

Essay Review

**HOW REAL IS FETAL
ALCOHOL SYNDROME?***

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NO IDEA IN THE HISTORY OF MEDICINE has had more impact in the last half century than the imperative of relating everything—discoveries, therapies, diseases themselves—to social context. Because social context is always changing, nothing in medicine is stable, or clear-cut, or obvious. Why, for example, did American practitioners discover inhalation anesthesia before their better-educated European colleagues? Because, Ernest Hook argues, the Americans were marginal professionals in a scientifically marginal country. They had fewer scruples about attending the “ether frolics” European physicians disdained. Sometimes the lightbulb of inspiration clicks on in embarrassing places (Hook 2001). And why, when inhalation anesthesia became available, didn’t all patients receive it? Because 19th-century physicians believed in “a great chain of feeling”: whites, rich people, women, and children were more sensitive to pain, while the darker-skinned, the lower classes, and adult men were supposed to be more insensitive (Pernick 1985, 157). Who received anesthesia depended, in part, on attitudes about race, class, gender, and age. The propriety of ether use itself

*Elizabeth M. Armstrong. *Conceiving Risk, Bearing Responsibility: Fetal Alcohol Syndrome and the Diagnosis of Moral Disorder*. Baltimore: Johns Hopkins Univ. Press, 2003. Pp. xvi+277. \$42.95; Janet Golden. *Message in a Bottle: The Making of Fetal Alcohol Syndrome*. Cambridge: Harvard Univ. Press, 2005 (forthcoming). \$25.95.

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depended on motive. Ether administered during surgery was unexceptionable. Ether inhaled or drunk to achieve intoxication brought condemnation.

If everything in the history of medicine needs a social context, it does not follow that social context is everything. Critics of the contextualizing trend complain that its practitioners neglect the internal logic of scientific discovery and the importance of biological factors. They resent the recasting of medical history as a "subfield of social or cultural history," to use Judith Walzer Leavitt's phrase (1990, 1472). They have retreated to bastions of internalist conservatism, such as the American Osler Society, leaving the American Association for the History of Medicine (AAHM) in the hands of the contextualists. If the AAHM's annual program is any guide, contextualists now dominate that venerable society.

Given the intellectual attractiveness and explanatory power of social context, the question becomes whether it is possible to have too much of a good thing. New books by Elizabeth Armstrong and Janet Golden, both dealing with the history of fetal alcohol syndrome (FAS), highlight this issue. For Armstrong has pushed the envelope of social construction as far as it will go, all but jettisoning the biological in her reinterpretation of FAS as a stigmatizing wastebasket diagnosis foisted on society's victims by ambitious moral entrepreneurs. Golden, by contrast, holds back, leavening her sociohistorical story with some old-fashioned medical internalism. Though Golden readily concedes that the meaning of FAS is contested, she hesitates to attribute ulterior motives to researchers or to dismiss their work as a moralizing fad.

FAS has four principal diagnostic criteria. These are (1) maternal drinking, of either the sustained or binge variety; (2) a pattern of facial anomalies, including epicanthal folds, a flat midface, and a thin upper lip; (3) growth retardation, such as low weight at birth or low body mass index in a growing child; and (4) neurodevelopmental abnormalities, such as microcephaly or impaired motor skills. A child with classic FAS stigmata is funny-looking, scrawny, brain-damaged, and klutzy. The prognosis is bleak. Current thinking places full-blown FAS at one end of a spectrum of disorders caused by drinking alcohol during pregnancy. These include partial FAS, or maternal alcohol exposure plus some facial anomalies plus learning disorders and/or behavioral problems. Other diagnoses are alcohol-related birth defects, which include various malformations and dysplasias, and alcohol-related neurodevelopmental disorders. This last category, which Armstrong calls "particularly diffuse" (5), includes learning disorders and behavioral problems, such as poor impulse control, that cannot otherwise be explained by social environment or family background. A quick check of FAS activist Web sites confirms Armstrong's complaint. Just about any developmental anomaly can be, and has been, linked to maternal drinking.

