daily well-being scores for each day of the week and dividing the total by 7. Enter this score in the space at the top of the figure.

Calculate your **average day summary rating** for the week by adding up your daily summary ratings for each day and dividing the total by 7. Enter this score in the space at the top of Figure 1.

Results and Discussion

Use the headings and alphanumeric scheme below to organize your paper (i.e., reproduce them in your report).

I. Results

A. Daily well-being

Carefully exam Figure 1. Look for similarities, differences, and patterns for each of the four measures across days of the week (i.e. DPW, DNE, DPE, DSR). Keep in mind what each measure represents. Consider the following types of questions. Do the four measures show a similar or divergent pattern? Does one measure help explain the pattern in another? (e.g., DNE & DPE versus DPW and DSR)? Did negative or positive emotion have the largest impact on daily well-being? Were there good days? Bad days? Blue Monday? A weekend increase in well-being?

Make a list with a brief description of your most interesting or significant findings. These might include such things as:

- Wednesday was my worst day. DNE was very high
- Thursday DPW was low because both DNE and DNE cancelled each other out.
- DPW and DSR are both daily well-being summary measures, but showed a different pattern of results across the seven days. DSR was always higher than DPW.
- DPW was generally pretty high over the week. Seems to result from very low DNE rather than a high DPE.

B. Global versus Daily Well-Being

All measures used a 7-point rating scale. This provides some comparability of the different measures. Compare your scores for Life Satisfaction, Subjective Happiness, Average Daily Well-being, and Average Day Summary Rating. List and describe the differences and/or similarities.

II. Discussion

A. Daily Well-Being

1. Personal Observations

Review your journal entries and offer interpretations, no matter how speculative, for your most interesting and significant findings described in your

result section. For example, what made your good days good and your bad days bad? What made your week generally good or bad? Refer to specific events, social interactions, physical health, etc....What events, interactions, etc. had the most impact on your daily well-being? Explain what, how and why.

2. Self-Determination Theory

Review the Focus on Research section titled What Makes a "Good" Day in Chapter 2.

- *a)* Write a brief summary of the major assumptions and the three needs described by self-determination theory as the introduction to this section of your report.
- b) Theory fit. Review your journal entries by looking for events that seem to "fit" with needs for autonomy, competence and relatedness. Were good days or bad days related to fulfillment or frustration of these needs? Which need seemed to have the most and which the least influence on daily well-being? Give specific examples. Do you think self-determination theory does a good job of capturing the major influences on well-being? Do you see any parallels between your results and those for the study by Reis, Sheldon, and his colleagues, described in the focus section? Explain.

B. Daily Well-being versus Global Well-Being

Review Chapter 2 in your text. Read in detail the sections on measuring emotions and the differences between Global and Experience Sampling measures of well-being. Be sure you understand the strengths, weaknesses and issues involved in what each measure assesses.

- *a)* Write a brief review of the differences, biases, strengths and weaknesses of global versus experience sampling measures. Include in you review a discussion of what each measure is most sensitive too (i.e. traits or states).
- b) Review and discuss the similarities and difference between your own global and daily well-being scores described in your results. Why are they different or similar? For you personally, what was the influence of your "traits" versus the "states" you experienced during the week? Can you see the operation of both? Feel free to speculate.
- c) Discuss & Explain. Do you think one measure is better than the other as an index of well-being? Is a "good life" best thought of as a summary judgment based on self-reflection about our life globally considered? Or is a good life "in the trenches?" That is, an accumulation of good or bad days overtime? What can each measures teach us? Discuss.
- *d) Measurement Issues.* What limitations or problems do you see in positive psychologists measures of well-being as exemplified by global and experience sampling measures? Can you think of ways they might be improved?

Attachment 1

Satisfaction With Life Scale – Ed Diener

7	Strongly agree
6	Agree
5	Slightly agree
4	Neither agree nor disagree
3	Slightly disagree
2	Disagree
1	Strongly agree
	_1. In most ways my life is close to my ideal.
	_2. The conditions of my life are excellent.
	_3. I am satisfied with my life.
	_4. So far I have gotten the important things in life.
	_5. If I could live my life over, I would change almost nothing.
total some a rati your	ing: add up the total of your ratings for each of the 5 scale items. Divide the by 5 (number of scale items) to get an average item rating. For example eone who ratings on items 1-5 were 3, 5, 6, 7 and 3 respectively, would have ings total of 24 and a scale score of 4.8 (i.e. 24/5). The average item rating is score on the Life Satisfaction Scale. Scores may range from a low of 1 (not satisfied) to 7 (very satisfied).
Life	Satisfaction Score

