Menand, The Metaphysical Club, 151-200

Free Will vs. Determinism: These difficult and utterly fascinating chapters take us through some of the DETERMINIST thinking (based on the possibility of CERTAIN knowledge of the physical and social universe) that pragmatism sought to dismantle and replace with a CONTINGENT understanding of the universe. This illuminates the age-old question of FREE WILL versus DETERMINISM. Do we really have choices, is the unfolding of the universe really open to alternative possibilities, or is everything quite predictable because determined by forces or laws outside our control?

Part of what makes these chapters difficult is that pragmatists (or at least Charles Peirce – pronounced, by the way, "purse") used some of the same concepts and tools the determinists used. Peirce, Menand writes, tried to adapt "a view predicated on the conviction that there is certainty in the universe to views predicated on the presumption that there is not" (152). I hope you will see the democratic and environmental implications of these distinctions and I will try to bring them out in class. But, for starters, and in the spirit of the mathematical dimensions of these chapters, consider these contrasting equations:

Certainty + Determinism = Elitism

Contingency + Human Error = Democracy

I freely confess I'm not sure I understand it all. In respect for Charles Peirce's observation that in a "higgledy-pigglety world" knowledge must be social, I'll see what I can learn from you.

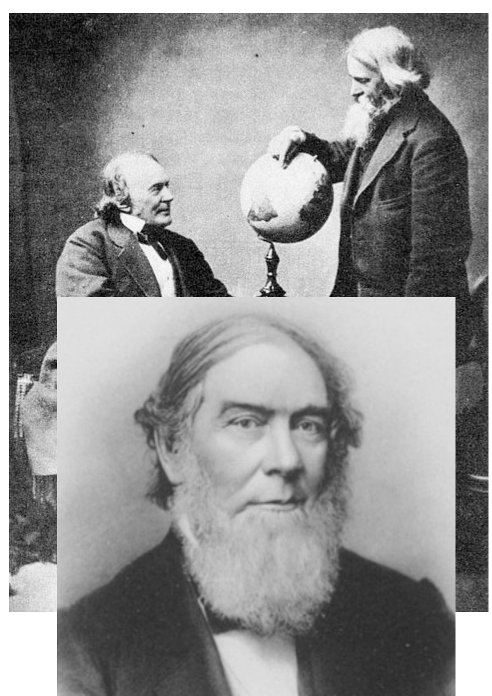
The Peirces: Certainty and Elitism and Damaged Goods: Benjamin Peirce was the first internationally renowned mathematician the United States produced. He believed that the human mind and the natural world were designed for each other, by a divine creator, and that, at least theoretically, human beings could understand the universe (156). He believed, in other words, that certain knowledge existed, as did laws that governed the universe. But Peirce was also a confirmed elitist. He made few concessions to ignorance or the unenlightened, encouraging most Harvard students to not pursue mathematics.

Benjamin Peirce was also the father of the pragmatic philosopher Charles Sanders Peirce. The younger Peirce seems to continue our theme of "damaged goods," though exactly what damaged him is not clear. What is clear is that the young Peirce had a violent and erratic and rather shabby character. For our immediate purposes, however, the key thing to keep in mind is (as above) that Charles Peirce saw himself as furthering his father's work by adapting "a view predicated on the conviction that there is certainty in the universe to views predicated on the presumption that there is not" (152). Charles Peirce did not have a successful career but he produced startling insights. "His failure," Menand writes, "was of a singular and spectacular kind" (152).

1. People used inductive reasoning to derive laws from observations, Benjamin Peirce argued, and then deduced additional cases from the logic of the law. What role did mathematics and human error play in this process? What was the National Academy of Sciences?

"Mathematics is the science which draws necessary conclusions" (154): Benjamin Peirce believed that people developed hypotheses, or generalizations, from observed data. They then made inferences, or deduced additional cases and conclusions from those hypotheses and tested then against new observations. When the new observations fit or confirmed the hypotheses, these hypotheses moved toward law. Our minds are fallible; we make mistakes in both induction and observation but there is a certain truth about the natural world that we can, at least theoretically, ascertain. Since mathematics is the most rigorous form hypothesis and inferences can take, mathematics is the purest form of all thought, moral as well as scientific.

> *There is proof enough furnished by every science, but by none more than geometry, that the world to which we have been allotted is peculiarly adapted to our minds, and admirably fitted to promote our intellectual progress.*



