

MONT 103N – Analyzing Environmental Data
Study/Discussion Questions on *The Botany of Desire*
March 1, 2012

Note: These questions are adapted from a study guide for *The Botany of Desire* for teachers developed by the publisher, Random House.

Introduction

1. Pollan says at the start of the Introduction that the idea for this book came to him while he was working in his garden. How is the role of the human in a garden like that of the bumblebee? Is it different, and if so, how? What does each role look like from the point of view of the plant? Can a plant have a point of view?
2. Do human beings stand apart from nature, or are we a part of it?
3. What is the meaning of *artificial selection* (or selective breeding)? How does that relate to what Pollan calls *co-evolution*? In what sense is every subject also an object, every object also a subject in a co-evolutionary relationship?

Chapter 1 – Desire: Sweetness/Plant: The Apple

1. What does it mean that apples don't "come true" from seeds? (9) What is grafting, and when was it first practiced? (12) Explain why if not for grafting, every apple in the world would be its own distinct variety. (10) How many new apple varieties could come from each tree (11)? What is the evolutionary advantage of this kind of reproductive strategy? Pollan says the apple had to forsake its former domestic life and return to the wild before it could be reborn ... as distinct from the old European stock as the Americans themselves (13). Explain. What would have happened if Americans only planted grafted trees? (42) What plants do come true from seed? Do animals? Do people?
2. How has the word "sweet" been used over history? Do you think of sweetness as a noble quality? What does Pollan suggest brought about this shift? (17-18)
3. Do think that a desire for sweetness in food is "hard-wired" into humans? What about the story Pollan tells about his son's first experience of sugar? (18) What role does sweetness play in co-evolution? (19) How does this support the book's thesis? On the other hand, why do apple seeds also contain cyanide (a poison)? (10)
4. How did early Americans consume apples? When and why did that change? How were notions of the apple's healthfulness popularized? (9, 22)
5. Explain Pollan's assertion that both Chapman and the apple "have been sweetened beyond recognition. Figures of tart wildness, both have been thoroughly domesticated ... in both cases a cheap, fake sweetness has been substituted for the real thing." (7) Who/what else have we done this to? Why?
6. How have the "descendants of Appleseed's apple seeds been all but killed off by the dominance of a few commercially important apples?" (50) Define winnowing. How does Pollan use that word? Explain Pollan's comment that apple breeders are "locked in a kind of sweetness arms race with junk food." (51) How many apple varieties were

commercially available a century ago? (51) How many varieties have you tasted in your lifetime?

7. Explain Forsline's statement that "the practice of growing a dwindling handful of cloned varieties in vast orchards has rendered [the apple] less fit as a plant." (52) How does coevolution cease in grafted trees? What do apple growers do about this? What solution does Forsline propose? (52-53)

Chapter 2 – Desire: Beauty/Plant: The Tulip

1. What was the tulipomania in 17th century Holland? How was tulipomania like a carnival? (101) What is "the greater fool theory" (103)? Where do you see it today? How did/does desire for conspicuous display influence what people grew in their gardens? What does extravagant uselessness communicate? Do you think the Dutch used financial abandon to atone for shame of their wealth? (103) Do people do this today? Can you think of any situations in recent history that parallel the tulipomania story?0
2. What did the young Pollan think of flowers? What qualities did he value in plants? What do psychiatrists think of patients who are indifferent toward flowers? How long have people valued flowers as beautiful? Why did Jews and early Christians discourage devotion to flowers? (66) Where were tulips first grown and prized? Where are flowers not loved? What might explain this? (67)
3. Give some examples of the visual, olfactory, and tactile devices that flowers employ to get the attention of animals. (69)
4. What does Pollan mean when he says the pea's desire, not the bee's, is gratified when a bee takes pollen from a pea blossom? (72) Explain how flowers choose their mates on the basis of health, using bees as their proxies. (75) Explain Turner's statement: "The colors and shapes of the flowers are a precise record of what bees find attractive." (76)
5. What is "beauty by design?" (75) What are the two main principles of beauty Pollan describes? (75-77) Why is symmetry significant? What flowers does Pollan identify as our canonical flowers? (78) How has their "multifariousness" set them apart? Explain the statement, "For a flower the path to world domination passes through humanity's ever-shifting ideals of beauty." (79) What does Pollan mean when he says "mutations that nature would have rejected out of hand in the wild sometimes prove to be brilliant adaptations in an environment shaped by human desire?" (81) What other examples of this can you think of? In what ways does culture select traits within people?
6. What is a "broken" tulip? (88) How did the Dutch attempt to encourage breaks? What was the real cause? (89) How were broken tulips treated in the 1920s? (89) How does the virus "throw a wrench" in the book's thesis? How does Pollan use the virus's vantage point to defend his thesis? (90)
7. Explain Pollan's statements "the tulip is that rare figure of Apollonian beauty in a horticultural pantheon mainly presided over by Dionysus," (97) and "color breaks ... can perhaps best be understood as an explosive outbreak of the Dionysian in the too-strict Apollonian world of the tulip—and the Dutch bourgeoisie." (101) Who (or what)

are Apollo and Dionysus? What do they represent? How did the figure of Dionysus appear in Chapter 1 as well?

Chapter 4 – Desire: Control/Plant: The Potato

1. Where were potatoes first grown? How were the original potatoes similar to the original apples? What role did the potato play in European history? (201) In what sense did the potato give people more control over their sources of food?
2. How are potatoes grown today? What is a *monoculture*? Why does Pollan monoculture is industrial agricultures greatest strength and its greatest weakness? (225) Why does he say monoculture is in crisis? (226) Are our current “mainstream” farming practices sustainable?
3. Pollan says “As long as humans need to eat, we can never completely insulate ourselves from the vicissitudes of nature.” (205) Is that insulation or independence what biotechnology attempts? If so does it succeed?
4. What is genetic modification? Pollan observes that “companies that have developed [GMOs] give contradictory answers. The industry simultaneously[says] the new plants are novel enough to be patented, yet not so novel as to warrant a label telling us what were eating” (189) Can both be true? Pollan writes, “Monsanto likes to depict genetic engineering as just one more chapter in the ancient history of human modifications in nature, a story going back to fermentation.” (195) What do you think of Monsanto’s comparison?
5. Pollan says the NewLeaf potato is different from the other plants in his book: “This potato is not the hero of its own story in quite the same way ... It didn’t come up with this Bt scheme all on its evolutionary own.” He contrasts this to the plants in earlier chapters, saying those species “never lost their evolutionary say in the matter—never became solely the object of our desires.” (197) Is this a valid distinction? Even if it is valid, does have a practical significance?
6. Re-read Hjelles explanation for why we shouldn’t worry about Bt resistance. (215) What do you think of his answer? How would you characterize his view of control over nature? How does it differ from Pollan’s? What other technologies were/are criticized with these same arguments? Were critics right?
7. Hjelles, speaking on behalf of Monsanto, says, “Trust us.” (216) Does Pollan trust Monsanto? Do you? How should the public determine what companies it trusts? What role, if any, should government play? Is Pollan reporting unbiasedly on genetic engineering? Should he be? Find passages to support your argument.
8. Which of the two potatoes (221) would you rather eat? Do you ever eat genetically modified foods? How do you know?