

Adam Frank

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**Some Mad Scientists
Stein, Tomkins, Bion, Democritus, and others**

What does the madness of mad science consist of? I am a little surprised to be approaching this question through a classical text about Democritus. I thought I was going to be writing about Gertrude Stein for today's presentation, so it seems like a stretch to be taking up Letters 10-17 of an epistolary novel, sometimes called the Hippocratic novel, probably written by a physician from the island of Cos around 40 BCE and translated from the Greek (into Latin) in the fifteenth century. I initially encountered a reference to this text in Mikhail Bakhtin's *Rabelais and His World* (1968) in a discussion of Renaissance dissection: Bakhtin identifies it as "the first European novel in the form of letters and the first to have an ideologist (Democritus) as its hero. It is also the first work to develop the 'maniac theme' (the madness of the laughing Democritus)" (360). My interest in this ancient text has been to find in it a set of dynamics that I had initially thought of in relation to Gertrude Stein's writing, and that I have begun to explore by way of affect theory, specifically the work of Silvan Tomkins and the object-relations theory of Melanie Klein and Wilfred Bion. Broadly speaking, what these various writings all share is a practical concern for, and an interest in, the emotional or affective dynamics of coming to knowledge, as well as a surprising tendency to make this reader laugh with uncomfortable recognition. What I hope to do today is to sketch, from this less familiar classical text, the psychic dynamics of mad

science.

First, to be clear: my use of the phrase *mad science* is not meant to be pejorative. In one sense I am simply using it negatively to name the complement of the kind of empiricist science that, as Steven Meyer has described it, “requires that one divorce the pursuit of knowledge from one’s emotional investment in the procedures one has come to follow” (11). In this sense I intend mad science to be a capacious rubric that would include Stein’s poetic science, Tomkins’s affect theory, and Wilfred Bion’s writing on learning, thinking, and groups, none of which permit the kinds of dissociations of cognitive from affective experience that may be ascribed to ordinary empiricism. No doubt this negative definition is unsatisfying because too broad, and we can turn towards a more positive definition by thinking of Mary Shelley’s *Frankenstein*, or rather, the strange phenomenon of the reception of this most successful modern representation of mad science. For some reason, the title of this book, which is the name of the scientist, has come to name the monster itself. I suggest, as a way to begin, that the madness of mad science pertains to this de-differentiation of scientist (or knowing subject) and his (or her) object of study, or otherwise put, a collapse of map and territory.

Democritus is a complex and multiple figure. An essay by Christoph Luthy carefully separates out four different images of Democritus of Abdera, distinguishing the philosopher who lived in fifth c. BCE, most famous for his theory of atoms, void, and necessity, from the laughing philosopher favored by renaissance humanists, who was often paired with the weeping Heraclitus. According to Luthy, this second Democritus becomes “a father figure of the modern ‘critic’” (458), able to level everything with irony and ridicule, and later a defender of Enlightenment and revolutionary ideals: eighteenth-

and nineteenth-century joke book collections were often pseudonymously signed by Democritus. Luthy also describes Democritus the moralizing anatomist, who begins his renaissance life by sharing both laughter and disdain with the second Democritus, but over the course of the seventeenth-century gradually comes to be represented more as a solitary, melancholy, and contemplative hermit; most famously, Robert Burton's Anatomy of Melancholy (1621) is signed Democritus Jr. Finally, there is the alchemist Democritus, supposed to have authored a cookbook of heterogeneous recipes from different periods of Egyptian alchemy. Luthy argues against historical claims for any simple or uniform revival of Democritus' matter theory as set against Aristotelean teleology, mapping instead the highly diverse types of early modern matter theories and incompatible atomisms by way of the incoherence of what he calls "the indefinitely combinable fourfold Democritus" (479).