The Scientific Elite and the National State: "Extracting" and "Exploiting": Sharing a belief that science could reveal of the laws of the divine creator, Benjamin Peirce and Louis Agassiz teamed up together to establish a scientific elite tied to the national state. In 1849, Peirce secured appointment as the consulting astronomer on the project to create a nautical almanac (describing the positions of the stars for the purposes of navigation) for the U.S. Navy. Peirce's championing of Alexander Dallas Bache, who became superintendent of the U.S. Coast Survey, led to Peirce's appointment as chief astronomical consultant to the survey. Bache expanded funding for the Survey five times over by tying it to territorial expansion. In other words, these scientists were part of a national state encouraging more intensive exploitation of the natural environment ("extracting" and "exploiting," above, are meant to remind you of the reading in Merchant). Peirce, Agassiz, Bache, and Charles Henry Davis (superintendent of the almanac) became known as the "Lazzaroni," the beggars. They secured public funds for the scientific elite and, in 1863, convinced Congress to fund a National Academy of Sciences, as official advisor to the national government. This was less the reformist national state that freed the slaves than the expansionist state. Neither Benjamin nor Charles Peirce believed in abolition or racial equality. In a life of general irresponsibility, Charles avoided the draft by securing a job with the survey, where he worked closely with his father. http://www.nasonline.org/ http://www.nauticalcharts.noaa.gov/

2. What brought Holmes, Sr. and Agassiz into court arrayed against Benjamin and Charles Peirce in the spring of 1867 and what did they testify? Why were some people offended by the Peirces' "parlor trick"?

The Whaling Industry, the Civil War, and the Howland Will: One of the most profitable industries before the Civil War, the dangerous and risky whaling industry piled up fortunes most effectively for the "agencies" that financed the voyages. These agencies, located in New Bedford, were run by Quakers who tended to intermarry. Thus vast fortunes accumulated, at least until Confederate raiders and competition from kerosene and petroleum largely destroyed the industry. One of the fortunes, the Isaac Howland, Jr. fortune, wound up in court in December 1865 when Edward Robinson, one of Howland's partners, and Sylvia Ann Howland, Isaac's granddaughter and another partner in the firm, died within three weeks of one another. The sole remaining heir, Hetty Robinson, Edward's daughter and Sylvia's neice, had been granted a portion of the estate

outright (nearly $1 million) and the income on the rest ($5 million). Upon Hetty's death, the remaining fortune was to be distributed to other relatives. But Hetty claimed that Sylvia Ann Howland had entered into a "mutual will," each agreeing not to change the will without notifying the other, that left all the money to Hetty (except for small, unspecified bequests; Hetty said she knew where these were to go). Given the money at stake, no expense was spared at adjudicating the case. The case hinged on the authenticity of Sylvia's signature on the "second page," revoking all other wills (and thus validating an 1862 will that left all the money to Hetty and invalidated the later 1863 will that left her only a part). The three signatures, on two copies of the second page and on the 1862 will, did seem authentic, only perhaps too authentic, too perfectly matching. Each side paraded an impressive set of scientific and handwriting experts (in an age where people made money from handwriting).

Star Witnesses For and Against: Adams, Holmes, Sr., and Agassiz vs. the Peirces: Induction, Hypothesis, Law and 2,666,000,000,000,000,000,000: Son of the president, John Quincy Adams testified that his father could, indeed, write identical signatures over and over again. But the president had been known for his handwriting ability and Sylvia had been an invalid. Holmes and Agassiz testified as experts on microscopes and supported the second page. To counter this, the defense enlisted the Peirces. Charles testified that he had carefully examined the signatures, identifying 30 separate "positions" where the writer made a downward movement of the pen. Using 42 (after two were found to be flawed) examples of Sylvia's signature, he compared each to the other (41 + 40 +39 ….) for 861 comparisons. On each comparison 30 positions had to be compared and so he actually made 25,830 comparisons. Charles found 5,325 cases of coincidence (identical positions) out of those 25,830, or roughly 1 in 5. Thus by induction, by observation, Charles found that one in five positions were identical by chance. Benjamin then used this to hypothesize a law and to construct a chart that would show how many times, by chance, 3 or 4 or 5 up to 12 positions would coincide. At the same time, Charles checked the same distribution on the 42 signatures. The two charts were "remarkably close" (172, see charts on 171-172). Based on this evidence, Benjamin was then able to testify that the chances of Sylvia's signature coinciding at all thirty points was 1 in 5 to the power of 30, or 2,666,000,000,000,000,000,000. "So vast an

> So vast improbability is practically an impossibility. Such evanescent shadows of probability cannot belong to actual life. They are unimaginably less than those least things which the law cares not for. … The coincidence which has occurred here must have had its origin in an intention to produce it. It is utterly repugnant to sound reason to attribute this coincidence to any cause but design.

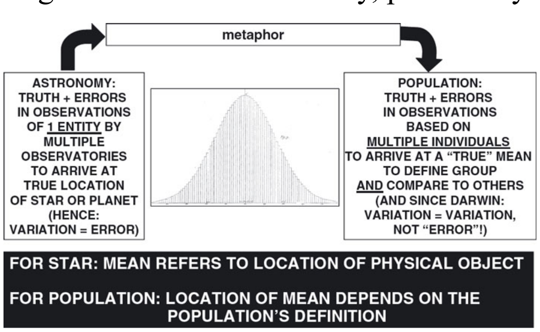
improbability is practically an impossibility" (172). The signatures must have been forged, that is made identical on purpose, not by chance.

