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Discussion Questions for *Uncle Petros and Goldbach's Conjecture* (1992)

1. **Understanding the limitations of epistemological endeavor is at the heart of Dioxiadis' cautionary tale, i.e. "The Secret of Life is always to set yourself attainable goals" (21). How does Petros's Pride: "[H]e wilfully chose to throw [a great success of his life] away by setting himself an unattainable goal and going after a notoriously difficult problem" (158), in the end illuminate this concept of understanding and honoring one's own limitations as *telos*? How does this relate to Gödel's Incompleteness Theorem?**
 - a. Does one's productivity or activity in the mathematical world determine one's worth? Does productivity, essentially, become knowledge? Is it always necessary to have intermediate results or else be deemed "fraud" or "failure"?
2. **I like Dioxiadis's image of mathematicians as being stuck between a rock and a hard place, i.e. "the Scylla of mediocrity on the one side and the Charybdis of insanity on the other" (166), do these polarities of mathematical output or fame seem true in the end? If "*Mathematicus nascitur, non fit*" (31, 181) is true, is there a conceivable link between Genius and mental illness?**

Consider the following:

- a. Sammy's theory of hubris: "I think Gödel's insanity—for unquestionably he is in a certain sense insane—is the price he paid for coming too close to the Truth in its absolute form. In some poem it says that 'people cannot bear very much reality', or something like that. Think of the biblical Tree of Knowledge of the Prometheus of your mythology. People like him have surpassed the common measure; they've come to know more than is necessary to man, and for this hubris they have to pay" (163).
- b. "The proverbial 'mad mathematician' was more fact than fancy. I came increasingly to view the great practitioners of the Queen of Sciences as moths drawn towards an inhuman kind of light, brilliant but scorching and harsh. Some couldn't stand it for long, like Pascal and Newton, who abandoned mathematics for theology. Others had chosen haphazard, improvised ways out—Evariste Galois' mindless daring . . . Cantor . . . Ramanujan, Hardy, Turing, Gödel and so many more were too enamoured of the brilliant light; they got too close, scorched their wings, fell and died" (165-6).
- c. What of the delicate balance between Epicurean *ἀταραξία* ('ataraxia') or utter tranquility and mania?
 - i. "To protect his peace"; "His misadventure, by exposing an element of vanity in his manic search, had created in him an inner core of peace, a sense of life continuing irrespective of Goldbach's Conjecture" (120).
 - ii. "My ridiculous simple-minded scheme to force him into self-confrontation had destroyed his fragile defences. Heedlessly, irresponsibly, I had robbed him of the carefully nurtured justification of his failure: the Incompleteness Theorem . . . Stripped of his

cherished excuse he had taken, of necessity, the only way left for him to go: madness” (199).

3. **Only in the mind of ‘the madman’ can numbers or other inanimate beings/conceptions become one’s friends; in fact, mania seems to afford the genius a certain intimacy or familiarity with his preoccupations on a level which Arthur Koestler has described as bisociation¹, i.e. the constant toggling of the script of reality with that of the imaginary or of the said preoccupation (or perhaps vice versa) for the purpose of creation dubbed intuition, how does Dioxiadis investigate this phenomenon in his narrative? What is the function of the unconscious in research for Uncle Petros and his vivid dreams (95-8)? What do you make of Petros’s fear of 2¹⁰⁰ as anthropomorphic nightmare and harbinger of death (130-3, 143, 206)? What role did chess play for Petros?**
- a. Cf. “Mentally to digest the work accomplished and process its results at an unconscious level, the mind needs leisure as well as exertion . . . it can become intolerable when the brain is overcome by weariness, exhausted by incessant effort” (103).
4. **What kind of world does Dioxiadis characterize highbrow mathematics to be? Is it a place of constant strife and competition, i.e. an *agôn* space? Is it a space that cultivates serious, intellectual play? Or just mere insanity? Is it highly predisposed to the fancies of the insane? Is there any room for collaboration? Or is *exchange* between mathematicians a ‘dirty word’?**

Consider the following:

- a. “. . . there isn’t a single one among them who isn’t mainly driven by ambition and a strong competitive urge. (Of course, in the case of a great mathematical achievement the field of contestants is necessarily limited—in fact, the greater the achievement the more limited the field. The rivals for the trophy being the select few, the cream of the crop, competition becomes a veritable *gigantomachia*, a battle of giants.) A mathematician’s declared intention, when embarking on an important research endeavour, may indeed be the discovery of Truth, yet the stuff of his daydreams is Glory” (77-8).
- i. Youthfulness and Mathematics: “Youth is a necessary requirement for greatness” (78);
1. “[T]ime counts differently for mathematicians. He was now at the absolute peak of his powers, in a creative prime that couldn’t last long. This was the time to make his great discovery—if he had it in him to make it at all” (91-2).
- b. Reaction to Srinivasa Ramanujan’s death: (87).
- c. Hoarding of knowledge (90);
- i. “The only community to which the creative mathematician can truly belong is that of his peers; but from that Petros had wilfully cut himself off” (92).
- d. Littlewood to Petros “Start sharing; *exchange*, old chap!” (122).
- e. Petros’s gay bashing of Hardy; (the ugly of brilliance): (188-91).

¹ “[T]he perceiving of a situation or idea . . . in two self-consistent but habitually incompatible frames of reference” from Arthur Koestler, *The Act of Creation* (London: Hutchinson & Co., 1964), 35.

