This is an excerpt from the text “Stumbling on Happiness” by Daniel Gilbert (2006, pages 65 - 72).

Please read this excerpt (I think you’ll enjoy it!). In it Daniel Gilbert discusses several issues we’ve been talking about in class in a way that I think makes it more intuitive and understandable. These topics include: the law of large numbers, constructs, operational definitions, measurement and measurement error, reliability of instruments, and the scientific method. Following the excerpt there is some information about the author, just to give you a sense of who is talking. You can also see a short video of him being interviewed by the comedian Stephen Colbert at: http://www.colbertnation.com/the-colbert-report-videos/89235/june-27-2007/daniel-gilbert

The assignment associated with this reading is to summarize the reading in the form of constructing 5 multiple choice questions (four options each) based on your evaluation of the main points.

“Stumbling on Happiness”
by Daniel Gilbert

Measuring Right

The first premise [in successfully measuring subjective experiences, like “happiness” or “customer satisfaction”, or “employee fulfillment”] is something that any carpenter could tell you: Imperfect tools are a real pain, but they sure beat pounding nails with your teeth. The nature of subjective experience suggests there will never be a happyometer - a perfectly reliable instrument that allows an observer to measure with complete accuracy the characteristics of another person's subjective experience so that the measurement can be taken, recorded, and compared with another. Is If we demand that level of perfection from our tools, then we better pack up the eye trackers, brain scanners, and color swatches and cede the study of subjective experience to the poets, who did a nice job with it for the first few thousand years. But if we do that, then it is only fair that we hand them the study of almost everything else as well. Chronometers, thermometers, barometers, spectrometers, and every other device that scientists use to measure the objects of their interest are imperfect. Everyone of them introduces some degree of error into the observations it allows, which is why governments -and universities pay obscene sums of money each year for the slightly more perfect version of each. And if we are purging ourselves of all things that afford us only imperfect approximations of the truth, then we need to discard not only psychology and the physical sciences but law, economics, and history as well. In short, if we adhere to the standard of perfection in all our endeavors, we are left with nothing but mathematics and the White Album. So maybe we just need to accept a bit of fuzziness and stop complaining.

The second premise is that of all the flawed measures of subjective experience that we can take, the honest, real-time report of the attentive individual is the least flawed. There are many other ways to measure happiness, of course, and some of them appear to be much more rigorous, scientific, and objective than a person's own claims. For example, electromyography allows us to measure the electrical signals produced by the striated muscles of the face, such as the corrugator superciliii, which furrows our brows when we experience something unpleasant, or the zygomaticus major, which pulls our mouths up toward our ears when we smile. Physiography allows us to measure the electrodermal, respiratory, and cardiac activity of the autonomic nervous system, all of which change when we experience strong emotions. Electroencephalography, positron emission tomography, and magnetic resonance imaging allow us to measure electrical activity and blood flow in different regions of the brain, such as the left and right prefrontal cortex, which tend to be active when we are experiencing positive and negative emotions, respectively. Even a clock can be a useful device for measuring happiness, because startled people tend to blink more slowly when they are feeling happy than when they are feeling fearful or anxious.
Scientists who rely on the honest, real-time reports of attentive individuals often feel the need to defend that choice by reminding us that these reports correlate strongly with other measures of happiness. But in a sense, they've got it backward. After all, the only reason why we take any of these bodily events—from muscle movement to cerebral blood flow—as indices of happiness is that people tell us they are. If everyone claimed to feel raging anger or thick, black depression when their zygomatic muscle contracted, their eye blink slowed, and the left anterior brain region filled with blood, then we would have to revise our interpretations of these physiological changes and take them as indices of unhappiness instead. If we want to know how a person feels, we must begin by acknowledging the fact that there is one and only one observer stationed at the critical point of view. She may not always remember what she felt before, and she may not always be aware of what she is feeling right now. We may be puzzled by her reports, skeptical of her memory, and worried about her ability to use language as we do. But when all our hand wringing is over, we must admit that she is the only person who has even the slightest chance of describing "the view from in here," which is why her claims serve as the gold standard against which all other measures are measured. We will have greater confidence in her claims when they jibe with what other, less privileged observers tell us, when we feel confident that she evaluates her experience against the same background that we do, when her body does what most other bodies do when they experience what she is claiming to experience, and so on. But even when all of these various indices of happiness dovetail nicely, we cannot be perfectly sure that we know the truth about her inner world. We can, however, be sure that we have come as close as observers ever get, and that has to be good enough.