Free Will and Determinism: "The elements of will and desire unfit it for judgment by such laws" (174): Although the testimony did not decide the case (which was decided, against Hetty, on a technicality, although Hetty died fabulously rich anyway, known as the "witch of Wall Street"), many people found the Peirces' "parlor trick" offensive. As far as Benjamin was concerned, the matching of Charles's and his charts confirmed the hypothesis and made it a law. But others thought statistical laws could not be applied to matters of intention, will, and desire. We tried to recreate our signature every time and people did not like being told that it was impossible (just as we don't like to be told our behavior is statistically normal). The trick seemed to undermine our faith in free will and make the universe appear determined.

Ch. 8 The Law of Errors: "the equation of the normal probability curve to which the accidental errors associated with an extended series of observations tend to conform"

3. What problem was the "method of least squares" designed to solve? "Statistics conquered uncertainty by embracing it," Menand writes (182). Could we then extend "the application of probability from physics to people" (183)?

The Method of Least Squares: The law of errors came out of two bodies of thought that originated in the 17th century, probability theory and statistics. The law of errors, which linked the magnitude of an error of measurement to its frequency, allowed astronomers to make use of a large number of divergent measurements of the position of a star. People made mistakes in measuring the position of the star and all sorts of other atmospheric conditions including humidity and temperature could also affect the measurement. But the law of errors told



astronomers that these errors of measurement would conform to a bell-shaped curve (paralleling the probability of two six-sided dice rolling a number between 2 and 12; 7 will come up most often, 2 and 12 least often). Thus the erroneous measurements will cluster around the mean, at the least suggesting where the star actually is. The "method of least squares" held that the star's "likeliest position is the one such that the sum of the squares of the differences between it and each of the aberrant observed positions is the smallest possible" (180).

Laplace: Pursuing Precision by Quantifying Error in Physics and People: The method of least squares could also be used to determine the orbit of a comet moving across the sky, although the calculations obviously became more difficult. The French scientist Pierre-Simon Laplace was not the first to explain the mathematics but he did get most of the credit. A politically-adroit figure who lived through a variety of French revolutions, Laplace was also a brilliant scientist and effective popularizer.[1] His theories of probability had wide influence. Laplace emphasized that probability (as with the method of least squares) measured phenomena that elude precision; probability told us how likely our best guess is (thus the Peirces testified that very attractive odds suggested that the Howland signatures were forgeries). Statistics, Laplace explained, did not ignore errors but quantified them in a way that allowed far greater precision than we had thought possible (the Peirce's 1 out of 2,666,000,000,000,000,000,000). Laplace also thought probability and the law of errors could be extended to all sort of phenomena, including human behavior (birth and death rates, for example, or marriage and murder rates).

"All events, even those which, by their insignificance, seem not to follow the great laws of nature, follow them as necessarily as the revolutions of the sun" (183).

The Bogey of Determinism: Benjamin and Charles Peirce used the method of least squares in their work on the coast survey and in other ways, even publishing papers on it. So the Howland case made perfect sense to them, believing as they did that seemingly random errors or deviations actually followed laws. And scientists generally found the law of errors a compelling means of understanding

Note, amusingly, that in this chapter on the law of errors Benjamin is shown to be wrong no fewer than three times in the space of two pages, 184-185. Does that perhaps suggest the conclusion of this chapter (that knowledge is social) and that this is indeed how science proceeds?

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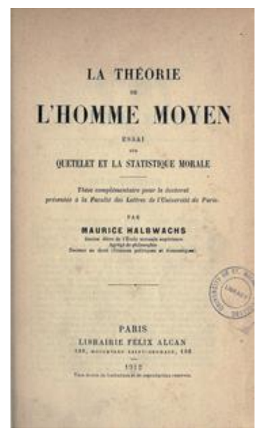
[1] Laplace's nebular hypothesis suggested that the solar system had resulted from the cooling of a gaseous atmosphere surrounding the sun. Laplace didn't see the solar system thus evolving; he meant to explain how the solar system (like Agassiz's species) persisted. But others picked up on the similarities between his hypothesis and evolutionary theory.

seemingly random and unpredictable fluctuations. But the extension of statistical thinking to human activities also “captivated, and sometimes appalled, the popular imagination” because it pointed toward determinism.

4. What two conclusions did Quetelet draw from his researches and how did they undermine the idea of human agency and human will (even while superficially supporting evolutionary thinking)? Why were most statistical thinkers (including Buckle and his “determinist account in praise of reason” – 193) advocates of laissez-faire liberalism?

