COURSE GRADE COVER SHEET

Complete student information portion, make copies, and submit one form with each course.
(In the event you are not able to make copies, please hand-write this page with each course.)

I have read the frequently asked questions on the back of this page: XX ***Yes*** ____ ***No.***

Student Number (Same as Inmate Number) 180161

Student Name: Eric St. George

Student Address: c/o CCF--180161; PO Box 600

City: Cañon City State: CO Zip Code: 81215

Unit Number: Fox Name of Prison: Centennial

Degree you are working toward: Masters of Ministry & Christian Counseling

My records indicate this is my 4th course. 2 of 3

Course Number & Title: or Name of Book From the Bible: APC551 Individual Appraisal

Book Title: Thinking, Fast and Slow

Author: Daniel Kahneman

Begin/End Date of Enclosed Course: Jan 1 / Jun 30 2024

Please note that if you are turning in a course that involves textbooks you need to turn in a complete course that normally has three books.

To Be Completed By Student:

Do you need us to send you your next course? ____ *YES* XX *NO*

(This question applies only to those working on books of the Bible)

If no, what books will you use for your next course?

_____

_____

_____

Please give us the name and ID number of a few people that are interested in receiving information on attending our college. Thanks and God Bless You!

1. _____

2. _____

3. _____

International Christian College and Seminary
P.O. Box 530212 • Debary, Florida 32753-0212
www.iccscampus.org

Q: Can you send me another grade coversheet?
A: You can handwrite your grade cover page.

Q: How long does it take to grade my work?
A: We normally send correspondence out once per month. However, you do not need to wait on us to grade your work to continue your courses.
If you are doing books from the Bible, we can e-mail them to your loved ones and they can print and send them to you. Just ask them to e-mail us.

Q: Can I do my courses in pencil?
A: Yes, but only if you have access to nothing else.

Q: Should I staple or paperclip my work?
A: If you do it is ok. However, we prefer that you do not use staples or paperclips because we scan your work and it takes time to remove them from the papers.

Q: What course will books from the Bible substitute for?
A: We use the books from the Bible as foundation courses. You need 20 courses to graduate. We will determine which courses they will substitute for as you get closer to graduating.

Q: Is there a way I can contact you other than by mail?
A: If you are a federal inmate in good standing you can send me an invitation on Corrlinks and I will accept. If you are a state inmate you can have your loved ones forward an e-mail to me and I will respond. My e-mail is drmccorkle@iccscampus.org. You, your family or friends are welcome to call me. My cell number is (407) 760-5616. The office number is (877) 391-3741 ext. 700. As long as I do not have to pay, I will accept all calls. If for any reason you do not reach me on your first attempt, please keep trying. I will pick up.

Q: How do I know if books I have available are acceptable to use as substitutions?
A: As you know, we have a list of suggested books for your degree. However, we can customize some of your future courses to assist you in obtaining your goal. Everyone knows what they need help with. Please pray about it and once you have identified an area where you would like to improve, look in your chapel library or psychology department for a combination of books that are 900 pages. Once you find the books give me the name of the book, the author and the page numbers and I will enter these as a custom course for you.

Q: Is there a time limit for each course?
A: No, you can work at your own pace.

Q: Can I send in my work if my tuition is not current?
A: Please do not send in your work if your tuition is not current. If your tuition is not current your student file is flagged on hold in our system and we are unable to grade any work until the tuition is current. If the college does not receive a payment within 90 days the student file is permanently closed.

Q: I have been writing sponsor letters but have not obtained a sponsor.
A: Some students have to write 50-100 letters before they received a positive response. It depends on your letters. You need to pray and write each one individually from your heart. Also, ask family and friends to help find sponsors.

Q: Will I receive feedback from the graders/readers?
A: Courses are graded by graduate students. They jot down notes for me to read about each of your papers. They normally put down opinions that are highlighted to advise that this is interesting. Unless they point out a problem on the paper, I will accept it as-is. If they provide a problem, I return the paper with their notes asking you to re-do and re-submit. In the past I would write down some comments and students would brag to other students in their dorm making them feel inferior. For that reason, I normally just keep to the basic comments. I know some of you put a lot in your papers and deserve complete feedback. You can call me from your chaplain's or unit man- ager's office and I will be glad to discuss your papers in full detail.

Q: Can you send back my original work?
A: When we receive your work, your courses and correspondence are scanned into your student records. If you want your original work sent back to you, you must send us a self-addressed, stamped brown envelope with as many stamps as you used to send your original work to us, clearly stating that you want all of your work returned. Once your tuition is paid, if you want a copy of your work, we will email it to you upon your release or you can have your sponsor send a request and we will email it to them.

Q: How long can I use the Books from the Bible?
A: You can use books/questions from the Bible up to your Bachelor's Degree.

Q: Tell me again about your accreditation
A: We are accredited by the International Theological Accountability Association (ITAA) and are recognized by the Department of Education in Florida. ICCS has been privileged to work with several regionally accredited colleges and universities that do accept some ICCS course transfer credits into their programs. This offers our students the option of benefitting from their ICCS training when pursuing a formal degree at various academic institutions.

There are different kinds of accreditation. Governmental Accreditation and non-governmental accreditation. Governmental accreditation is requested in order to receive student aid money. We, along with Rhema Bible College and many more, choose non-governmental accreditation. With governmental accreditation, we would not be able to offer higher degrees unless the student took some courses on campus. That would make our prison program ineffective to you and many others.