My focus here is on the source-text for the third of these, the moralizing anatomist, as it offers a proto-scene for mad science. (Citations in this paper are to Lewin's translation.) The Hippocratic novel consists of twenty-four pseudoepigraphic letters as if written or received by the Greek physician Hippocrates, more than half of which take as subject his visit to Abdera to cure that city's most famous resident, Democritus, believed to be mad. The Abderites' initial letter of invitation to Hippocrates characterizes this madness in terms of his wakefulness, forgetfulness, and especially laughter: Democritus laughs at anything, from public events (marriages, speeches, elections) to illnesses and deaths. Hippocrates agrees to come, but he is clearly skeptical about the diagnosis. The Abderites, he notes, appear anxious and despairing, and he also notes something strange about their concern with Democritus. "You will cure a city not a

man,” is their enticement to Hippocrates to come (43): the Abderites believe themselves to be in danger of illness, madness, or derangement, a self-description which amazes Hippocrates – “I was amazed that you, the city, are disturbed about one man as if you were one man” (45) – and impresses him as well: “The people have a remarkable sympathy for him, Dionysius. They are ill with their fellow-citizen, as if they all were one person, so that they too seem to me to need to be cured” (49).

In both translations I have been using it is grammatically unclear whether the Abderites’ sympathy with Democritus leads to their illness, as if they catch it from him, or comprises their illness, as if it’s their sympathetic behavior that Hippocrates feels he needs to cure. In fact, the Abderites have a pretty bad reputation: according to the translators the term “Abderite” is itself an insult (equivalent to “blockhead,” as one of them puts it), a stupidity that includes being overemotional, disturbed, or lacking self-sufficiency. That Democritus is an Abderite poses a basic problem, at least for Hippocrates who finds himself, in preparing for his visit, trying desperately to decide in advance whether Democritus is more an Abderite or less one, that is, whether his laughter signifies madness or whether the Abderites’ attribution of madness to him does. It never seems to occur to Hippocrates that Democritus, along with the townspeople, may all be mad, and certainly not that he, Hippocrates, might be. This offers us one basic contrast between the physician who maintains proper distance from his object of study, and Democritus, the mad scientist who, in some sense that still needs to be specified, is identified with his object of study, for better and for worse.

When Hippocrates arrives in Abdera the townspeople bring him to Democritus “sitting alone on a stone seat under a wide-spreading low plane tree” (58), pale, thin,

bearded, and barefoot; he sits next to a murmuring stream, not far from a hilltop shrine dedicated to Nymphs, with a book on his knees, and surrounded by “heaped piles of completely dissected animals” (59). And he is writing, one reason why this entirely pastoral scene, variously reproduced in many renaissance texts and paintings, is the main image associated with what Luthy calls the moralizing anatomist. Hippocrates approaches Democritus, respectfully waits until he finishes a writing jag, then begins a conversation. He discovers that Democritus is writing a treatise on insanity, seeking to locate its cause, the center of bile, in the animals around him: “For you know that most cases of insanity in humans are caused by its overabundance, since it exists naturally in all, in a lesser amount in some and in a greater amount in others. Disproportion of it develops diseases, since it is a substance sometimes good, sometimes bad” (61). Of course, Hippocrates becomes convinced, not only of Democritus' sanity but of his wisdom.

Where other medical texts in the Hippocratic Corpus treat black bile as unequivocally a source of disease, melancholy in particular, the anonymous writer has Democritus argue for a different understanding. He appears to be taking up Aristotle's writing in Problem 30 on “outstanding men” which tries to explain why so many talented men are melancholic. Here Aristotle offers an analysis of how bile, in various amounts, at different temperatures, and at different locations in the body can account for very different moods. The writer of the letters extends this idea to propose that bile, when heated, makes for cheerfulness, inspiration, and also madness; and when cooled, makes for fear and despondency. This single-substance somatic analysis is interesting partly because it sets Democritus against Plato. In La maladie de l'ame (1981) Jackie Pigeaud