Quetelet’s “L’Homme Moyen”: a Strange Combination of Determinist and Evolutionary Thinking: The Belgian mathematician Adophe Quetelet took Laplace’s hint about “social mechanics” (applying statistical thinking to human activities) and ran with it. Quetelet combined statistics, the monitoring of the vital statistics of the population of a state[2], with the law of errors. In his 1835 work, *On Man and the Development of His Faculties*, Quetelet identified laws that governed human behavior, including murder. The number of murders in France, he showed, was quite constant from year to year, as were the numbers of murders with specific types of weapons. The number of annual murders, and even the small fluctuations from the norm, could be predicted. Quetelet went on to argue that this “social physics” showed that crime was a social responsibility, with individuals simply the instrument for murders *determined* by social conditions. He also argued that social physics could help us determine the “average man,” the mean man who represented “everything that is grand, beautiful, and good” about a particular nation. This “l’homme moyen” owed nothing to philosophy or theology, but arose from the scientific analysis of the social data of a nation. Quetelet demonstrated this with measurements of Scottish chests, leaping from the hypothesis that multiple measurements of a single Scottish chest would cluster around a mean (as with observations of a star) to the assumption that measurements of multiple Scottish chests would also cluster around a mean. Quetelet could make this leap because he believed that social conditions in Scotland produced chests of a certain size in the same way that a planet’s mean



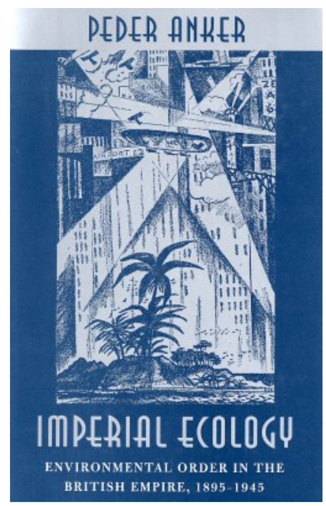
[2] Etymologically linked to “state” and collected by officials called “statists,” statistics was called “political arithmetic in Britain.

distance from the sun determined its orbit (189). This also suggested that social conditions shaped human development and thus superficially, at least, supported evolutionary thinking.[3]

Buckle's *The History of Civilization in England* (1857): A Statistical and "Determinist Account in Praise of Reason": While generally setting European scientists to work on statistical questions (including the average European urine as found in train station urinals), Quetelet's findings received, appropriately, different receptions in different nations. The Germans remained skeptical while the French embraced his research. But the British loved Quetelet most of all.

> *The "actions of men, being guided by their antecedents, are in reality never inconsistent, but, however capricious they may appear, only form part of one vast scheme of universal order…." Buckle, The History of Civilization in England (1857).*

Henry Thomas Buckle, in his *History of Civilization in England* (1857), cited Quetelet in support of his assertion that free will did not exist but that, instead, all human actions were socially determined. Supported with mountains of statistics, Buckle argued that four factors, climate, food, soil, and the "General Aspect of Nature," explained human behavior and human history. The rate of marriage, in his favorite example, was determined not by personal whim but by the price of corn. Buckle compared England, favorably, to other European nations and those nations, favorably, to non-European nations. The "General Aspect of Nature" explained the emergence of reason in Europe. Where nature's beauty and power overawed humans, reason never developed (as in India). But where nature was more subdued, as in Greece, reason flourished. The seriousness (or lack thereof) of Buckle's thought is suggested by this "determinist account in praise of reason" (if all is determined, reason is useless).



Statistics, Laissez-Faire, and the Imperial Approach to Nature: But Buckle's history won a wide readership and set off a debate about free will and determinism in Europe at mid-century. Statistical thinking appeared to hold the promise of measuring and "cataloging the universe and creating models for manipulating it" (194; though I find this hard to follow, even while terribly intriguing, for much the same reason that Menand questions Buckle's determinist account in praise of reason; if everything can be catalogued and measured with statistical accuracy then can

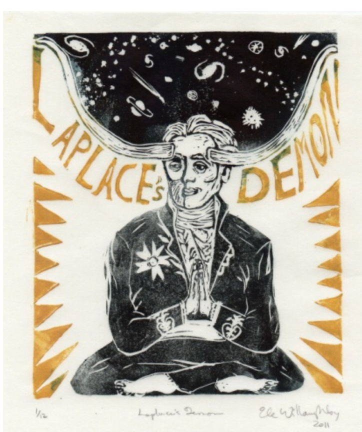
[3] Quetelet's application of the method of least squares to racial types revealed very little statistical variations among "racial" types and convinced him of the common origin of all humans.

the results also be manipulated?). Statistics appeared to uncover an order, a set of stable laws, which governed apparently random and unpredictable events (the behavior of humans as much as molecules). The idea of order underlying chance made Darwin's theory of natural selection appear more believable. But it also encouraged laissez-faire thinking, the belief that – if left alone – things would regulate themselves. Statisticians in the nineteenth century thus tended to be laissez-faire liberals and Darwinism, too, encouraged laissez-faire thinking. Once statisticians depicted nature as acting like a market (order coming out of apparent chaos) it became all the easier to believe that the market operated like nature.