Q: How many credits are each course?
A: Three (3) credits or one (1) course is equivalent to 45 contact hours, 60 credits or 20 courses is equivalent to 900 contact hours.

A contact hour is a measure that represents an hour of scheduled instruction given to students. A semester credit hour is normally granted for satisfactory completion of one 50-minute session (contact hour) of classroom instruction per week for a semester of not less than fifteen weeks.

Q: Do I have to start with my Associate's degree or can I go directly to my Doctorate degree?
A: If you have college credits, we need to see the official transcripts and we will enroll you in the appropriate degree program. If you have no college credits you need to start with the Associate's degree. The undergraduate degrees (Associate's and Bachelor's) each require 60 credits or 20 courses to graduate. For graduate degrees, the Master's requires 48 credits or 16 courses plus a Master's thesis and the Doctorate requires 36 credits or 12 courses plus a dissertation paper to graduate.

Q: Will you write a letter to the Parole board for me?
A: Yes. If you are a student in good standing with us, we will gladly help with Parole and Letters to the court. You must have a hearing date. If the date is near, I suggest you have your family or friends get in contact with us so we can have the rough draft approved and we can obtain the name and address of who you want it addressed to. Otherwise, you can write to us with the information.

Q: How can I help ICCS?
A: Help us spread the word about our college by sharing the school's flyer wherever you can i.e. your prison chapel, library or common area.
You can also support us through prayer and by recommending us to your friends who are interested in pursuing a theological degree. To go a step further, consider "paying it forward" by sponsoring a new student.

Q: Why is my coursework postmarked from Austin, Texas?
A: Our grading center is in Austin, Texas. All of your correspondence is to be sent to:

International Christian College and Seminary
P.O. Box 530212
Debary, FL 32753

Q: Can I continue my degree when I am released?
A: Yes. You are welcome to continue upon your release. We will keep your tuition at the same price for the first two years. You will have an option of taking your classes online or textbooks or a combination of the two. It will be your choice.

Q: What is the cost for my next degree?
A: We offer men and women in prison an 85% discount from our normal tuition. Our current tuition is $9,497.00 (It continues to go up each year). We offer it to inmates at $1,425. If you pre-pay you receive an additional discount and only pay $997. Please note that the rate you will be paying is $22.00 per credit hour. The standard community college charges between $150 - $300 per credit hour. There is no additional discount.

INDIVIDUAL APPRAISAL
APC551
(paper 2 of 3)

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Text Read: Thinking, Fast and Slow by Daniel Kahneman (2011)

ISBN: 978-0-374-27563-1, 499 pages in 5 parts and 38 chapters

CONTENTS: Introduction PART I: TWO SYSTEMS (ch 1) The Characters of the Story (ch 2) Attention and Effort (ch 3) The Lazy Controller (ch 4) The Associative Machine (ch 5) Cognitive Ease (ch 6) Norms, Surprises, and Causes (ch 7) A Machine for Jumping to Conclusions (ch 8) How Judgments Happen (ch 9) Answering an Easier Question PART II: HEURISTICS AND BIASES (ch 10) The Law of Small Numbers (ch 11) Anchors (ch 12) The Science of Availability (ch 13) Availability, Emotion, and Risk (ch 14) Tom W's Specialty (ch 15) Linda: Less is More (ch 16) Causes Trump Statistics (ch 17) Regression to the Mean (ch 18) Taming Intuitive Predictions PART III: OVERCONFIDENCE (ch 19) The Illusion of Understanding (ch 20) The Illusion of Validity (ch 21) Intuitions vs. Formulas (ch 22) Expert Intuition: When Can We Trust It? (ch 23) The Outside View (ch 24) The Engine of Capitalism PART IV: CHOICES (ch 25) Bernoulli's Errors (ch 26) Prospect Theory (ch 27) The Endowment Effect (ch 28) Bad Events (ch 29) The Fourfold Pattern (ch 30) Rare Events (ch 31) Risk Policies (ch 32) Keeping Score (ch 33) Reversals (ch 34) Frames and Reality PART V: TWO SELVES (ch 35) Two Selves (ch 36) Life as a Story (ch 37) Experienced Well-Being (ch 38) Thinking About Life (conclusions) Appendix A: Tversky, A., and Kahneman, D., "Judgement Under Uncertainty: Heuristics and Biases" Science Vol. 185 (1974) Appendix B: Kahneman, D., and Tversky, A., "Choices, Values, and Frames." American Psychologist Vol 34 (1984)

WHY THIS TEXT WAS CHOSEN FOR USE IN THIS COURSE

This text is written by Daniel Kahneman who is a Professor Emeritus of Psychology at Princeton University and Professor Emeritus of Psychology and Public Affairs at Princeton's Woodrow Wilson School of Public and International Affairs. He is also the receipiant of the 2002 Nobel Prize in Economics for his work on decision making with his longtime collaborator Amos Tversky. The text promised to explain our "System 1" and "System 2" and cognitive biases that we use in decision making. The Individual Appraisal course syllabus speaks of an overview of individual and group approaches to assessment used by professional counselors, and that "course participants evaluate instruments, interpret results, and demonstrate knowledge of psychometric properties." The text also featured a large bibliography that

included citation to many peer-reviewed psychology journals -- indeed the appendix contained two articles co-written by the author and published to Science and American Psycholgist. Believing that the text was sufficiently rigorous and would offer insights that could be used in both counseling or research contexts I selected it for this course.