makes clear how Plato's Phaedrus is self-consciously in the background of these letters, especially insofar as the text produces an analysis of madness that refuses dualism: where Plato distinguishes between a divine madness (poetic inspiration) and a corporeal one (melancholy), this text sees Democritus argue for bile as the cause of both. To a degree, then, the anonymous writer is making use of the materialism of the historical Democritus, one of the earliest atomist philosophers, whose thinking stands in sharp contrast to Plato's idealizing philosophy. As Charles Kuhn points out, Democritus should be considered one of Plato's chief interlocutors, which may help to explain why he never appears in any of Plato's dialogues: as the only fifth century philosopher who was a rival for Socrates, Plato has a vested interest in muting his reputation. The historical Democritus had no Plato, that is, no student who systematized his philosophy, perhaps because Democritus himself wrote over forty books, only fragments of which remain. Democritus appears, at least conjecturally, an important alternative to Plato's Socrates at this early moment in the history of western philosophy.

If I read the pastoral scene of the letters as a scene of mad science, it is because Democritus may be considered to be identifying with his object of study in a quite specific way: he is projecting his madness onto (or into) bile, and attempting to locate it in the animals around him. In a sense, he is mapping the mind's madness onto (or into) a material territory to be exposed or dissected, to be made available to analysis and writing. More specifically, he is literalizing an immaterial quality of his mind, madness, in order to split it off from himself and locate it outside him. This would seem to be the dynamics of what object-relations theory terms projective identification, a complex and difficult concept that Melanie Klein first described in discussions of the paranoid-schizoid

position. Projective identification “entails a belief in certain aspects of the self being located elsewhere” (Hinshelwood, 177), and is a basic, infantile defence against unwanted feelings or experiences. There is a degree of violence to this defence that distinguishes it from Freud’s notion of projection: more than simply saying “Why are you mad at me?” when I’m mad at you, in projective identification I may actually succeed in making you angry with me.

The idea that bile is sometimes good and sometimes bad may very well be what is most original to these letters, which otherwise (according to the commentators I have read) bring together tenets of mostly Cynic philosophy into a diatribe, a literary genre of indignation in imitation of Diogenes and other cynics. Like earlier diatribes Democritus pushes the values of self-sufficiency and the flouting of conventional manners and morality. For example, he laughs at Hippocrates for making excuses about deferring his studies, saying that he is busy with family, friends, or business. “What are you laughing at, Democritus, the good things or the bad ones that I mentioned”: this question returns over and over again as the root problem posed by Democritus’ laughter and madness as it seems to make no distinction between good and bad experience, marriage or illness, life and death. “Are you not fighting with the gods, if in the world pain and joy are two different things and you have discarded one of them?” Hippocrates asks. Democritus insists that his laughter registers a realistic assessment: “You think there are two reasons for my laughter, good things and bad things; but I am laughing at one person, full of folly, devoid of righteous actions, childish in all his intentions” (63-4).

Democritus laughs at Hippocrates, but also at himself. He appears to be describing the insight that Klein called the depressive position, which Robert

Hinshelwood defines as the infant's ability to bring together fragmented perceptions, which are entirely good and entirely bad, into a unified whole object: "When such part-objects are brought together as a whole they threaten to form a contaminated, damaged or dead whole object" (138). Klein considers this a developmental achievement, both perceptual and emotional, because the infant can now begin to perceive and enter into relations with whole objects conceivable as separate. But this achievement is extremely painful and the perception of a whole object is susceptible to being split again by paranoid defenses. Wilfred Bion takes this up in his theory of thinking to suggest that any creative process will involve fluctuations between the paranoid-schizoid and depressive positions, a to-and-fro between a going to pieces of one set of ideas and a reforming or synthesis of a new set around a "selected fact." The selected fact in this diatribe, what permits Democritus his painful, bitter, bileous laughter of recognition, sorrow, and triumph, is what he calls avarice or greed.