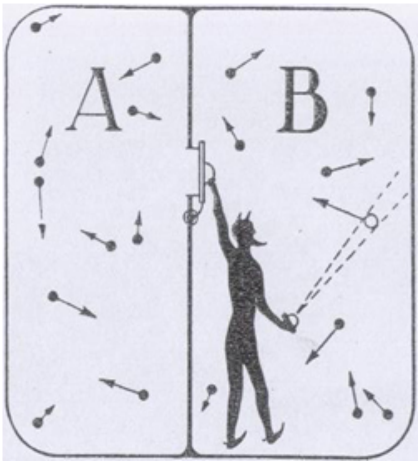
5. How did two demons (Laplace's and Maxwell's) reflect the difference between Benjamin Peirce's conception of the universe and Charles Peirce's? Did Charles Peirce derive a determinist or a democratic conclusion from the law of errors?

Squaring Intelligibility with Indeterminacy: Charles Peirce drew different conclusions from the discovery of statistical regularity. He opposed both economic individualism and determinism and believed that life meant spontaneity (the springs of action come from inside us) and that the universe is indeterminate. But he shared his father's belief that we could understand the universe, that our minds were designed to understand it. He tried to square intelligibility with indeterminacy.

Laplace's Demon: The Uncertainty of Our Understanding: The difference between the views of Benjamin and Charles Peirce, and between two generations of scientists, can be explained in terms of two demons, Laplace's and Maxwell's. Laplace developed a billiard-ball theory of the universe, that each event – including the actions of humans – is the inevitable outcome of a chain of prior events. The array of forces and prior events in the universe meant that one and only one thing could happen; chance played no part. Laplace's demon is a being in possession of perfect knowledge of those forces and prior events. Given those, the demon can predict everything about the future. Nineteenth-century scientists were transfixed by the demon, invoked it often, and aspired to that perfect knowledge. Laplace used his demon to explain the usefulness of probability theory. We lack that perfect knowledge and so probability theory, the law of errors, quantified our ignorance. The only uncertainty – the chances probability is calculating - is the degree of certainty of our understanding. The events themselves are certain.



Maxwell's Demon and Darwin's Evolution: The Uncertainty of Events: In *Theory of Heat* (1871), James Clerk Maxwell applied the law of errors not to human measurements but to the velocity of molecules in a sealed container. He hypothesized that the velocity of those molecules "are distributed among the particles according to the same law as the errors are distributed among the observations in the theory of the 'method of least squares'" (197). Maxwell's demon is a creature inside that sealed container, opening and closing a door between two compartments, such that the faster (and warmer) molecules congregate on one side and the slower (and colder) molecules end up on the other side. This, Maxwell explained, would counter the second law of thermodynamics (the dissipation of energy). British physicist William Thomas had dramatically predicted, in 1852, that the universe would in time suffer heat death, with everything the same temperature and incapable of performing any sort of work. Maxwell intended to refute this determinist account. The second law of thermodynamics was only a probability, a strong one, of course, but still only a probability. An infinitesimal chance remained that molecules would line themselves up in such a way as to create energy spontaneously. Darwin's theory of natural selection paralleled this sort of thinking. A chance event occurs, say a finch with an unusually long (or short or broad or whatever) beak is born (outside the normal range of probability, like getting that tumblerful of water back out of the sea), and it changes everything. The environment "selects" (like Maxwell's demon) that bird, that beak, for survival, and the future of finches (and the universe) changes forever. Darwin's theory is perhaps "the most profound and most representative product" of the fascination with statistics in the nineteenth century (even if Darwin himself understood little of statistics).



The second law of thermodynamics, Maxwell wrote in a letter, "has the same degree of truth as the statement that if you throw a tumblerful of water into the sea, you cannot get the same tumblerful of water out again." 198

Charles Peirce's Higgledy-Piggelty World: Knowledge is Social: Laplaceans didn't think much of Darwin's theory. Instead of seeing randomness as the most important fact about nature, as Darwin did, the Laplaceans saw randomness as only appearance, a matter of human confusion or ignorance. The British reviewer of Quetelet's work, the Laplacean astronomer John Herschel dismissed Darwin's theory as "the law of the higgledy piggelty," not an unfair characterization. Charles Peirce devoted his life to figuring out what it meant to know something in such a world. His most profound conclusion

"The progress of civilization requires that more and more intelligence be devoted to social affairs, and this not the intelligence of the few, but that of the many." Henry George, 1883.

was that knowing could not be a matter of the individual mirroring of reality. The fallibility and variety of perception (among minds and within individual minds) would make a mirror image of reality impossible even if that reality was certain and determined. But combine fallibility and variety of perception with a reality that is uncertain and ever-changing and our only hope is, through the law of errors, the accumulation of social knowledge.

Executive Summary of Chapter 8 "The Law of Errors": What does it mean to be Human?

Uncertainty: From Measurement, Knowledge, and Understanding to the Events Themselves: The chapter is ultimately about uncertainty. But first it's about thinkers who tried to deal with the uncertain accuracy of our own measurements, knowledge, and understanding. They did so by quantifying errors, with the aid of probability theory and statistics. The chapter ends with a group of thinkers who added to that uncertainty, the uncertainty of the events studied. Maxwell and his generation of scientists came to believe that even what we think of as physical laws are themselves only probabilities.