INTRODUCTION:

Our author begins his book by introducing where the concept of "Thinking, Fast and Slow" originated for him. He introduces us to his longtime collaborator Amos Tversky -- with whom he worked at the Hebrew University of Jersusalem; Tversky was also a psychologist and was working in decision science. They met in 1969.

The author tells us that in the 1970's it was generally accepted by social scientists that: 1) People are genrally rational, and their thinking is normally sound, and 2) emotions such as fear, affection, and hatred explain most of the occasions on which people depart from rationality. He is setting us up that he intends to knock this premise down during the course of his book... and he doesn't fail. He tells us that in 2010 that more than 300 scholarly articles cited to his work on the subject in many varying fields. He notes one field in which scholars have cited the work is in legal judgment -- my interest was especially piqued by this. (I often reference my personal interest in the legal field owing to my wrongful incarceration and current imprisonment which has led me to become a de facto practitioner of the law.)

The author introduces briefly the five parts of this text, highlighting what will be covered.

SYSTEM 1 AND SYSTEM 2

Part One is devoted to teaching about these two systems of the mind that are involved in thinking and reacting to our experiences. These terms System 1 and System 2 were coined by psychologists Keith Stanovich and Richard West. [Stanovich, K., and West, R., "Individual Differences in Reasoning: Implications for the Rationality Debate," Behavioral and Brain Sciences 23:645-65 (2000)] "System 1 operates automatically and quickly, with little or no effort and no sense of voluntary control." "System 2 allocates attention to the effortful mental activities that demand it, including complex computations. The operations of System 2 are often associated with the subjective experience of agency, choice, and concentration." Examples of System 1 reasoning: *Recognize the emotion of an "angry" face (or any facial expression) *Determine that one object is more distant than a nearer one *Orient

to the direction of a sudden sound *Complete the phrase "bread and..." *Detect hostility in a voice *Answer 2 + 2 =? *Drive a car on an empty road Examples of System 2 reasoning: *Answer 17 X 24 =? *Brace for the starter gun in a race *Focus attention on the clowns in a circus *Look for a woman with white hair in a crowd *Fill out a tax form *Drive in heavy traffic *Monitor social appropriatness of your behavior in public.

An experiment by Christopher Chabris and Daniel Simons demonstrates how intense System 2 focus can blind System 1. They created a film of two teams passing a basketball. Viewers are instructed to count the number of passes made by the white shirt team, ignoring the black shirt team. Midway through the video, a woman in a gorilla suit waks into the frame, beating her chest for 9 seconds. Half of viewers totally fail to see the gorilla, absorbed in the pass-counting task. [Chabris, C., and Simons, D., The Invisible Gorilla London: Harper Collins (2011)]

Another famous example of interplay between System 1 and System 2 is the Mueller-Lyer illusion:

Which line is longer? System 1 quickly tells you that the top line is longer, well before System 2 has the opportunity to tell you that they are the same.

While Muller-Lyer's illusion is visual, also exist cognitive illusions. The author shares a personal example from a lecture while he was a graduate student. The professor said: "You will from time to time meet a patient who shares a disturbing tale of multiple mistakes in his previous treatment. He has been seen by several clinicians, and all failed him. The patient can lucidly describe how his therapists misunderstood him, but he has quickly perceived that you are different. You share the same feeling, are convinced that you understand him, and will be able to help." "At this point my teacher raised his voice as he said, 'Do not even think of taking on this patient! Throw him out of the office! He is most likely a psychopath and you will not be able to help him.'" This is known to psychologists as "psychopathic charm," a red flag in the field and an example of cognitive illusion. [Hare, R.D., Without Conscience: The Disturbing World of the Psychopaths Among Us. (New York:Guilford Press, 1999)]

More intelligent people need less effort in order to solve problems than less intelligent people, meaning they will resist engaging System 2 longer. [Ahern, S., and Beatty, J., "Physiological Signs of Information Processing Vary with Intelligence." Science 205:1289-92 (1979)] This effect is similar when talent is implicated, or if the subject has practiced a skill.

There are examples of people performing cognitive work effortlessly for long periods of time without exerting willpower. Imagine the typist at the keyboard, a snowboarder riding downhill, or the Solo II racer negotiating cones on a race-track. (chosen from my own experience) These appear to perform skillfully without "thinking about it." Psychologist Mihaly Csikszentmihalyi (pronounced 'Six-cent-mihaly' and familiar from studies of Martin Seligman's 'positive psychology') coined the term "flow" to describe this state. Csikszentmihaly describes flow as an "optimal experience" and people experiencing flow describe it as "a state of effortless concentration so deep that they lose their sense of time, of themselves, of their problems." [Csikszentmihalyi, M., Flow, The Psychology of Optimal Experience (New York:Harper, 1990)]

The author describes the phenomenon of ego depletion, where System 2's tendency to be "lazy" comes to the fore during periods of heavy cognition. Experimentation shows that because our brains burn glucose and indeed consume more when engaged in effortful mental activity, ego depletion can be overcome by ingesting glucose. He offers multiple examples but this one piqued my interest and simultaneously troubled me: A study of parole judges showed that they were more attentive immediately following meals. When hearing cases, the default decision is denial of parole. Overall, 35% of requests are approved. Immediately following a meal break the approval rate rose to 65% and steadily declined until the next meal. The researchers tried to find alternate explanations. They concluded that fatigued and hungry judges fall back to the default. [Danziger, Levav, and Avanaim-Pesso, "Extraneous Factors in Judicial Decisions." Proceedings of the National Academy of Sciences 108:6889-92 (2011)]

In a famous experiment, Walter Mischel offered four-year-old subjects an Oreo cookie which they could eat at any time, or in the alternative if they waited for 15 minutes they could have two Oreos. They were forced to wait those minutes in a bare room lacking any distraction but a desk with the one Oreo and a bell. About half succeeded in waiting to receive the greater reward. In follow up, the subjects who deferred gratification were less likely to take drugs as young adults and scored higher on tests of intelligence. [Mischel, et al., "Delay of Gratification in Children," Science 244:933-38 (1989)]

System 1 is impulsive and intuitive; System 2 is capable of reasoning, and is cautious, but for some can also be "lazy."