Armstrong questions every aspect of FAS, even in its classic manifestation. The syndrome is rare and tricky to diagnose. Unlike Down syndrome, there is no chromosomal or other definitive biological marker. Fewer than 5% of mothers

who drink heavily during pregnancy produce FAS children. These same mothers often lead disorganized and unhealthful lives, suffering from poor nutrition, spousal abuse, chronic stress, and inadequate medical care. Their drug intake is hardly limited to alcohol. "There is no isolated use," said one obstetrician Armstrong interviewed. "Show me a patient who only uses alcohol and doesn't smoke. And that'll be the one patient that I've [n]ever seen" (144). How, then, do we know that alcohol is the chief teratogenic culprit? Or a culprit at all? Sweeping warnings about alcohol and pregnancy ("No safe time. No safe amount. No safe alcohol. Period") rest on shaky etiological ground.

Armstrong bolsters her argument that FAS is a social construct by reviewing the history of Western, principally American, medical attitudes toward alcohol and reproduction. By the late 19th century, physicians believed that drinking could permanently damage germ plasm and that the effects were not necessarily limited to the parents' immediate issue. Subsequent generations might also exhibit symptoms of degeneration, including a heightened tendency to inebriety themselves. Hard-boiled eugenicists thought this wasn't necessarily a bad thing. Drunkenness, said Leonard Darwin, "has a beneficial rather than a harmful racial effect, by causing a wholesale elimination of degenerates and those lacking moral grit" (48). But most mainstream physicians held alcohol abuse to be a serious and preventable threat to the unborn. Their views carried no small weight in the movement for restrictive legislation.

Then, following the end of Prohibition (1920–1933), concern over alcohol and pregnancy disappeared from American medicine. Victorian notions of heredity had fallen out of favor. Hollywood valorized drinking by women as well as men. Doctors still saw the effects of alcohol abuse, but their gaze shifted from alcohol to alcoholism, from the generalized effects of the drug to those who regularly drank to excess. One suspects, too, that physicians' own social drinking with their spouses reinforced the impression that, for most people, alcohol was a harmless indulgence. In the 1960s, obstetricians even prescribed alcohol as a tocolytic, or drug to arrest early labor. Alcohol infusions got pregnant women so blitzed that nurses had to strap them to their beds. Yet no one in this era was diagnosing fetal alcohol syndrome, or launching national campaigns against it.

That all changed in 1973, when Kenneth Jones, David Smith, Ann Streissguth, and Christy Ulleland published an article in *Lancet* on congenital and developmental defects in eight children born to alcoholic mothers (Jones et al. 1973). Other clinicians were soon reporting similar cases. By the end of the decade the diagnosis, for all its ambiguities, was well established in obstetrical and pediatric circles. Alcohol and pregnancy had become a hot research topic.

What made FAS more than a fast track in academic medicine, however, was a remarkable confluence of social developments. The thalidomide disaster, and growing fears of environmental contaminants, had heightened awareness of teratogenic threats. Ultrasound imaging made the fetus newly visible, showing a tiny, thumb-sucking being who was utterly dependent on its mother. Con-

trapeption and legalized abortion gave parents control over the timing and, to some degree, the outcome of the pregnancy. Birth defects became preventable, blameworthy. "I think our culture . . . really routinely feels that if people are damaged, then they are tragic," said one family practitioner. "So that children like my daughter who has Down's syndrome are perceived as refuse by our culture and . . . killing them in utero is the desirable outcome. . . . Our culture is addicted to accomplishment" (187). FAS babies were loser kids from loser moms.

The abortion controversy energized moral conservatives who, Armstrong argues, saw the crusade against FAS as a way of protecting innocent fetuses and re-enmeshing pregnant women in a cult of self-denying motherhood. "Moral entrepreneurs," both within and without the medical establishment, pushed FAS hard. They branded alcohol as the leading cause of preventable, socially costly birth defects, expanded the diagnostic spectrum, and lobbied for laws to punish or incarcerate pregnant women who abused alcohol and other drugs. In Armstrong's eyes, all of this was so much victim-blaming, and bad policy in the bargain. All we have done is to scare pregnant women who are in no danger from moderate amounts of alcohol. Far better to do something—though exactly what, the author does not say—to ameliorate the conditions that blight the lives of the small number of hard-drinking women who give birth to apparently deformed children.

