Warning Pregnant Women about Alcohol: Science or Politics?

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To My Parents
whose patience, willingness to help,
and amazing editorial skills
have sustained me
ever since my very first paper
on estuaries.
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CHAPTER ONE

Federal Warnings About Alcohol Consumption During Pregnancy

"What must become of an infant who is conceived in Gin? -- with the poisonous Distillations of which it is nourished, both in the Womb and at the Breast," wrote Henry Fielding in 1751. He was not the first, nor certainly the last, to wonder about the effects of alcohol on progeny. Aristotle had warned that, "Foolish, drunken or hare-brain women, [for the] most part bring forth children like unto themselves, morosos et languidos." And the Old Testament says, "Thou shalt conceive, and bear a son. Now therefore beware, I pray thee, and drink not wine nor strong drink." A warning remarkably similar to the one now printed on all alcoholic beverage containers in the United States.

In 1988, the 100th Congress passed a bill (S. 2047) requiring a warning on the labels of all alcoholic beverage containers. All alcoholic drinks, including beer, wine, and hard liquor sold in the U.S. must display the following warning on the container's label in a "prominent" place:

GOVERNMENT WARNING: (1) According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects. (2) Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery, and may cause health problems.

Violation of this act by the bottler (not the seller) of alcoholic beverages is punishable by a fine of $10,000 for every day the beverage is produced without the warning. This law follows more than 15 years of efforts on the part of various congressmen and lobbying organizations to get some sort of warning affixed to liquor.
As evidenced by the views of Aristotle and the others already quoted, the issue of alcohol consumption during pregnancy has a long and emotion-laden history. Both maternal behavior during pregnancy and the use of psychoactive drugs evoke intense emotional reactions in many people. Strong moral convictions contribute a tone of urgency and passion to discussion of drinking during pregnancy. Recently, public debate has erupted around whether or not a waiter should be able to refuse to serve alcohol to pregnant women. In March of 1991, two Seattle waiters were fired from their jobs for trying to convince a pregnant customer not to have a daiquiri because they believed the alcohol might damage the fetus. A 1990 letter to Dear Abby, before this incident, also reflects the fervor of people's convictions: "I can hardly express how sick it makes me feel when a woman who is obviously pregnant orders an alcoholic drink. I believe I am a party to giving an unborn baby poison."5

I first became interested in warnings about alcohol consumption during pregnancy while dining at a chic vegetarian restaurant with my boyfriend. In large letters on the front of the wine menu, was a warning that pregnant women should not drink because it could cause birth defects. I was struck by the fact that of all the dangers implicit in alcohol consumption, only that one was mentioned. As a medical student, I had learned in detail about the adverse effects of alcohol: cirrhosis of the liver, oral cancer; pancreatitis; brain damage and others. Furthermore, I had personally experienced through friends the tragedy which alcohol can wreak through addiction and traffic accidents. When I mentioned to the maitre d' that I was surprised to find pregnant women being singled out in such a way, I was informed that all restaurants and bars were required by law to display the warning.
Although I was initially interested in the political process which had resulted in these warnings, my background in science led me to investigate the current state of medical knowledge about fetal damage due to alcohol consumption. In reviewing the literature, I found it very hard to identify the research basis for many commonly cited "facts" and statistics, particularly those bearing on the harmful effects of moderate or light drinking. There seems to be a discrepancy between the "facts" that are discussed in the popular press and public health information campaigns and what is reported in medical and scientific journals. Initially I thought that perhaps I was simply unable to find the scientific articles on which the publicity was based — that I was just ignorant of some conclusive evidence which existed somewhere in the research literature. But after much searching I have concluded, with surprise, that the evidence is just not there. The basis for categorical statements about fetal harm from alcohol consumption during pregnancy is not to be found in clear-cut scientific evidence, as I had assumed, but rather in the emotional responses evoked by these issues.

This thesis will present the current medical knowledge about the effects of alcohol on the fetus. I will not try to address all the common misconceptions or distortions of scientific knowledge which surround this topic. I will also describe the criticisms of the 1988 warning that have been expressed and examine how the warning about alcohol consumption during pregnancy may affect women, not just their fetuses.

Each of the different types of warnings, such as state mandated posters or the federally required container labels, has a different wording and emphasis. Almost all warnings, however, promote the idea that women should completely abstain from drinking throughout their pregnancies. Because my focus is on pregnancy and alcohol, I will not discuss in detail
those parts of the warnings which relate to drinking and driving or other health problems. The federal warning container label has affected the greatest number of people nationwide and has often been used by the states as a guideline for their future laws. Since this legislation serves as a prototype for all government mandated warnings, I will concentrate my discussion on the specifics of the container labels; however, the same criticisms could be applied to other warning signs.

As a background for discussing the merits and shortcomings of warning legislation, I will first outline the legislative history of the warning labels and in the second chapter I will review the medical literature on the fetal effects of alcohol consumption during pregnancy. In the third chapter, I will identify some problems with using such warnings to decrease the number of children with birth defects. The last chapter will consider the adverse effects of these warnings on women.

