

21L017 – Essay #3 Questions (Raman)

Throughout this term we have been juxtaposing literary works with scientific and philosophical texts that bear upon the development of mathematical probability. This assignment asks you to focus on one or more of the texts from Quetelet and Dostoevsky onwards to examine the relationship between literature and probability. Your essay should have a clear argument, backed by evidence. It should also be alert to the complexities of the relationships between science and literature, thinking in particular not just of how science and philosophy may influence literature, but of ways in which literary texts may catch up or expand upon latent implications in the scientific and philosophical paradigms upon which they draw.

With this overarching frame in mind, please write an 8+ page essay responding to one of the topics listed below. Essays are due **Wednesday 14th December by midnight**; please deliver a hard copy of your essay to my office (14N-432) AND post the essay on our Stellar site.

Requirements: This time around you don't need to provide a separate sheet with your topic sentences (the exercise may still be useful for you to figure out whether you have a coherent argument, however). To recapitulate the requirements:

- Papers should consist of at least eight double-spaced pages in no more than 12-point typeface (preferably Times Roman or equivalent) and with one-inch margins, not counting page numbers at the bottom of the page.
- A **title page** should precede the essay itself – it should not be numbered, and it should not be included in your count of words/characters. The title page should include (a) your name (b) the title or subject of your essay (c) a character-count and a word count of the document (less the title page. Any reasonable word-processing program will provide the facility to enable you to fulfill this requirement. The remaining pages of your paper should be numbered, starting with the first page of text.
- I shall be very strict this time with regard to how you cite texts in your essay, as well as to such formatting issues as spacing, page numbering, and so on. So please make sure to read your essay carefully before submitting to ensure that you have adhered to the necessary requirements.
- Note, too, that I can't give you extensions for this assignment since I am leaving the country on the 18th of December, and need to have all my grades in before departure. Therefore: plan your end of term with this fact in mind!

1. A central topic in probability at least from Hume onwards concerns the problem of how one draws inferences based on observation, and the implications of inductive

reasoning for thinking about the world. In a similar fashion, Dostoevsky's Underground Man, Wells's Prendick, and Pynchon's Oedipa Maas are fictional characters who seek to understand and draw conclusions about the worlds in which they find themselves. Through careful analysis of one or more of the literary texts we have read in the last third of the term, develop an argument for how the problem of induction is taken up by the literary work(s) you choose. In what ways do literary texts reflect upon the challenges to or limits of inductive or inferential knowledge?

2. Discuss the relation between the first section of Notes from Underground, with its semi-philosophic arguments and rantings, with the second, largely narrative section in any way productive to understanding the story as a whole.

3. Quételet was a social reformer. He thought his work essential to social reform and often wrote as if society were to blame for its evils ("society prepares the crime") and the individual agents who committed them were more society's victims than its agents. In this way he raised in a new form the age-old question about human freedom. If chance submits to intense statistical regularities in human affairs, how can the individual be free? It is characteristic of Quételet that he thought limitations on freedom of the will as good thing. "It is necessary, then, to admit that free-will exercises itself within indefinite limits, if one wishes not to incur the reproach of denying it altogether. But with all the follies which have passed through the head of man, with all the perverse inclinations which have desolated society, what would have become of our own race during so many past ages [without severe limitations on the freedom of human will]? All those scourges have passed by . . . because the same finger which has fixed limits to the sea, has set similar bounds to the passions of men—because the same voice has said to them both, 'Hitherto shalt thou come, and no farther.' (p. vii). How does Quételet's notion of freedom (or the limitations placed upon it) compare with the notion of any other writer read this term? Dostoyevsky was familiar with Quételet and actually had a copy of Buckle, Quételet's most famous disciple, at his elbow when he wrote *Notes from Underground*. How would Dostoevsky's Underground Man respond to Quételet's assertions?

4. Discuss the relation between the first section of *Notes from Underground*, with its semi-philosophic arguments and ranting, and the second, largely narrative section in any way productive to understanding the story as a whole.

5. "I am alone and they are *everyone*," writes the underground man in his despair. (p. 19) At one point in his initial diatribe (against the reader of his text, of all things!), the nameless underground man describes this "everyone" as the normal man, referring to people "who know how to revenge themselves and to stand up for themselves in general" (p. 4) because they believe in unalterable laws of nature, which have made them just as they are and the world just as it is: normal people, satisfied with themselves and therefore with the world that made them. In contrast, the underground man denies the unalterable laws of nature in the name of human freedom. At the same time, however, he insists that consciousness of freedom is an abnormality, a disease (p. 3), issuing in an inability to act.