Attachment 2

Subjective Happiness Scale – Sonja Lyubormirsky

1. In gene	ral, I co	nsider	myself	:		
1	2	3	4	5	6	7
not a ver happy per						a very happy person
2. Compai	red to r	_	my peo			•

less happy more happy

3. Some people are generally very happy. They enjoy life regardless of what is

0. 0	onic po	copic a	ic gene	July v	cry maj	PPy• I	ricy cri	joy inc regardiess of write	L 13
goir	ng on, g	getting	the mo	st out o	of ever	ything.	. To w	hat extent does this	
cha	racteriz	zation d	lescribe	e you?					
	1	2	3	4	5	6	7		

1	2	3	4	5	6	7
not at all					•	a great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at						a great
all						deal

Scoring: This scale includes items written in both the happy and unhappy direction. Higher ratings on items 1, 2 & 3 suggest more happiness. However for item 4, higher ratings suggest unhappiness. To combine ratings in a total score, this difference needs to be taken into account so that for all items on the scale, a higher score suggests happiness and a lower score unhappiness. This is done by reversing the rating scale for item 4. For item 4, change your actual rating using the reversing score scale below. For example, if your actual rating was a "2," your reverse rating is now "6." To get a summary scale score add your rating for items 1-4 (including the reverse score rating for #4) and divide the rating total by 4 (number scale items).

Actual Rating & Reverse Score Rating for #4

	0	
1	Ü	7
2 3		6
3		5
4		4
4 5		3
6		2
7		1

Subjective Happiness Score_____

Attachment 3

Daily Well-Being

Rate the extent to which you experienced each of the emotions listed below during the day using the scale below. Record your ratings for the appropriate day of the week below.

1	2	3	4	5	6	7	
(not at all)					(extreme!	ly)

- ____1. Joyful
- ____2. Happy
- ___3. Pleased
- ____4. Enjoyment/fun
- ____5. Unhappy/depressed
- ____6. Worried/anxious
- 7. Frustrated
- ____8. Angry

Da	ilv	Fm	otion	Rat	inos
υı	11 I V	LIII	บนบน	mai	111125

Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Sun.
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
$4{}$	4	4.	4	4	4	$4{}$
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8

Day Summary Rating

Rate the	kind of	day you had o	on the scale b	elow. Today v	vas	
1	2	3	4	5	6	7
awful	bad	kind of bad	ho-hum	ok	good	great

Scoring

Daily Positive Emotion (DPE). Add your ratings for items 1-4 (i.e. joyful, happy, pleased, enjoyment fun) and divide the total by 4. This is your daily positive emotion score (DPE). Record it for the appropriate day of the week.

Daily Negative Emotion (DNE). Add your ratings for items 5-8 (i.e. unhappy/depressed, worried/anxious, frustrated, angry) and divide the total by 4. This is your daily negative emotion score (DNE). Record it for the appropriate day for the week below.

Daily Well-Being (DWB). Daily well-being score (DWB) is calculated as your daily positive emotion score **minus** your negative emotion score. Scores can range from +6 to -6. Record this score for the appropriate day of the week.

Day Summary Rating (DSR). Record your rating in the score recording table under DSR for the appropriate day for the week

Score Recording Table

Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Sun.
DPE	DPE	DPE	DPE	DPE	DPE	DPE
DNE	DNE	DNE	DNE	DNE	DNE	DNE
DWB	DWB	DWB	DWB	DWB	DWB	DWB
DSR	DSR	DSR	DSR	DSR	DSR	DSR

Full Download: http://alibabadownload.com/product/positive-psychology-1st-edition-baumgardner-test-bank/

Attachment 4

Figure 1: Daily Well-Being by Days of the Week

Daily Well-Being Daily Well Being Score Daily Positive Emotion Daily Negative Emotion Day Summary Rating				*****	Global Well-Being Life Satisfaction Subjective Happiness Average Daily Well-Being Average Day Summary Rating			
	7.0							
	6.5							
	6.0							
	5.5							
	5.0							
<u>Mean</u>	4.5							
	4.0							
Rating	3.5							
	3.0							
	2.5							
	2.0							
	1.5							
	1.0							
	-1.0	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Sun.
	-2.0							
	-3.0							
	-4.0							