It is probably safe to say that as long as there has been drink there has been drunkenness and as long as there has been drunkenness there has been discussion of alcohol and health. Among the questions that the 19th century reformers, temperance advocates and physicians (including those who were all three) asked was what did maternal drinking do to offspring? Two 1973 articles in the Lancet, the second of which named a ‘fetal alcohol syndrome’, provoked a search for earlier publications that answered this question.\(^1\)\(^2\) And so, WC Sullivan’s 1899 article linking maternal inebriety in pregnancy to stillbirths, infant mortality and epilepsy came to light.\(^3\) Today, it is widely cited as an early demonstration of the measurable effects of severe alcohol exposure \textit{in utero}.\(^4\) Following the dictum of writing teachers, Sullivan wrote about what he knew. After completing his medical training in Ireland and France, he served as a deputy medical officer in four prisons, ending his career as superintendent of England’s Broadmoor Criminal Lunatic Asylum.\(^5\) At each post, he found a large supply of subjects and ample opportunity to observe the consequences of alcohol abuse. Sullivan published extensively on alcohol, crime, suicide and insanity. His writings appeared most often in the British Journal of Inebriety—a journal founded by the British Society for the Study and Cure of Inebriety—as well as in the Journal of Mental Science, founded by the Association of Medical Officers of Asylums and Hospitals for the Insane (now known as the British Journal of Psychiatry), and in the Lancet.

The work on maternal inebriety appeared early in his career and reflected his observations of female inmates in Liverpool prison. It was published shortly after passage of the Second Habitual Drunkards Act of 1898 (which gave magistrates the power to commit criminal inebriates to special facilities) and amid ongoing efforts to control drinking through licensing laws. Said to be the first experimental study of alcoholic women, it is notable for its large sample size—120 children born to 600 women—and for the use of a comparison group—28 non-alcoholic female relatives of the incarcerated women.\(^6\) Sullivan found a mortality rate of infants born to alcoholic women 2.5 times greater than that of their sober relatives, although he acknowledged environmental factors played a role in this discrepancy. He also demonstrated an effective intervention: enforced abstinence due to incarceration, a finding later noted by the Inspector of inebriates in a 1909 report.\(^7\)
A modern researcher reported that Sullivan overlooked the fact that incarcerated pregnant women received better medical care and a better diet than their peers. This may have accounted in part for the relatively favourable condition of children born to women imprisoned for most of their pregnancies.\(^8\) Despite this methodological limitation, Sullivan presented impressive evidence suggesting alcohol’s direct effect on the fetus. Although his work is acclaimed today, when it appeared, it merely added fuel to the fires of temperance. The case of maternal inebriety and resulting infant mortality served simply as another log to be tossed on the pyre.

Like others in the late Victorian Era, Sullivan never fully lifted his gaze from the immense social problems caused by male alcoholism to consider the ramifications of his own findings about female alcoholism. In a 1903 article, in the *British Journal of Inebriety* on ‘The causes of inebriety in the female, and the effects of alcoholism on racial degeneration’, he held parental, rather than maternal alcoholism responsible for mental and physical disabilities in offspring. Alluding to his earlier work, he conceded that parental intemperance had its greatest effect on offspring when the mother was an alcoholic. He believed that although the germ cell was protected from ‘poisons that circulate through the organism’, the embryo was not. Nevertheless, he concluded that society benefits by caring for the habitual drunkard because ‘treatment at least restrains for a time his [my italics] ability to procreate offspring that are likely to be parasitic or dangerous to the community’.\(^9\)

In England, temperance lost its political punch after World War I; in the USA, passage of the 18th Amendment in 1919 established prohibition as the law of the land.\(^10\) Scientific quintessence occurred as well. The question of alcohol’s effect on reproduction became, as historian Philip Pauly explained, ‘scientifically uninteresting’ between 1910 and 1930. Theories of degeneration—which at times veered into Larmarkian explanations of hereditary tendencies—evaporated; genetics became the dominant scientific explanation. Scientists viewed alcohol as having a direct action only on germ cells. The question as to whether such action was eugenically beneficial—wiping out the weakest cells before they could be fertilized or result in live births—or harmful, by leading to the births of the unfit was answered scientifically with a finding for the null hypothesis. Pearson and Elderton, for example, found in their research at the Galton Laboratory for National Eugenics that alcohol had no effect whatsoever.\(^11,12\) Children born to alcoholics may have had difficulties, but the explanation was sociological not physiological.

Sullivan’s report found a new audience after the ‘discovery’ of fetal alcoholism and the beginning of research on alcohol teratogenesis. This article’s substantive legacy lies in its use of statistical evidence and a control group to show that alcohol harmed the fetus. Sullivan effectively challenged the late 19th century orthodoxy that posited some vaguely defined hereditary degeneracy to be the cause of problems in the offspring of alcoholics; decades later his works helped vanquish the mid-20th century assertion that alcohol harmed neither the germ cell nor the fetus. Whereas one can critique some of Sullivan’s assumptions and conclusions, his implicit argument, that maternal alcohol abuse is worthy of scientific study and attention from policy makers, is sound. Additionally, his work reminds us that mid-20th century scientific certainty about alcohol’s inability to affect the fetus proved false. Given the complex relationship between drinking and health, such intellectual and scientific detours are likely to be taken again. Consideration of historical findings might make these paths a little shorter.

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**References**