“I was jealous, beside myself... and it was all from boredom, gentlemen, all from boredom; inertia overcame me. You know the direct, legitimate fruit of consciousness is inertia, that is, conscious sitting-with-the-hands-folded. I have referred to this already. I repeat, I repeat with emphasis: all ‘direct’ persons and men of action are active just because they are stupid and limited” (p. 7). How does Dostoevsky use the underground man to examine the relationship between doubt or uncertainty and the so-called laws of nature? What would the underground man make of Hamlet, who tussles throughout with the question of how to act, in contrast to Fortinbras, who quarrels over a straw when honor’s at stake? How does the Underground Man’s use of boredom to explain his inaction compare with Voltaire’s *Candide*, which recommends work as the cure for the vice of boredom?

6. Darwinian themes are scattered throughout Wells’s *The Island of Dr. Moreau*, a work in which the idea of chance figures importantly. There are remarks about chance scattered everywhere—from the first casting of lots, through Montgomery’s remarks about why he rescued Prendick, to Moreau’s motives for his experiments in creature-formation. Write an essay on the theme of chance in the book and draw some conclusions about its ethical import. Moreau has often been identified as a kind of allegorical figure, representing nature in its aspect as Natural Selection, but, of course, Moreau thinks and makes decisions, whereas Natural Selection does not. How adequate, then, is the identification? Drawing upon chapter 14 (in which Moreau explains to Prendick the nature of his experiments), explain how well or badly Moreau’s views jibe with Darwin’s.

7. Darwin’s theory of the origin of species has been and continues to be attacked as radically implausible. It is argued that randomness or chance cannot account for the functional complexity of animate beings, which requires the intervention of an intelligent designer for its existence. (Oddly, plants are sometimes let in under the wire, as if their functional complexity was of a low order.) The classic allusion in this connection is to the likelihood that a monkey at a typewriter, given enough time (and paper), would eventually turn out *Hamlet*, much less the complete works of Shakespeare. In contrast, Ludwig Boltzmann finds grounds for Darwinian probability in the calculation of the average kinetic energy resulting from the collision of millions upon millions of gas molecules in a chamber of known size, given that the total energy of the gas is known. Comment, using one or more texts from the last third of the term to make your case.

8. The narrator of Borges’s “The Lottery in Babylon” describes the institution of the Lottery as introducing into the whole of social life “a general theory of chance.” This phrase is something of a paradox, as “pure” chance, in the way that it is understood by the narrator, could not be regularized and made subject to a “general theory,” much less orchestrated by a secret and omnipotent “Company,” the (disputed) existence of which suggests that chance may be in Babylon but another name for order. A maxim acceptable to both Leibniz and Hume—though with different implications for each—might run as follows: “There is nothing in nature that corresponds to the word ‘chance.’ Chance is a word that designates only our ignorance, our inability to explain.” Were we able to resurrect either today and give him Borges’s story to read, what would he think of it?

Alternatively, discuss how any one or two of Borges's stories juxtapose the presence or appearance of chance in the world with either evidence or illusions of order.

9. Charles Peirce's essay, "The Doctrine of Necessity Examined," is, among other things, an argument against the maxim cited in the last paragraph: "There is nothing in nature that corresponds to the word 'chance.' Chance is a word that designates only our ignorance, our inability to explain." Darwin characterized increased diversification as a property of the biological world, due to the action of chance; Peirce's extends this view to the physical world as well. His argument depends upon characterizing all non-deductive knowledge (i.e., knowledge that is not purely mathematical) as the result of sampling and calculating probabilities. The argument is straightforward, but nonetheless abstruse, and therefore hard to follow. Elucidate its course through a reading of one or more of the texts we have studied in the last half of this term, paying due attention to (a) Peirce's view (p. 302) that probabilistic reasoning, or "induction," does not rely on postulates, as belief in mechanical necessity surely does; (b) that molecular physics shows how chance is compatible with regularity (p. 305); and (3) that it is unwarranted to adduce the existence of "latent" things (i.e., things that are permanently out of the reach of experience, like Bernoulli's actual ratio, which calculation can only approximate) in order to support belief in mechanical necessity, or anything else, for that matter.