Extending "the application of probability from physics to people" (183) and Laplace's Demon: Much of the chapter is about a group of statistical thinkers who applied the tools of probability and statistics to analyze – and perhaps to try to predict and control – human behavior. Quetelet and Buckle believed that social conditions, which we might analyze statistically, determined human behavior. This set off a culture-wide debate about free will vs. determinism. The determinists aspired to become Laplace's demon, in possession of complete knowledge and capable of complete prediction.

Arendt on Action and Behavior and its Environmental Implications: The classicist and philosopher Hannah Arendt, in the mid 20th century, characterized the mid-nineteenth century vogue for statistical thinking as "the rise of the social," the belief that deep, underlying social forces determined human behavior (a belief that underlay both the social scientific investigation of human behavior and the state policies designed to control and direct human behavior). She contrasted this with the classical appreciation of action, which was idiosyncratic, spontaneous, and unpredictable (not least in its consequences). Consider this passage from Christopher Lasch's The True and Only Heaven (133) that might clarify the environmental implications of all this: "Whereas every action in unique and idiosyncratic, behavior falls into patterns that repeat themselves in a predictable fashion. Action, whether it is reckless and impulsive or deliberate and discriminating, is the product of judgment, choice, and free will, whereas behavior is automatic and reflexive. Action is aware of itself; behavior, habitual and unconscious …. Action is the capacity to initiate, as Hannah Arendt has pointed out, to make a new beginning. Behavior sticks to the beaten path. Action has unpredictable consequences, often at odds with those intended. Behavior, on the other hand, obeys measurable laws, analogous to physical laws of motion. If we think of men and women as creatures of circumstance and habit, we will tend to minimize the role of ideas and initiative in history….If we think of men and women essentially as moral agents, we are more likely to be impressed with the ironic disjunction between intentions and results, with the capacity of the human will to free itself from natural limitations, and at the same time with its inclination to overreach itself and to wreck destruction in the attempt to dominate its surroundings."

Maxwell's Demon and Darwin's Finches: An Uncertain Universe: The pragmatists rejected the determinist view of things and embraced what they learned from Maxwell's demon and Darwin's finches. It isn't just our knowledge that is uncertain, but the universe itself and all the events within it are also uncertain. Small random changes/chances can add up to huge, comprehensive changes (like all the warm molecules lining up on one side or a chance mutation leading finches in a new evolutionary direction; what mutations, for example, led mammals to walk on two legs and what consequences did that have?).

Knowledge is Social: From Least Squares to C. S. Peirce: This entire chapter, from beginning to end, impresses upon us that knowledge is social (and don't miss my text box quotation from Henry George above). The method of least squares relied on multiple, even if erroneous, observations from many different people to arrive as a precise answer. Benjamin Peirce's wrong guesses could only be corrected through the collective enterprise of "science," where peer reviewers rigorously tested and retested his conclusions. And, at the end of the chapter, we see Charles Peirce concluding that in an uncertain universe (both our knowledge and the events themselves uncertain) knowledge could never come in the form of an individual mirroring of reality. Somehow knowledge had to be social, the accumulated accomplishment of us all (which includes generations before and after us). And as I tried to suggest in class, this too has profound environmental consequences. Can we address our environmental challenges with only the aid of a handful of exceptional scientists and corporate leaders, aided by a technological understanding of the universe, or do we need a broader, cultural change that involves an increase in the level of social knowledge?

Looking Forward (to today's reading) on the Pragmatists and Action: The pragmatists saw people as actors (making bets, based on beliefs, and changing the changes going on around them). Pragmatism was an effort to provide people with some basis for true belief and effective action in a world dominated by uncertainty (uncertainty not just of our knowledge but of events themselves).

Chapter 9 "The Metaphysical Club"

This chapter is certainly one of, if not the most difficult chapter in the book. I do not profess to fully understand it and I certainly cannot encapsulate its meaning in a few simple phrases. But keep in mind that the thinkers under examination sought a way to rehabilitate belief in the wake of a disastrous Civil War which prewar beliefs failed to prevent and, indeed, did much to cause. They also struggled to rehabilitate belief in the wake of their own disillusioned fear that free will is a mirage and that all our actions are determined in a mechanistic universe.

6. What did Chauncey Wright mean by "positivism" and "cosmical weather"? How did those concepts relate to Wright's – and other pragmatists' – experience of the war?

The Club and Its Members: The opening pages of the chapter simply set the stage, explaining how the members of the Metaphysical Club came to know one another and how James learned how to talk to Peirce (one had to jab and challenge rather than listen respectfully). Then Menand introduces the key figure, Chauncey Wright, a computer (once an occupation) who worked for Benjamin Peirce on the Nautical Almanac. Wright was dull and cold except when in conversation. He seemed to know everything but few ever saw him reading in a sustained way. He had little ambition and much trouble – as a depressive and alcoholic. Damaged goods again. We learn at the end of the chapter that Wright as well as another member of the club, St. John Green, died young and at least partly from drinking.