There is much to admire in Armstrong's account: her clever deconstruction of the advocates' invented history of FAS, her sure-handed discussion of the politics of reproduction, and her often-fascinating interview material. Armstrong has an eye for the telling detail, like the women who ate rum raisin ice cream, discovered they were pregnant, panicked, and then called teratogen hotlines. But her most original contribution, and the empirical basis of her policy argument, is her re-analysis of data from the 1988 National Maternal and Infant Health Survey. Socially advantaged women, it turns out, were more likely to drink *before* pregnancy. But those who were white, educated, married, affluent, and who wanted to get pregnant were also more likely to reduce or quit drinking when pregnant. Not so minority women who were uneducated, unmarried, and impoverished. Because they were collectively less likely to modify their drinking behavior during pregnancy, they paradoxically ended up at greater risk, despite the fact that they had lower overall drinking rates initially. Alternatively, the higher rates of birth defects in disadvantaged minority groups may not have much to do with the alcohol at all, as these same women manifest a "nexus of characteristics beyond drinking alone, such as smoking, poverty, malnutrition, or environmental exposure" (184). Better to address the multiple risk factors in these specific groups than broadcast don't-you-dare-drink propaganda to women at large.

Like many first academic books, this one is formal, argument-driven, and repetitious—in a word, dissertatory. Anxious to signal her distance from such naive and unfashionable concepts as "findings," "reality," "knowledge," "fact," "birth

damage,” and, of course, “fetal alcohol syndrome,” Armstrong seeds her prose with so many scare quotes that it resembles a June lawn with a crop of dandelions. There is no mistaking, however, the importance and originality of Armstrong’s thesis, or its provocative nature. Is the modern emergence of FAS essentially a story of social circumstance, moral entrepreneurship, and medical imperialism?

Three responses come to mind. The first is that the pattern of U.S. alcohol consumption, which Armstrong ignores, might have a good deal to do with the reemergence of FAS in the late 20th century. In 1934, when nobody recognized FAS, Americans drank, on average, less than a gallon of absolute alcohol per person per year. In 1973, they drank 2.7 gallons per person per year (Lender and Martin 1982, 197). Consumption had nearly tripled between the end of Prohibition and the medical recognition of FAS. Young people, baby boomers entering their peak reproductive years, were among the heaviest consumers.

Was there a connection between increasing consumption and discovery? Consider how we notice problems. Some things—one or two chilly raindrops on walking out of the theater—register quickly. Time to open the umbrella, or run for the car. Thalidomide, as Golden points out, had just that sort of effect. It was a “flamboyant” teratogen that triggered a quick response. But we react to other problems, like dirt on our eyeglasses, more slowly. We may not be aware of them at all. Alcohol, a weaker teratogen, always affected a small number of children scattered throughout the population. Perhaps, as Armstrong suggests, more of those children survived to be noticed. But perhaps there were also more of them because more young women were drinking more alcohol. When Jones and Smith assembled their initial critical mass, and published their pioneering research, other physicians took a second look at this growing backlog of puzzling cases and connected the dots. The result was a diagnostic gestalt shift.

A second possible biological factor is genetic. Suppose that Armstrong is right. Suppose that alcohol is only one, perhaps even a minor, factor in the disorganized, polytoxic lifestyle of lower-class women who are at greatest risk for delivering children with birth defects and developmental problems. Armstrong identifies “social inequities” (188) as the root of this behavioral constellation. But there is a large literature in criminology and psychology that associates certain personality traits, such as impulsivity, thrill-seeking, temporal short-sightedness, and disregard for others, with dangerous behavior (e.g., Gottfredson and Hirschi 1990). A pregnant woman who spends 19 hours at a stretch on a bar stool (a case one obstetrician reported to Armstrong) is hardly future-oriented. Twin studies and other evidence suggest that such traits are, in part, a matter of inheritance (Lykken 1995). One way to read Armstrong’s key statistical finding—that pregnant, lower-class women with lots of problems are least likely to give up drinking—is that she is looking at people who are temperamentally inclined to risky behavior. Children who are supposedly suffering from alcohol-related neurodevelopmental

disorders may have behavioral and academic problems because of their mothers'—and, given the likelihood of lower-class endogamy, their fathers'—genes. (This is, of course, an observation about a statistical tendency in a group, not a causal argument for every individual case. Genes are always expressed in particular environments.) The same point can be made about cigarettes and other drugs. They may have direct toxic consequences, but they may also be a “marker” for heritable personality traits that increase the likelihood of problematic behavior.