Measuring Often

The third premise is that imperfections in measurement are always a problem, but they are a devastating problem only when we don't recognize them. If we have a deep scratch on our eyeglasses and don't know it, we may erroneously conclude that a small crack has opened in the fabric of space and is following us wherever we go. But if we are cognizant of the scratch, we can do our best to factor it out of our observations, reminding ourselves that what looks like a rip in space is really just a flaw in the device we are using to observe it. What can scientists do to "see through" the flaws inherent in reports of subjective experiences? The answer lies in a phenomenon that statisticians call the law of large numbers.

Many of us have a mistaken idea about large numbers, namely, that they are like small numbers, only bigger. As such, we expect them to do more of what small numbers do but not to do anything different. So, for instance, we know that two neurons swapping electrochemical signals across their axons and dendrites cannot possibly be conscious. Nerve cells are simple devices, less complex than walkie-talkies from Sears, and they do one simple thing, namely, react to the chemicals that reach them by releasing chemicals of their own. If we blithely go on to assume that ten billion of these simple devices can only do ten billion simple things, we would never guess that billions of them can exhibit a property that two, ten, or ten thousand cannot. Consciousness is precisely this sort of emergent property—a phenomenon that arises in part as a result of the sheer number of interconnections among neurons in the human brain and that does not exist in any of the parts or in the interconnection of just a few. Quantum physics offers a similar lesson. We know that subatomic particles have the strange and charming ability to exist in two places at once, and if we assume that anything composed of these particles must behave likewise, we should expect all cows to be in all possible barns at the same time. Which they obviously are not, because fixedness is another one of those properties that emerges from the interaction of a terribly large number of terribly tiny parts that do not themselves have it. In short, more is not just more—it is sometimes other—than less.

The magic of large numbers works along with the laws of probability to remedy many of the problems associated with the imperfect measurement of subjective experience. You know that if a fair coin is flipped on several occasions it should come up heads about half the time. As such, if you have nothing better to do on a Tuesday evening, I invite you to meet me at the Grafton Street Pub in Harvard Square and play an endearingly
mindless game called Splitting the Tab with Dan. Here's how it works. We flip a coin, I call heads, you call tails, and the loser pays the good barkeep, Paul, for our beers each time. Now, if we flipped the coin four times and I won on three of them, you would undoubtedly chalk it up to bad luck on your part and challenge me to darts. But if we flipped the coin four million times and I won on three million of them, then you and your associates would probably send out for a large order of tar and feathers. Why? Because even if you don't know the first thing about probability theory, you have a very keen intuition that when numbers are small, little imperfections—like a stray gust of wind, or a dab of perspiration on a finger—can influence the outcome of a coin flip. But when numbers are large, such imperfections stop mattering. There may have been a dollop of sweat on the coin on a few of the flips, and there may have been a wayward puff of air on a few others, and these imperfections might well account for the fact that the coin came up heads once more than expected when we flipped it four times. But what are the odds that these imperfections could have caused the coin to come up heads a million more times than expected? Infinitesimal, your intuition tells you, and your intuition is spot on. The odds are as close to infinitesimal as things on earth get without disappearing altogether.