Positivism: Don't Say Higher or Lower or Necessary: Wright's central belief was positivism, a doctrine he defended "against all comers" (207). By positivism, Wright meant a radical distinction between facts and values. People were prone to metaphysical speculation about the origin, end, and meaning of life. That was to be expected, but also not to be confused with science. Science taught that the universe is constantly changing and we have at best uncertain knowledge about it, certainly not enough certainty to understand anything about the origin, end, or meaning of life. We couldn't even predict the weather, much less say anything with confidence about much more complex phenomena such as human happiness or the future of society. He didn't doubt that everything had material causes, just that we lacked precise knowledge of those causes. Statistical explanations of history did not differ from providential explanations; both were superstition. Wright thought the fickleness of the weather provided a key to the nature of the universe. A set of rough and tumultuous external forces provided the impetus for change in the universe, including organic change. In a theory quite like Darwin's, Wright thought an elemental storm brought organic life into being and as it subsided less dramatic weather a less dramatic set of changes set in. Wright insisted that none of this should be understood in terms of higher or lower or better.

"No *real* fate or necessity is indeed manifested anywhere in the universe," Wright wrote a friend, "— only a phenomenal regularity."

He rejected the idea of evolution because it seemed to carry some connotation of progress. He embraced only natural selection.

Cosmic Weather, Spencer's Evolution, and Laplace's Nebular Hypothesis: Never Say Necessary: Herbert Spencer's use of evolution to explain social development particularly annoyed Wright. Spencer took scientific tools of analysis, like continuity or evolution, and acted as it they had some reality in nature. Continuity is just the word we attached to a bunch of observations; neither continuity nor its elaboration in evolution should be used to suggest the universe has some "intelligible order, a relation of beginning and end – a development." Wright criticized Laplace's nebular hypothesis for the same reason that it suggested development, from lower to higher or chaos to system. Wright thought it just as likely that the solar system turn back to the gases from which it supposedly condensed. The universe is simply cosmical weather, unpredictable and without direction.

"Where we cannot be certain, we must affirm nothing" (Menand's gloss on Wright, 212-213): Morality, Common Sense, and Wright's Denial of Cold Harbor: If metaphysical speculation is groundless, then how do we decide moral and religious questions? Wright thought as a society we might settle on "the greatest good for the greatest number." But as an individual, he professed a philosophical indifference to such matters. He thought that, in practice, we relied on common sense to decide moral questions, without reference to moral systems or philosophies. But literally hundreds of thousands of Americans, including Wright's own brother at Cold Harbor, had died for moral systems and philosophies. The war showed in horrible ways that such beliefs have consequences; even if the influence of belief on conduct is unpredictable (Abbott fighting for a cause he did not believe in), it was surely not irrelevant. Wright might have said that "people were better off relying on their instincts of sympathy and common sense than they are trying to obey the dictates of a system of abstractions," but the horror of the war had so turned him against moral systems that he could not even had utter one as innocuous as that one.

> *"To stake any serious human concern on the truth of this or that philosophical theory seems to me, therefore, in the highest degree arrogant and absurd…."* Wright, quoted on 213.

7. Wright's thought, Menand argues, set the task for those assembled in the Metaphysical Club, namely to "devise a theory of conduct that made sense in a universe of uncertainty…" (214). What did Holmes mean when he said he was a "bettabilitarian"? How did Renouvier provide James with a version of Wright's idea *without the nihilism*? How did Green provide Peirce with an understanding of belief as what a person "would be ready to act upon, and to risk much upon" (226)?

The Challenge Wright Posed for the Pragmatists: For Wright's colleagues, however, he had laid out the challenge. What theory of conduct could replace the discredited certitudes of the prewar period and serve us in an uncertain universe like the one Wright described? As an aside, Menand points out that these various "clubs" (private, social gatherings) hosted much of the intellectual activity of the culture before the rise of the modern university (which he describes the origins of at the end of the chapter).

Bettabilitarianism: Amoebas with Mutant Ideas? Wright had a huge influence on Holmes's thought. Sharing Wright's war-borne disillusionment, Holmes particularly admired Wright's argument that people made practical choices without much reference to philosophy and logic. People weren't all that different from amoebas. Holmes always argued that judges made decisions first and then developed their reasons, though he was at pains to show that this did not mean the decisions were arbitrary. But perhaps the most important thing Holmes took from Wright was the admonition to never say necessary. This provided Holmes a small belief in free will. Human beings might conjure up, as if in mutation, a belief that the universe is different from what it apparently is and, in acting upon the belief, exert some small force on the future of the universe. Holmes didn't put much stock in it, or in William James (whom he thought too hopeful and putting humans too much at the center of things). But James was a bettabilitarian too, and a much more thorough-going one.