Armstrong herself opens the door to genetic explanation. She points out, quite rightly, that male drinking causes far more trouble and social expense than female drinking. Her point is about policy priority. If the guys are the ones raising hell, why aim so much propaganda at pregnant women, most of whom abstain anyway? That's a fair criticism. But notice that the same argument suggests that genes—in this case having a Y chromosome, and its associated uterine and post-pubertal testosterone effects—can intersect with alcohol use in ways that magnify the harmfulness of drinking behavior. (The idea that male behavior is itself a purely social construct, with no hormonal or evolutionary basis, is incompatible with a mass of cross-cultural and cross-species evidence.) The same logic applies to heritable traits like impulsivity or psychopathy. One senses a more causally complex story here, one in which the biological keeps intersecting with the social.

One also senses a more morally complex story. Because Armstrong considers FAS to be caused by a tangle of remedial social problems, and because “behavior is shaped by powerful currents—cultural, psychological, as well as biological processes—not all immediately within the control of the individual” (217), it falls to educated, progressive elites to engineer a solution, presumably something along the lines of more prenatal care, more shelters for battered women, and more transfer payments to indigent mothers. When those elites—above all, medical researchers—fail to grapple with the root causes of FAS, or mislead the public about its etiology, she accuses them of bad science and bad motives. For someone who deplors “individualizing blame” (218), Armstrong is quick to name names and denounce leading dysmorphologists as ambitious and diagnostically aggressive careerists. I found myself wondering about the metaphysical consistency of this position. Are not researchers also subject to powerful currents? Does not moral entrepreneurship have its own determinative social context? Armstrong's choice of adjectives suggests that FAS experts and activists are free to sin and should know better, while FAS mothers are unfree and therefore blameless. About the pregnant woman on the bar stool (accompanied by her first FAS child, sitting on the next stool), Armstrong writes, “The power of the story derives in part from how deeply transgressive is the image of a mother perched on a barstool for nineteen hours at a stretch: by implication, the woman is unemployed, unproductive, unfeminine, unmaternal, and morally degenerate” (113). Image? Implication? That stool wasn't glued on. A reasonable person, one with-

out an ulterior moralizing agenda, could still conclude that the woman had behaved irresponsibly.

So could—so did—12 reasonable persons empaneled as a jury. Janet Golden devotes a chapter to the case of *Michael Thorp v. James B. Beam Distilling Company*, a high-profile lawsuit filed in Seattle in 1987 and decided in 1989. The plaintiff's theory was that the makers of Jim Beam Whiskey—and, by extension, other distillers—were negligent in failing to place on their products warnings about drinking and pregnancy. (This was before the Alcoholic Beverage Labeling Act, which mandated such warnings, took effect.) The defense responded that, whatever damage Michael Thorp had suffered, it was the fault of his mother, Candace Thorp—and not necessarily because of her fondness for Jim Beam. She was the ultimate bad mother: slovenly, disorganized, careless of her nutrition, repeatedly divorced, occasionally homeless, and prone to leave her children dirty and unfed. The case perfectly illustrates Armstrong's point about multiple causation, an issue the defense attorneys were quick to exploit. Even more telling was Thorp's lack of personal discipline. How likely was it that she would read a warning label on a whiskey bottle and quit drinking? A confirmed smoker as well as an alcoholic, Thorp could not recall the content of the messages on her cigarette packs.

Unsurprisingly, the jury—and the editorialists commenting on the trial—found in favor of the distiller. What is most interesting about the chapter is its surgical tone, the way Golden dissects the messy lawsuit without offering excuses for either side. Armstrong takes the opposite tack when she describes another well-known case, that of Deborah Zimmerman, prosecuted in Wisconsin for drinking while pregnant. Armstrong explains that Zimmerman's father was an alcoholic, that she had started drinking heavily in high school, and that “she had been raped three times and had been the victim of domestic violence in an earlier relationship—both experiences that can trigger or exacerbate problematic substance use among women” (219). The sins of the fathers, in brief. Golden, who favors a cooler style of reportage (and who also discusses the Zimmerman case), generally leaves the moral tensions and ambiguities unresolved. This is the more effective narrative strategy, for it forces readers to judge for themselves. Golden offers us a front-row seat in the jury box—a relief after a spell in the hard pew of the Correct Policy Church.¹