Our thinking is susceptible to what is called the priming effect. The priming effect is a result of association. Example, complete this word SO P. If you've

recently seen or heard EAT, you'll complete the word SOUP; If you've recently seen or heard WASH, you'll complete the word SOAP. This priming effect can control our behavior in many ways. The author gives examples that subtle priming of money imagery will beget behavior that is more independent or selfish; images of "big brother," or "Dear Leader" or God will stifle independence and sponteneity; and priming shameful imagery will leave one inclined to clean or bathe oneself. This latter is dubbed the "Lady Macbeth effect." I personally really enjoyed this experiment: an "honesty box" parked next to an office coffee pot. The experimenter quietly placed an image of a pair of eyes above the honesty box one week, flowers the next, then eyes again... and so on for 10 weeks. On average, the office contributed three times as much money on "eye weeks" contrasted to "flower weeks." The tacit reminder that "someone is watching" has a powerful priming effect on conduct. [Bateson, et al., "Cues of Being Watched Enhance Cooperation in a real-world setting," Biology Letters 2:412-14 (2006)] My interest in reining-in violent law enforcement immediately takes me to the example of implementation of body-worn cameras by police officers and the proportional reduction in use of force against citizens. [See: U.S. v. Gibson, 366 F.Supp.3d 14, 26 (DC Dist. Ct. 2018)] Body-worn cameras allow supervisors and the public to see police activity, and those eyes give rise to a priming effect in the form of reduced police violence.

When encountering a stimulus, System 1 will act automatically. One of its functions is to assess if System 2 is needed to do further computations. This determination is made by assessing **cognitive ease.** When System 2 is needed is when you experience **cognitive strain.** When System 1 makes an error and comes to an incorrect result due to cognitive ease misleading it, this is called a **truth illusion.** An example is: **Hitler was born in 1892/**Hitler was born in 1887 Which is true? Ans.: Neither, it was 1889, but experiments show it is more likely subjects will believe the boldface type. The text cites to Daniel Oppenheimer's "Consequences of Erudite Vernacular Utilized Irrespective of Necessity: Problems with Using Long Words Needlessly" published in Applied Cognitive Psychology [20:139-56 (2006)] which addresses that the KISS (keep it simple, stupid) principle still holds; using big words won't make you sound smarter and will be <u>less</u> clear.

Repetition increases familiarity, and liking. This **mere exposure effect**, was put to the test in an experiment our author calls his favorite. In two Michigan university student newspapers, an ad on the front page displayed on of a number of turkish words from 1 to 25 repetitions (over time). Afterward, the students were asked what words meant something "good," and which "bad." The words that had

been displayed in the ads more frequently were rated more favorably. [Zajonc, R., "Exposure and Affect: A Field Experiment," Psychonomic Science 17:216-17 (1969)] This mere exposure effect translates over to other stimuli. Zajonc argues this is an important biological fact. Survival in a dangerous world, it is adaptive if we are initially suspicious and then the caution fades where the stimulus is safe. I've heard of this mere exposure effect applied to the context of dating in other sources; people are attracted to those potential mates to whom they are nearest.

We are all familiar with the term "**halo effect**" as it has become part of the lexicon. This perceptual bias was tested in an experiment conducted by Solomon Asch. What do you think of Alan and Ben?

Alan: Intelligent-industrious-impulsive-critical-stubborn-envious

Ben: envious-stubborn-critical-impulsive-industrious-intelligent

Why do we like Alan over Ben? Because the initial traits changed the meaning of the latter ones. [Asch, S.E., "Forming Impressions of Personality." Journal of Abnormal and Social Psychology 41:258-90 (1946)]

System 1 has the ability to make snap judgments instantaneously. One of these evolutionarily adaptive skills is to recognize friend or enemy at a glance. One of the means it uses to do this is basic assessment. In an experiment it was shown that facial cues are used; a square jaw indicates a "strong" or "dominant" assessment and a smile or frown tells us of a stranger's intentions. Students were shown photos of politicians, 70% of the winners of elections had higher ratings of competence. [Todorov, et al., "Inference of Competence from Faces Predict Election Outcomes," Science 308:1623-26 (2005)] This reminds me of the story of serial killer Ted Bundy, who was notoriously deemed to be handsome and his appearance was so disarming that he could approach his victims. Caution in trusting our System 1 should be heeded.

Our System 1 does not accurately measure the size of a set when it is greater than three or four units. The author coins the term sum-like variables to refer to judgment of the size of a category and the number of instances it contains, which is typically ignored. In an experiment that followed the Exxon Valdez oil spill in Alaska, participants were asked how much they'd be willing to pay to save 2,000 20,000 or 200,000 birds in three separate groups of participants. The average responses were $80, $78, and $88, respectively. System 2 would have calculated that saving 20,000 birds would be ten times better... but the participants made emotional System 1 responses that wholly neglected the quantities. [Desvouges, et al., "Measuring Natural Resource Damages with Contingent Valuation: Tests of

Validity and Reliability." in Contingent Valuation: A Critical Assessment, ed. Jerry A. Hausman (Amsterdam: North-Holland, 1993) pp. 91-159.]