> *Wright "taught me when young that I must not say necessary about the universe, that we don't know whether anything is* necessary *or not. . . . So that I describe myself as a* bet*tabilitarian. I believe that we can bet on the behavior of the universe in its contract with us. We bet we can know what it will be. That leaves a loophole for free will – in the miraculous sense – the creation of a new atom of force, although I don't in the least believe in it."* Holmes, quoted on 217

Certainty vs. Getting a Vote: Philosophy as a Means of Coping, Tested by Results: James thought Wright's effort to separate science and metaphysics was a metaphysical choice (why is consciousness less scientific, less natural, than digestion?), just as Wright's moral neutrality was a moral choice, one that suited him and helped him cope. That's what beliefs were; tools for helping us cope and deal with the world. In the midst of an emotional breakdown in the summer of 1869, James happened upon the French philosopher Charles Renouvier's defense of free will. Renouvier argued that "the doctrine of necessity" contained a contradiction, or at least could never be verified. For if all beliefs are determined, then how do we know that particular belief is true and how can we explain why one person believes in it and another doesn't? The only way out of the contradiction was to believe that we are free to believe. But we still can't be certain of our belief in free will (it's just that it isn't internally contradictory). Certainty isn't a quality of the universe, it is "a condition and an action of human beings" (219). "Properly speaking, there is no certainty; there are only people who are certain." James loved this and decided that his "first act of free will shall be to believe in free will," I shall "believe in my individual reality and creative power." He learned from Renouvier that philosophy could never give us certainty but that its value is in helping us cope and deal with the world. Hence a philosophy's truth is not in its logic, but in its results; does it help us cope and effectively deal with the world? James saw this as getting a vote – we could choose a belief, act on it, bet on it, and perhaps change the way things are. (James later wrote a review of a book by physicists laying out a thermodynamic theory of heaven where he argued that if the belief made a practical difference for the physicists, they were duty bound to believe it. Wright recognized the challenge and confronted James, forcing him to retract "duty.")

"a certain swerving": What constitutes truth in an uncertain universe? Like Holmes and James, Peirce found his association with Wright stimulating. But unlike the Laplacean Wright, Peirce was a Maxwellian, believing that the facts were always liable to "a certain swerving" from the paths that physical laws supposedly dictated. "Cause" and "effect," "certainty" and "chance," "hard" and "soft," all these were points on a curve of possibility, guesses or predictions, not fixed properties. To think otherwise, is to impute an unvarying essence to phenomena that are always in flux. But so in such a world, what does it mean to say something is "true"?

The doctrine that like causes invariably produce like effects is a "metaphysical doctrine," Maxwell argued, and "not of much use in a world like this, in which the same antecedents never again concur, and nothing ever happens twice" (222).

Belief is what I am prepared to act upon: truth as active making rather than passive mirroring: Nicholas St. John Green, another member of the Metaphysical Club, helped Peirce work this out. Green opposed the idea of legal formalism, a belief that legal concepts (such as "proximate cause" and "remote cause") denoted something fixed and immutable in the world. There was no actual "chain of causation," Green explained, for all causes are interdependent. Proximate and remote are designations that come from particular interests in the case; something is a remote cause because the courts have decided not to attach liability to it. Peirce saw this same interdependence of causes in the natural world. But neither of them thought terms such as "proximate cause" or "species" were useless terms. Such terms should be understood as establishing certain limits or boundaries, rather than naming a single discrete entity, and these terms had a concrete reality. It is just that the concrete reality of these terms was not in passively mirroring reality but in the human effort to shape the world to our needs. Proximate cause has precisely the reality of things that human beings attach legal liability to. All belief takes this purposive form, Green thought, for the aim of knowledge was not to create an accurate mirror image of reality but to provide effective means of remaking

"Hence, belief is not mere impression which the mind receives passively from the contemplation of facts external to it, but an active habit involving an exertion of will." S. J. Stephen, quoted on 226.

the world. Green probably got this from Stephen's study of criminal law, quoted in the text box above. In turn, Peirce rendered it as what "a man really believes is what he would be ready to act upon, and to risk much upon…" (226).

8. What was nominalism and how did Peirce's rejection of it lead him to a conception of all knowledge as social (as opposed to individual)?

Peirce's Pragmatic Critique of Nominalism: Reason's Social Commitments in a World Designed to be Known: In a paper read before the last meeting of the Metaphysical Club, Peirce called Green's doctrine of belief "pragmatism." He took this from Kant's Critique of Pure Reason, but whereas Kant thought only some beliefs were contingent belief, a sort of betting, Peirce thought in an uncertain world all belief was betting. But Peirce went further. He did not accept nominalism, the idea that since generalizations blur distinctions between singular and unreproducible things they do not represent anything real. Peirce took from his father the faith that the mind and the universe "are wonderfully matched," so if we think in generalizations there must be a match of those generalizations somewhere in the universe. But, of course, individual generalizations could not be expected to identify this actual reality any more than individual observations of a star's position could reveal with any precision the actual position of the star. An infinite number of beliefs or observations would be required for certainty. Peirce drew from this a criticism of selfishness and a defense of community. Reason is the faculty that seeks to understand the universe and because that understanding necessarily requires collective effort, reasoning "inexorably requires that our interests shall *not* be limited." A reasonable person who would not "sacrifice his own soul to save the whole world" was simply being illogical (229-230).

> *"The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real."* Peirce, 229