This same logic can be applied to the problem of subjective experience. Suppose we were to give a pair of volunteers a pair of experiences that were meant to induce happiness—say, by giving a million dollars to one of them and the gift of a small-caliber revolver to the other. We then ask each volunteer to tell us how happy he or she is. The nouveau riche volunteer says she is ecstatic, and the armed volunteer says he is mildly pleased (though perhaps not quite as pleased as one ought to make an armed volunteer). Is it possible that the two are actually having the same subjective emotional experiences but describing them differently? Yes. The new millionaire may be demonstrating politeness rather than joy. Or perhaps the new pistol owner is experiencing ecstasy but, because he recently shook the hand of God near the Great Barrier Reef, is describing his ecstasy as mere satisfaction. These problems are real problems, significant problems, and we would be foolish to conclude on the basis of these two reports that happiness is not, as it were, a warm gun. But if we gave away a million pistols and a million envelopes of money, and if 90 percent of the people who got new money claimed to be happier than 90 percent of the people who got new weapons, the odds that we are being deceived by the idiosyncrasies of verbal descriptions become very small indeed. Similarly, if a person tells us that she is happier with today's banana-cream pie than with yesterday's coconut-cream pie, we may rightfully worry that she is misremembering her prior experience. But if this were to happen over and over again with hundreds or thousands of people, some of whom tasted the coconut-cream pie before the banana-cream pie and some of whom tasted it after, we would have good reason to suspect that different pies really do give rise to different experiences, one of which is more pleasant than the other. After all, what are the odds that everyone misremembers banana-cream pie as better and coconut-cream pie as worse than they really were?

The fundamental problem in the science of experience is that if either the language-squishing hypothesis or the experience-stretching hypothesis is correct, then everyone of us may have a different mapping of what we experience onto what we say—and because subjective experiences can be shared only by saying, the true nature of those experiences can never be perfectly measured. In other words, if the experience and description scales are calibrated a bit differently for every person who uses them, then it is impossible for scientists to compare the claims of two people. That's a problem. But the problem isn't with the word compare, it's with the word two. Two is too small a number, and when it becomes two hundred or two thousand, the different calibrations of different individuals begin to cancel one another out. If the workers at the factory that makes all the world's tape measures, rulers, and yardsticks got sloshed at a holiday party and started turning out millions of slightly different-sized measuring instruments, we would not feel confident that a dinosaur was larger than a turnip if you measured one and I measured the other. After all, we may have used pickled rulers. But if hundreds of people with hundreds of rulers stepped up to one of these objects and took its measurements, we could average those measurements and feel reasonably confident that a tyrannosaurus is indeed bigger than a root vegetable. After all, what are the odds that all the people who measured the dinosaur just so happened to have used stretched rulers, and that all the people who measured the turnip just so happened to have used squished rulers? Yes, it is possible, and the odds can be calculated quite precisely, but
I will spare you the math and promise you that they are so slender that writing them down would endanger the world's supply of zeroes.

The bottom line is this: The attentive person's honest, real-time report is an imperfect approximation of her subjective experience, but it is the only game in town. When a fruit salad, a lover, or a jazz trio is just too imperfect for our tastes, we stop eating, kissing, and listening. But the law of large numbers suggests that when a measurement is too imperfect for our tastes, we should not stop measuring. Quite the opposite—we should measure again and again until niggling imperfections yield to the onslaught of data. Those subatomic particles that like to be everywhere at once seem to cancel out one another's behavior so that the large conglomeration of particles that we call cows, cars, and French Canadians stay exactly where we put them. By the same logic, the careful collection of a large number of experiential reports allows the imperfections of one to cancel out the imperfections of another. No individual's report may be taken as an unimpeachable and perfectly calibrated index of his experience—not yours, not mine—but we can be confident that if we ask enough people the same question, the average answer will be a roughly accurate index of the average experience. The science of happiness requires that we play the odds, and thus the information it provides us is always at some risk of being wrong. But if you want to bet against it, then flip that coin one more time, get out your wallet, and tell Paul to make mine a Guinness.

Onward

One of the most annoying songs in the often annoying history of popular music begins with this line: "Feelings, nothing more than feelings." I wince when I hear it because it always strikes me as roughly equivalent to starting a hymn with "Jesus, nothing more than Jesus." Nothing more than feelings? What could be more important than feelings? Sure, war and peace may come to mind, but are war and peace important for any reason other than the feelings they produce? If war didn't cause pain and anguish, if peace didn't provide for delights both transcendent and carnal, would either of them matter to us at all? War, peace, art, money, marriage, birth, death, disease, religion—theses are just a few of the Really Big Topics over which oceans of blood and ink have been spilled, but they are really big topics for one reason alone: Each is a powerful source of human emotion. If they didn't make us feel uplifted, desperate, thankful, and hopeless, we would keep all that ink and blood to ourselves. As Plato asked, "Are these things good for any other reason except that they end in pleasure, and get rid of and avert pain? Are you looking to any other standard but pleasure and pain when you call them good?" Indeed, feelings don't just matter—they are what mattering means. We would expect any creature that feels pain when burned and pleasure when fed to call burning and eating bad and good, respectively, just as we would expect an asbestos creature with no digestive tract to find such designations arbitrary. Moral philosophers have tried for centuries to find some other way to define good and bad, but none has ever convinced the rest (or me). We cannot say that something is good unless we can say what it is good for, and if we examine all the many objects and experiences that our species calls good and ask what they are good for, the answer is clear: By and large, they are good for making us feel happy.