This isn't to say that Golden neglects social context, or is oblivious to the power of politics to shape discussions about alcohol and birth defects. Far from it. Professing herself an etiological agnostic—she says at the outset that the condition is neither a pure social construction nor a demonstrated biomedical fact,

¹ I should disclose that I was familiar with Golden's work before the book's publication, having heard a portion of it presented as a conference paper and having commented on a draft of the manuscript at the request of the publisher. That said, the style, approach, and conclusions of the book are strictly her own.

implying that it is something of both—Golden declares that the best way to think about FAS is as a disputed diagnosis, one whose meaning has shifted often during its brief history.

She begins her account in orthodox medical historical fashion, reviewing the rise of dysmorphology as a medical specialty and the work of the pioneering FAS investigators in the 1970s. She tells their story sympathetically and with considerable internalist detail. One detail stands out. In 1968, Paul Lemoine, a French pediatrician, published an article describing 127 children born to alcoholic parents (Lemoine et al. 1968). The appearance and symptoms of the children clearly suggest FAS. (When, out of curiosity, I checked the original article, the syndrome fairly leapt off the pages.) But Lemoine and others who studied the effects of maternal alcoholism in France failed to win converts in the medical establishment. Then, in 1973, Jones and Smith published their findings. Lemoine got in touch and professed himself delighted to see his research confirmed. What strikes me about this story is that the initial, independent, and corroborative studies came from countries that either had a historically high rate of alcohol consumption (France) or a rapidly rising rate among women of child-bearing age (the United States). This again suggests that alcohol is causally, though not necessarily exclusively, implicated in the syndrome.

That is my inference, not Golden's. After telling the research story, Golden goes over much of the same contextual ground surveyed by Armstrong: the impact of legalized abortion, feminism, and the debate over fetal rights. But she also looks more closely at how television coverage and the drug war affected public perceptions of FAS. The alarming prospect of an innocent but doomed "bio-underclass" of cocaine-addled babies, a hot topic in the late 1980s and early 1990s, was an especially potent force. Crack stories and FAS exposés, many involving Native American women, made for a potent combination and triggered sporadic efforts at "pregnancy policing" to prevent or to punish women for toxic assaults on their unborn children.

Golden thinks the larger cultural trajectory of FAS was from medicalization to partial demedicalization. The medicalization commenced with the work of the early FAS researchers. They had their aha! moment, outlined a new diagnostic category, collected confirming reports, and gave medical explanation to a constellation of symptoms formerly overlooked or attributed to other causes. Behavioral teratogenesis meant that children having trouble with teachers or other authorities could now be seen as diseased individuals rather than malingerers and troublemakers. But the question of blame never entirely disappeared. It migrated. Were mothers responsible for the impairment? For not using contraception or terminating the pregnancies? And how much misconduct could maternal drinking excuse? Could it be used to exonerate criminals, even murderers on death row? Golden shows how the conservative drift of the culture in the 1980s and 1990s—against recreational drug use, toward more personal responsibility, away from "abuse excuses" and other blame-shifting ploys—set

limits on the medicalization of FAS and the troubling behaviors within its diagnostic penumbra. Golden's conclusion is no conclusion: the meaning of FAS has always been, and will remain, in play.

Golden's artful blend of the old and new, of empathic medical internalism and kaleidoscopic social contextualism, produces a nonjudgmental and contingent narrative. It's Walter Cronkite history: that's the way FAS was then, here's the way it is now. Armstrong, who sees FAS as a red herring from beginning to end, and who disputes its biological basis, prefers a stern, unmasking posture. She's Mike Wallace. She backs up her debunking with arguments, such as her reanalysis of the 1988 survey data—though these findings remain open to alternative biological explanations. Golden finesses the question of biology by largely ignoring it. She also provides less in the way of historical background than Armstrong. I found it curious that Golden, a historian, should excel Armstrong in sociological imagination, while Armstrong, a sociologist, should provide the deeper historical context. So the books end up being complementary. Read together, they provide an excellent introduction to the FAS debate. As a bonus, they offer a case study of contrasting approaches to the even more vexed question of how to describe the nature and purposes of scientific discovery. Assign these books to a good seminar and watch the sparks fly.

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