10. Borges's *Garden of Forking Paths* seems in part to be about the notion (as Yu Tsung puts it) that it is a comfort to those about to commit atrocious acts that the future is as irrevocable as the past. And yet, in the conception of the *Garden of Forking Paths* (not Borges's story this time but the book written by Yu Tsung's ancestor Ts'ui Pên), time constantly offers alternative pathways and thereby creates innumerable futures. How does this apparent contradiction illuminate an understanding of the story?

11. Both Borges's *The Garden of Forking Paths* and Pynchon's *The Crying of Lot 49* concern establishing a medium of communication and deciphering the messages encoded within it. The problem confronting Yu Tsun is to convey a message "through the uproar of war," that is, to protect a message from noise while making it look like nothing more than noise to a third party. In this connection, Pynchon's protagonist, Oedipa, like her namesake a solver of riddles, begins to see hidden messages everywhere and comes to believe in the existence of a communication-system ("Silent Tristero's Empire"), which is now awaiting a final revelation. Comment on either text or compare the two with respect to this feature.

12. In contrast to the uproar of war—the disorder of noise overwhelming the order of a message—Borges's *Library of Babel* is an extremity of order, in one sense of the term, for each volume is unique, none of the immense number duplicating any other. By the same token, however, it is an extremity of randomness, for by definition there is no order whatever to any arrangement of the volumes dictated by their contents and therefore no way of knowing where among its innumerable hexagons any particular volume can be found. The handiest image in our reading to illustrate such randomness is that of a filled

bathtub subject to Boltzmann's idea of entropy, which gradually assumes a uniformity in regard to temperature. How well does Borges's "Library" compare with the bathtub, considered as a closed system? How consistent is the narrative—the voice of the nameless librarian—in his account of the library? How would any author read this term (Leibniz? Pynchon? Pascal? Maxwell?) respond to Borges's fantasy?

13. Images abound over the course of our readings of sequences of things that may reveal at length a pattern in apparent disorder, and these patterns are sometimes associated with messages, buried by chance or concealed by design. In this connection, explore the various ways in which Pynchon's *The Crying of Lot 49* employs such images (e.g., Oedipa's fascination with printed circuits that she does not understand, Mucho's insistence on reading truth out of the rubbish left behind in used cars, Metzger's movie, whose actual sequence, given the nature of films, cannot be reliably distinguished from a sequence in which the reels have been mixed). Oedipa is the solver of riddles. How clear is it that there is a riddle to be solved? What is the overall point, in your view, of the ambiguities in which the text shrouds the answer to this question? (cascade of examples) with the idea of Maxwell's Demon, who undoes disorder, and with the attempt by Nefasto to defeat the second law of thermodynamics. Is the world of *Crying* suffering from entropic disorder?

14. Compare Oedipus and Oedipa Mass in any way that seems likely to illuminate either or both the texts in which they appear.

15. At the end of *Hamlet*, Horatio promises not to kill himself until he has explained to everyone left alive what has been happening. As he begins, Rosencrantz and Guildenstern vanish from Stoppard's play, with a hint that they are condemned to repeat, word for puzzled word, the entirety of the performance that we have just witnessed (even as the actors playing them in real life will do at the next performance). R&G do not hear Horatio's explanation, but we, who have read *Hamlet*, know that it ends before Horatio begins his explanation. We might say that Stoppard's play shows two minor characters unable to affect the action of a play whose every turn is produced by the major character's failure to act for reasons which are not clear either to that character or to the audience. Develop an essay that examines what Stoppard's play has to say about Shakespeare's. What view does it imply about two of our themes, the predetermined nature of action and free-will? Why does the play open with the coincidence of eighty-five heads tossed in a row? Is any natural law interrupted by this outcome? Guildenstern is frightened by the coin-toss; has he any reason? How well do the confusions of Stoppard's R&G fit into the drama of the original play? How well does their dialogue, when the time comes for them to stop speaking Stoppard and start speaking Shakespeare?

16. The French philosopher and mathematician Pierre Laplace ended a book meant to introduce probability to the general reader with the following statement: "It is seen in this essay that the theory of probabilities is at bottom only common sense reduced to calculation; it makes us appreciate with exactitude what minds feel by a sort of instinct

while often being unable to give a reason for it.” Laplace published these words in 1814 and this date may be regarded as a watershed, for, in a way, all our readings written before that date may arguably be said to agree with this sentiment and most of those written after it may be said to disagree, for by and large they take probability as something that confounds common sense and runs counter to common intuition. Comment, using one or more texts studied this term to make your case.