His moralizing diatribe rails very clearly and persuasively enough against acquisitiveness, excessive desires for money and property, the destruction of the earth in mining for gold and silver, the waging of war, and so on. It reads now as a version of a basically ecological message, and as Luthy points out, permitted renaissance humanists to christianize the laughing philosopher. Rhetorically, Democritus' lists anatomize the various evils, lusts and passions, offering very little positive advice besides self-sufficiency, the observation of nature, and an instructive attention to the irregularity of change. He includes himself in his diatribe: "Don't you see that I too share in this evil? Seeking the cause of madness, I kill animals and cut them open, when I should have sought the cause in human beings" (70). In the midst of his anatomizing lists, Democritus

again identifies with his object of study, in this case in the mode of introjection: the greed that is the cause of madness, which he at first located as the center of bile in animals, and then in his fellow citizens, he now locates in himself. If there is any doubt as to whether Democritus has, himself, become a source of bile, listen to this: “From birth on, man is nothing but a disease; as a small child he is useless, pleading for help; grown older he is reckless, stupid, under control of his teachers; at his prime he is rash, past his prime pitiful” (70-1). And then he really gets going and elaborates a startling fantasy that competes with the initial pastoral scene for the most memorable image of this sequence of letters: “If only it were possible to uncover all homes, not letting one curtain remain, so as to see what is done inside them! We should see different ones eating, vomiting, torturing others horribly, mixing poisons, devising plots, keeping accounts, others rejoicing, mourning, some drawing up accusations against their friends, some out of their minds from love of glory; and there would be other actions hidden deeper in their hearts” (71).

Am I tone deaf if I hear the laughter of the mad scientist in this thought-experiment? Democritus’ mad laughter constitutes a terrible, triumphant recognition of the intractability of human greed and destructiveness. Perhaps more accurately, this laughter can be described as angry, and Democritus’ mad science is actually a furious, grieving science. This anger, so significant for ancient Greek masculinity, persuades Hippocrates who decides to become a herald for Democritus’ ideas. That is, Hippocrates becomes an Abderite: as a joke about Abdera has it, it’s a place where every citizen has a herald, so there are more heralds than citizens there. One translator reads this as “the author [] thumbing his nose somewhat at the audience’s engagement in the more serious

questions he has suggested” (Smith, 22), but then it also serves to get the reader to laugh – at Hippocrates, at him- or herself – and to participate in Democritus’ angry or mad laughter of recognition.

But why specifically laughter? Because, as Silvan Tomkins understands it, laughter is “the more intense form of the smile” of enjoyment (370), and enjoyment is the mark or index of recognition. According to Tomkins, because of its particular neural trigger, the affect of enjoyment-joy provides containment for the infant’s distractibility and serves as a main support for the recognition of whole objects in infant perception. While the smile or laugh can take on different emotional qualities (such as relief, triumph, pleasure), all of these are at core the same affect. Democritus’ bitter, triumphant, and cheerful laughter supports and confirms a painful, joyous recognition. Democritus recognizes, not only the intractable destructiveness of human nature, but more to the point of my inquiry, the necessary relations between this destructiveness and ways of coming to knowledge. If the figure of Democritus, the laughing philosopher, becomes favoured by early modern humanists (around 1630 we see a sudden boom in paintings of the laughing philosopher), and a figure for criticism, perhaps it is because the Democritean insight into the necessary relation between knowledge and intractable destructiveness, or what Klein calls envy, may be considered the starting point for criticism itself.

I hope, in reading this early scene of mad science, to have begun to link affect with perception and the variety of ways of coming to know anything. I find the idea of a genealogy of mad science appealing, one that would include theories of feeling, not as something extra that you add on to a theory of knowledge, but which will necessarily be intimately part of this theory in the present of its formation or composition. A good part

of what attention to the present of composition involves (and you may be hearing Stein, finally) is an awareness of feeling, and the often intricate difficulties of this awareness. These difficulties, and the dynamics of projection, identification, and introjection, come with both the territory and the map of mad science.

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