HEURISTICS AND BIASES

"The technical definition of heuristic is a simple procedure that helps find adequate, though often imperfect, answers to difficult questions. The word comes from the same root as the word eureka."

The first heuristic offered in the text is that of Paul Slovic, the **affect heuristic**, in which people allow their likes and dislikes to form their beliefs. Your emotional attitude drives what facts you find credible. An example from todays news-hour politics would be your feelings about former president Trump and what you believe are the facts surrounding the US/Mexico border or the events of January 6th, 2021. [Finucane, et al., "The Affect Heuristic in Judgments of Risks and Benefits," Journal of Behavioral Decision Making 13:1-17 (2000)]

The author details how a number of statistical characteristics of studies can lead to our judgments going astray. The **Law of Small Numbers** is one that anyone who has designed an experiment or studies statistics is familiar; you must be sure the sample size is sufficiently large that the results cannot be swayed by sampling errors or outliers in the distribution. Random distributions have a tendency to look like clustering to the untrained eye. [Feller, Wm., Introduction to Probability Theory and Its Applications (New York: Wiley, 1950)] An example from the text that I found interesting because it has been accepted as gospel is the relationship between small schools (and class size) and success. The Gates Foundation invested $1.7B to research what made schools successful, and when data showed that small schools were overrepresnted in the top of the list spent money to split larger schools to make them smaller. Statisticians determined that smaller schools also were at the bottom of the distribution as to success. There was no causal relationship, smaller schools are more variable in their performance.

Another statistical anomoly with which we need to be concerned in making judgments is **regression to the mean.** It was discovered by Sir Francis Galton, a half cousin to Charles Darwin, and described in an 1886 article "Regression towards Mediocrity in Hereditary Stature." This principle means that children of tall parents are likely to be closer to average height than their outlier parents, test taking students are likely to perform closer to the average on subsequent tests following an exceptionally high or low grade, and golfers are more likely to shoot closer to par the day after shooting very well or very poorly. A very relevant

example offered by the author is this made-up headline: "Depressed children treated with an energy drink improve significantly over a three-month period." He tells us that "depressed children are an extreme group," meaning with or without Red Bull the children were apt to return to baseline. The experimental design needed a control group... which would have shown that the Red Bull group did not improve more than regression would explain.

The **anchoring effect** occurs "when people consider a particular value for an unknown quantity before estimating that quantity." The author conducted an experiment with his partner Amos where they rigged a wheel of fortune, marked 0 to 100, to stop only on 10 or 65. They then asked a question, "What is your best guess of the percentage of African nations in the UN?" "The average estimates of those who saw 10 and 65 on the wheel were 25% and 45% respectively." The anchor number had affected their estimates. [Appendix A] Other examples of anchors are the asking price of real estate (or any purchase), A starting bid in an auction, higher starting prices will lift the offer price. In another example experimenters asked participants "Is the annual mean temperature in Germany higher or lower than 20°C (or 68°F)? Or, "Is the annual mean temperature in Germany higher or lower than 5°C (or 41°F)? When briefly shown a series of words to identify, those asked the 68°F version of the question recognized summer-related words like "sun" and "beach" and those shown the 41°F version recognized winter-related words like "frost" and "ski." [Mussweiler, T., "The Use of Category and Exemplar Knowledge in the Solution of Anchoring Tasks." Journal of Personality and Social Psychology 78:1038-52 (2000)]

The **conjunction fallacy** is when people "judge a conjunction of two events to be more probable than one of the events in a direct comparison." The Linda: Less is More chapter discusses this subject, describing another experiment by the author and his partner Amos. "Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations." Rank how likely are these scenarios: Linda is an elementary school teacher; Linda works in a bookstore and takes yoga classes; Linda is active in the feminist movement; Linda is a psychiatric social worker; Linda is a member of the League of Women Voters; Linda is a bank teller; Linda is an insurance salesperson; Linda is a bank teller and is active in the feminist movement. The participants ranked "feminist bank teller" as more likely than "bank teller" or "feminist" in multiple different iterations of the experiment. They even did so 85%

of the time in a two-scenario heads-up "bank teller" v "feminist bank teller." This is statistically impossible; envisioning a Venn diagram, all "feminist bank tellers" are "bank tellers" but the inverse is not true. The participants were Stanford grad students. The more elaborate answer seemed more plausible, but could not have been more likely. This is the conjunction fallacy. [Tversky and Kahneman, "Extensional Versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment." Psychological Review 90:293-315 (1983)]

The example of **"Bayesian inference"** given in the text was as follows: "A cab was involved in a hit-and-run accident at night. Two cab companies, the Green and the Blue, operate in the city." You are given the following data:

*85% of the cabs in the city are Green and 15% are Blue

*A witness IDed the cab as Blue. The court tested the reliability of the witness under the circumstances that existed on the night of the accident and concluded that the witness correctly IDed each one of the two colors 80% of the time, and failed 20% of the time.