Given the importance of feelings, it would be nice to be able to say precisely what they are and how one might measure them. As we have seen, we can't do that with the kind of precision that scientists covet. Nonetheless, if the methodological and conceptual tools that science has developed do not allow us to measure the feelings of a single individual with pinpoint accuracy, they at least allow us to go stumbling in the dark with pickled rulers to measure dozens of individuals again and again. The problem facing us is a difficult one, but it is too important to ignore: Why do we so often fail to know what will make us happy in the future? Science offers some intriguing answers to this question, and now that we have a sense of the problem and a general method for solving it, we are ready to inspect them.

The End of this excerpt
Here is some information about this author:

**Education**
University of Colorado at Denver, B.A., Psychology, 1981
Princeton University, Ph.D., Social Psychology, 1985

**Academic History**
Assistant Professor, University of Texas at Austin, 1985-1990
Associate Professor, University of Texas at Austin, 1990-1995
Professor, University of Texas at Austin, 1995-1996
Professor, Harvard University, 1996-2005
Ford Visiting Professor of Behavioral Science, University of Chicago School of Business, 2003
Harvard College Professor, Harvard University, 2005 -

**Honors**
B.A. from University of Colorado at Denver, summa cum laude, 1981
Outstanding Graduate Award, University of Colorado at Denver, 1981
Nell G. Fahrion Award for Excellence in Psychology, University of Colorado at Denver, 1981
Phi Beta Kappa, 1981
National Science Foundation Predoctoral Fellow, 1981-84
Porter Ogden Jacobus Fellowship, Princeton University, 1984-85
Raymond Dickson Centennial Endowed Teaching Fellowship, University of Texas at Austin, 1987-88
President’s Associates Teaching Excellence Award, University of Texas at Austin, 1990-91
National Institute of Mental Health Research Scientist Development Award, 1991-96
American Psychological Association Distinguished Scientific Award for an Early Career Contribution to Psychology, 1992
Fellow, Center for Advanced Study in the Behavioral Sciences, 1991-92
Fellow, Society for Personality and Social Psychology, 1996
Fellow, American Psychological Association, 1997
Fellow, Society of Experimental Social Psychology, 1993
James McKeen Cattell Award, and the John Simon Guggenheim Memorial Foundation Fellowship, 1999
American Philosophical Society Fellowship, 1999
Phi Beta Kappa Teaching Prize, Harvard University, 1999
13th Most Frequently Mentioned Contributor to Social Psychology
Fellow, American Psychological Society, 2003
Author of 2 of the "Top 20 Most Cited Articles in JPSP from 1965-2000"
"Miswanting" named by Macmillan Dictionary as the 8th most popular new word of 2004
Harvard College Professorship, 2005-2010
The Royal Society General Book Prize for Stumbling on Happiness, 2007
Diener Award for Outstanding Contributions to Social Psychology, Foundation for Personality and Social Psychology, 2008
Elected to the American Academy of Arts & Sciences, 2008
Elected Fellow, Society of Experimental Psychologists, 2009
Massachusetts Psychological Association, Presidential Citation for This Emotional Life, 2010

His 2007 book, *Stumbling on Happiness*, spent 6 months on the New York Times bestseller list, has being translated into 30 languages, and was awarded the Royal Society’s General Book Prize for best science book of the year.

He is a contributor to Time, The New York Times, and NPR's All Things Considered, and has been a guest on numerous television shows including The Today Show, Charlie Rose, 20/20, and The Colbert Report.

He hosted and co-wrote the award-winning NOVA television series This Emotional Life which aired on PBS in January 2010 and was seen by more than 10 million viewers.

Honorary Patron of the University Philosophical Society, Trinity College, Dublin, 2013