What is the probability that the cab involved in the accident was Blue rather than Green? The most common answer is 80% (the witness's reliability), ignoring the base rate of 85%/15%. The correct answer using Bayes' rule is 41%. The rule accounts for the base rate and the likelihood that the witness was correct. [Bar-Hillel, M., "The Base-Rate Fallacy in Probability Judgments," Acta Psychologica 44:211-33 (1980)]

A year after creating Google, Sergei Brin and Larry Page had been fully willing to sell the company for less than $1MM. At the time, the buyer said that the price was too high. [Weintraub, S., "Excite Passed Up Buying Google for $750,000 in 1999." Fortune, 29 Sept. 2011] Today's valuation is $1.9 T. In 2008 a world-wide financial meltdown occurred that pundits afterward insisted that they had known it was going to happen all along. These examples describe another concept that has entered into the common lexicon, the **hindsight bias.** This "I knew it all along" effect was first described by Baruch Fischoff. He conducted a survey in 1972 regarding Nixon's visit to China and Russia and asked respondents to give the probability of fifteen possible outcomes. After the diplomatic visit, if the event had in fact occurred, the respondents exagerrated the possibility they had assigned before. [Fischoff and Beyth, "I Knew It Would Happen: Remembered Probabilities of Once Future Things." Organizational Behavior and Human Performance 13:1-16 (1975)]

Yet another effect that confuses our judgment is the **illusion of skill.** The author uses the example of stock traders to demonstrate his point. Experimenter Terry Odean of UC Berkeley looked at 10,000 brokerage accounts, nearly 163,000 trades. Upon examination, on average the stocks that traders sold did better than

the stocks they bought by 3.2% annually. The traders would have done better to have done nothing at all. One conclusion was that many sold off winners in order to lock in their gains, and held their losers in hopes of recovery. This tactic was wrongheaded, recent winners tend to keep winning, and vice-versa. [Barber and Odean, "Trading is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors," Journal of Finance 55:773-806 (2002)] The author details this illusion of skill amongst experts in many fields using multiple different experiments.

The author gives another example of an issue that clouds our judgment calling it **inside view** versus **outside view**. These terms mean substantially what they imply, a view from within and a view from without. He describes the inside view as having moral overtones at times -- our perspective being driven by our mores. The outside view is detached, and can be more valid when the inside view has been led astray. The examples the author gives include when planning a project and estimating the time and resources necessary to complete it. The author references a textbook writing project, building projects, and a criminal case. In each he shows how the inside view was typically a best-case scenario, where the outside view was better informed by statistics. This friction between the two views is called the **planning fallacy**. The planning fallacy is a failure to forecast realistically. [Lovallo and Kahneman, "Delusions of Success: How Optimism Undermines Executives' Decisions," Harvard Business Review 81:56-63 (2003)]

The planning fallacy discussion dovetails directly into discussion of the **optimistic bias** and how the author calls this the "engine of capitalism." He opens this subject in saying "optimists are normally cheerful and happy, and therefore popular; they are resilient in adapting to failures and hardships, their chances of clinical depression are reduced, their immune system is stronger. They take better care of their health, they feel healthier than others and are in fact likely to live longer." This sounds familiar to me personally. I had a positive childhood, was a good student without needing to expend much effort, and I sought out challenges rather than shying away from them. The author says of entrepreneurism that "the chances that a small business will survive for five years in the United States are about 35%." [Cooper, et al., "Entrepreneurs' Perceived Chances for Success," Journal of Business Venturing 3:97-108 (1988)] I knew these odds even before I opened my first company in 1995; it is a widely known fact that the majority of small businesses fail. The author continues that for most, "the financial benefits of self employment are mediocre: given the same qualifications,

people achieve higher average returns by selling their skills to employers than by setting out on their own." I would assert that there are benefits to self-employment that are not income. I earned more for myself self-employed than if I'd done the same work for someone else, but I told people that owning a business is dangerous because left to its own devices it will come to own you.

The author uses terms like "optimistic martyrs" (describing entrepreneurs who fail but signal opportunity for more qualified competetors) and "competition neglect" (the hubris of entrepreneurs who deliberately, if subconsciously, fail to account for competitors) in his discussion of **illusion of control**. The illusion of control explains entrepreneurs' willingness to venture into business despite the poor odds, because those long odds are for the other guys and not for them. The author repeats the old saw that 90% of drivers believe that they are better than average. He also points to investors' belief in their talents. He cites a Duke University survey of CFOs relating their forecast of the S&P index. The correllation of the forecasts to performance was less than zero. The forecasts were worse than useless. [Ben-David, et al., "Managerial Miscalibration" working paper (2011)]

CHOICES

Having described the two basic systems of thought, a list of heuristics and biases and illusions; having described how these go into decision making and can distort perception; our author moves into making choices.

In order to study choice making in subjects, the experimenters will use a lot of simple gambling scenarios. Our author tells us "simple gambles (such as '40% chance to win $300') are to students of decision making what the fruit fly is to geneticists." We will encounter many of these. Much of this material is in the intersection between social psychology and economics.

Expected Utility theory is said to be foundational to the rational-agent model. It is a logic that prescribes how decisions should be made, and as a description of how Econs make choices. Example: Which do you prefer?

A. Toss a coin. If it comes up heads you win $100, and if it comes up tails you win nothing.

B. Get $46 for sure

Economists expect everyone will choose A. It's more valuable. The average of $100 and $0 is $50. B is worth $46. Yet people overwhelmingly choose the sure thing, they are risk averse and will pay the premium (the $4 difference) to avoid uncertainty. In another example: choose between a 50/50 chance to get $1MM or

$7MM, or $4MM for sure. We'll all choose the $4MM... unless you already have millions. There is a diminishing utility to money. Intuitively, this makes sense. It's why penny-poker is no fun to play, because nobody folds and everyone will go all in, the money isn't valued enough to warrant cautious play. So it goes for risk adversity. Someone who already has millions will press their luck. This concept was described by Daniel Bernoulli, diminishing marginal utility, and his utility function explains why poor people buy insurance and rich people sell it to them. It is a transfer of risk. His error that the author explains is that he fails to account for "reference points." Anthony has $1MM, Betty has $4MM. They are both offered a gamble, flip a coin to end up with $1MM of $4MM, or take $2MM for sure. Anthony can happily guarantee double his money and take the $2MM. Betty will risk the gamble, miserable at the prospects. Bernoulli doesn't **explain Bet**ty's risk seeking behavior.

Prospect theory helps to explain risk-seeking behavior in another scenario:

A. Get $900 for sure OR 90% chance to get $1000

B. Lose $900 for sure OR 90% chance to lose $1000

In this scenario, we seek risk under option B because we are **averse** to losses. Given a chance to flip a coin, heads to win $200 and tails to lose $100, the prosect only just becomes attractive to most. The fear of losing $100 will almost deter one from the opportunity to win $200. This "**loss aversion ratio**" is 2 in the example. For most, the range that inspires motivation is between 1.5 to 2.5. It takes 1.5 to 2.5 times more prospective upside than loss to entice most to gamble. "Losses loom larger than gains." [Novemsky and Kahneman, "The Boundaries of Loss Aversion," Journal of Marketing Research 42:119-28 (2005)]

Another anomoly that influences our decisions is the **endowment effect**. The best example from the text is a concert ticket to a sold-out show that I want to see. If the retail price is $200, I may be willing to pay up to $500 to get one. Once I have one, I am not willing to part with it for less than $3000. Owning the ticket has increased its value to me. [Thaler, R., "Toward a Positive Theory of Consumer Choice," Journal of Economic Behavior and Organization 1:36-90 (1980)]

Economists from University of PA give us another example of these forces at work. They investigated professional golfers to see if they tried harder to putt in order to avoid a bogey contrasted to putting to earn a birdie. Their hypothesis was that loss aversion would cause golfers to try harder to avoid the bogey, whereas missing a birdie putt would be a foregone gain rather than a loss. The hypothesis was correct. They analyzed 2.5MM putts. The difference was 3.6%. Tiger Woods would have earned about $1MM more per season had he not "slack[ed]

off on birdie putts." [Pope and Schweitzer, "Is Tiger Woods loss averse? Persistent Bias in the Face of Experience, Competition, and High Stakes." American Economic Review 10:129-57 (2011)]

The next pair of effects that influence decision making that described are the **possibility effect** and the **certainty effect.** These effects continue the line of thinking that utility theory and prospect theory are variable along a continuum from 0% ----> 100%. The possibility effect occurs at low percentages of probability; The difference between a 5% change from 0% ----> 5% is far different in utility than a change from 5% ----> 10%. The outsized effect is due to the creation of a possibility that did not exist. I will be far more excitied about a change from zero chance of winning $1MM to 5% compared to my chances increasing from 5% to 10% chance of winning the money. A similar qualitative change occurs in the final 5% of the continuum, between 95% ----> 100%. This is calied the certainty effect. My benavior will be much different if the chance of a hurricane hitting my home changes from 95% to 100% compared to a change from 90% ----> 95%. At 95% chance, the "sliver of hope that everything could still be okay looms very large."

These effects lead to what the text describes as prospect theory's core achievement, the **four-fold pattern.** To my eyes, this looks like some of the arrays that are seen in game theory, like the Prisoner's Dilemma. It also looks like a Punnett Square from genetics, a "fourfold pattern" that compares the genotype and the phenotype of parents as compared to their children. The four-fold pattern looks like this:

PROBABILITY	OUTCOME: GAIN	OUTCOME: LOSS	
HIGH	95% chance to win $10,000 fear of disappointment RISK AVERSE Accept unfavorable settlement (sell fixed settlement)	95% chance to lose $10,000 hope to avoid loss RISK SEEKING Reject favorable settlement (press luck)	certainty effect
LOW	5% chance to win $10,000 Hope of large gain RISK SEEKING Reject favorable settlement (lottery ticket)	5% chance to lose $10,000 Fear of large loss RISK AVERSE Accept unfavorable settlement (buy insurance)	possibility effect

In the context of a civil suit litigation, the upper left hand square describes a litigant with an excellent case on the cusp of a trial win. The plaintiff is well motivated to lock in a gain at a premium. (accepting less than $9500 with surety rather than hold out for 95% chance at $10K) The lower right describes a litigant with a weak case levied against him who is motivated to buy off the

plaintiff with a settlement better than the $500 suggested by the odds. The lower left is a "lottery ticket buyer" with slim odds at a big win. He'll be motivated to press his luck for the big payout rather than to take a small payment that is greater than the $500 that his odds suggest. According to the text, the upper right hand corner results were surprising to experimenters; they hadn't anticipated that when faced with a desperate situation and likely a big loss, people will take the slim chance at escaping the odds. [Williams, C.A., "Attitudes Toward Speculative Risks as an Indicator of Attitudes Toward Pure Risks," Journal of Risk and Insurance 33:577-86 (1966)] [Guthrie, c., "Prospect Theory, Risk Preferences, and the Law," Northwestern Univ. Law Review 97:1115-63 (2003)]

In instances of rare events, System 1 struggles to properly evaluate the odds. For example, a disease "A" kills .01% of its victims, and a disease "B" kills 95 of every million infected; disease A's risks seem miniscule and disease B seems terrifying. A is the bigger killer, but because of **denominator neglect** and a bias toward vivid probabilities our System 1s misevaluate the risks. Clever statisticians regularly utilize perceptions of different formats in order to manipulate their readers. [Slovic, Paul, et al., "Violence Risk Assessment and Risk Communication: The Effects of Using Actual Cases Providing Instruction, and Employing Probability Versus Frequency Formats," Law and Human Behavior 24:271-96 (2000)]

When our planning fallacy and optimistic bias go awry, we are apt to make decisions based upon the **sunk-cost fallacy**. A true rational agent will choose to pursue a plan regardless of its framing. We are not rational agents. A builder who has gotten themselves waist-deep into a construction that is hopelessly over budget and under water will more likely double-down and keep trying when the same builder would have zero likelihood to assume the same project from another. They will "throw good money after bad," which is the sunk-cost fallacy. This is also the top-right corner from the fourfold pattern. "The sunk-cost fallacy keeps people for too long in poor jobs, unhappy marraiges, and uncompromising research projects." This is a skill taught in economics and business courses, to recognize and act to these scenarios. [Lehman, et al., "The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking about Everyday-Life Events." American Psychologist 43:431-42 (1988)]

Framing controls the way we make our decisions to a huge degree. We can be very easily manipulated and misled, our System 1 and litany of biases, fallacies, heuristics, etc. are capitalized upon. Here's another example given in the text

that I can admit that I've contemplated in my own life: Adam switches from a gas-guzzler of 12MPG to a slightly less voracious guzzler that runs 14MPG. The environmentally virtuous Beth switches from a 30MPG car to one that runs at 40MPG. Comparing, Beth appears to have done 5 times better, 10MPG difference vs. 2MPG difference. However, if both drive 10,000 miles in a year, Adam's fuel usage goes from 833 gallons to 714 gallons, a 119 gallon reduction; Beth goes from 333 gallons to 250 gallons, saving only 83 gallons. This is why in Europe the fuel efficiency is framed in terms of liters-per-100-km to allow for easier comparison. (our metric would need to be gallons per 100 miles) [Larrick and Soll, "The MPG Illusion," Science 320:1593-94 (2008)] This is an argument I've had with far too many 'eco-heads' all while purchasing a second-hand hybrid for myself that touted an incomparable 70MPG to include in my stable of vehicles that got closer to 20MPG. For me it was cost effective to keep a third car that I could use for cross-country interstate driving and daily commuting, keeping the other two for off-road/winter and for weekends/track-days. It would not have made fiscal sense but for my ability to maintain the cars myself and the low cash price of the third vehicle. I had done the math to work out the cost benefit analysis. For most it is foolish to change cars due to financing and depreciation to save a few gallons of fuel in a year.

Our textbook makes reference to the the book Nudge, written by Richard Thaler and co-authored by Cass Sunstein from the U.S. Government's Office of Information and Regulatory Affairs. The book is described as "the basic manual for applying behavioral economics to policy." The text discusses Nudge in conjunction with the fuel economy discussion. Starting in 2013, policy is that fuel economy on dealership stickers will be printed in both MPG and GPM. Nudge is written to be a tool for the government to change the behavior of citizens by manipulating them through economics and framing.

LIFE AS A STORY

Would you be interested in taking a vacation that would be fully enjoyable and happy, but you would retain no memory of it? Would you choose to endure tremendous physical pain and anguish if you would retain no memory of it thereafter? Hollywood has tackled these ideas. While not mentioned in the text, I remember these examples. In Total Recall, in a dystopian-ish future, people holiday by having memories implanted artificially in the mind. In Star Trek: The Next Generation, Captain Picard is convicted of a crime while on a foreign planet. His punishment is to have the memory of a very long imprisonment

implanted in his mind -- though he is never imprisoned in actuality. In the end, he comes-to with no time passed.

The upshot, succinctly put by the author, "I am my remembering self, and the experiencing self who does my living, is like a stranger to me."

Another -- slightly disconcerting -- concept in this same vein is that of **affective forecasting.** The text defines by example, relating work by researchers studying life satisfaction levels leading and following marraige. "How happy are you these days?" survey participants are queried. In the 2-3 years leading up to a marraige, it rises; in the 2-3 years following it declines (even beneath the baseline level from the earlier single life.) [Gilbert, Daniel and Wilson, "Why the Brain Talks to Itself: Sources of Error in Emotional Prediction," Philosophical Transactions of the Royal Society B 364:1335-41 (2009)] The salience of the thought of upcoming nuptuals was the source of the high levels of life satisfaction and as time caused the memory to diminish so did the reported levels. I learned this lesson in life without ever getting married. It feels like the old trope of what are the two best days in a boat owners life... the day he buys it and the day he sells it. Novelty, I've learned, is our source of satisfaction in life, or at least it is so for me. I've always advised that people who wish to be happy keep their lives fresh and new, and the author of the text offers data in support. I am looking forward to doing more study into Martin Seligman's Positive Psychology, the sudy of happiness.

CONCLUSION

My review of this text has been overwhelmingly an introduction to much proprietary vocabulary. After reading, I continue to believe the text is valuable to this course of study, Individual Appraisal. The insight into how we evaluate problems via System 1 and System 2, the use of heuristics, biases, fallacies, illusions and effects that apply to our decision making and choices is useful in a counseling context. A therapist who is knowlegeable on these concepts can better tailor his presentation of therapeutic material to the patient. Knowing these concepts allow a better, more reliable, appraisal of a patient's decision making mechanisms.