**Legislative History**

If the government resolves to try to prevent or decrease the number of children born with birth defects due to alcohol, there are many strategies that could be pursued. They include: (1) increasing outpatient and/or outpatient treatment services for alcoholic women; (2) sponsoring physician training programs on identifying and treating women with drinking problems; or (3) conducting public information/awareness campaigns to inform the public about the adverse effects of alcohol consumption. In the United States, all levels of government, from the municipal to the federal, have thus far focused their efforts largely on public education campaigns; moreover, those campaigns have often limited the scope of the warnings to highlight the
adverse effects of alcohol during pregnancy, rarely mentioning the other adverse effects of alcohol.

There is currently a strong movement across the nation to promote warning signs. Certain special interest groups, such as the Center for Science in the Public Interest, have developed lobbying packets and pamphlets about how to get alcohol warning poster legislation passed in local communities. As a result, many cities around the country have adopted ordinances that require warning signs to be posted in bars and restaurants. New York City, for example, after a highly controversial and much publicized debate, passed a law in 1983 requiring establishments that sell alcohol to display a poster that warned: "Drinking alcoholic beverages during pregnancy can cause birth defects." The city councils of Philadelphia PA, and Washington D.C., soon followed the lead of New York City. Columbus OH, Lakewood OH, Lexington-Fayette KY, Oachita Parish LA, Racine WI, San Francisco CA, and 7 cities in Florida also passed similar measures.

In addition to the warnings mandated by some cities, many states have laws which require bars and restaurants serving alcoholic beverages to post a warning about the possible adverse effects on fetuses. Such laws exist in Alaska, California, Delaware, Georgia, Illinois, Maine, Nebraska, New York, South Dakota, and Utah. In California, the alcohol warning signs which have been posted since 1988, were the unexpected result of complex political forces. In 1986 the California voters passed Proposition 65, a voter initiative called "The Safe Drinking Water and Toxic Enforcement Act" which was intended to force industry to stop releasing toxic substances into the drinking water. Proposition 65 also called upon the governor to publish a list of chemicals known to cause cancer or reproductive damage. Although the first list of toxic substances published by the Governor's office
was very limited, pressure from politicians and interest groups ultimately resulted in warnings for about 450 chemicals, including alcohol in alcoholic beverages.

The federal government has long been involved in regulating alcohol consumption. Its most ambitious such effort, of course, was prohibition. In 1917 the 18th Amendment to the Constitution prohibited the manufacture, sale, or transportation of intoxicating liquors anywhere within the U.S. Violations against the Prohibition Law could be punished with fines up to $10,000 or 5 years in prison, or both. Sixteen years later, in 1933, the 21st Amendment was passed, repealing the 18th amendment and returning the regulation of liquor traffic to the states. The current legislation requiring warning labels on the containers of alcoholic beverages has its more recent origins in the 1970's. The following legislative history recounts the linkage between the federal warning labels and prioritization of alcohol consumption during pregnancy as a public health concern.

In 1972, Senator Thurmond from South Carolina introduced a bill to Congress which would have required a warning that "consumption of alcoholic beverages may be hazardous to your health and may be habit forming." This warning was to appear only on the label of beverages containing 24 percent alcohol or more, thereby exempting beer and wine. Note that this warning is very broad compared to the more specific warnings which have been written in the recent past. Senator Thurmond's proposal was attacked as a new "temperance movement" by its opponents. Although Senator Thurmond re-introduced this bill every year since 1972, it never passed.

Advances in medicine and science led to the discovery, in 1973, of fetal alcohol syndrome (FAS) by some researchers in Seattle (Jones, et al.). Then in
1977, a study by Little, published in the American Journal of Public Health, suggested that moderate consumption of alcohol was associated with decreased birth weight. These studies, both of which will be discussed in detail in the next chapter, were crucial in changing the congressional attitude about warning labels from one of relative indifference to one of concern and urgency. Also in 1977, the Commissioner of the Food and Drug Administration urged the department responsible for federal regulation of alcohol, the Bureau of Alcohol, Tobacco, and Firearms (BATF), to require a warning label about the risk of alcohol consumption during pregnancy. BATF conducted a study on the warning labels which concluded that because no studies had yet assessed the potential effectiveness of a warning label: "It is not yet clear that warning labels on alcoholic beverage containers would be the best tool to educate the public."  

In 1978, a hearing was held by a subcommittee of the Committee on Human Resources about "Alcohol Labeling and Fetal Alcohol Syndrome"; and simultaneously, Senator Thurmond modified his original bill to add the specific warning, "And may cause serious birth defects when consumed during pregnancy." Like Senator Thurmond's earlier bills, this one was also defeated; however, it did heighten interest in FAS and alcohol warnings. Consequently, in the same year, 1978, the Senate passed a bill requiring the Department of Treasury, in conjunction with Health, Education and Welfare to undertake a report on educational campaigns to inform the public of the adverse affects of alcohol consumption. This report, completed in 1980, rejected the idea of warning labels as a modality of public education at that time, on the grounds that their effectiveness had not been demonstrated. 

In 1981, the Surgeon General issued his first and only warning about the effects of alcohol on anyone, man, woman, or fetus:
"The Surgeon General advises women who are pregnant (or considering pregnancy) not to drink alcoholic beverages and to be aware of the alcoholic content of food and drugs. 10

He did not mention cirrhosis of the liver, pancreatitis, cancer of the mouth, alcoholism, brain damage, addiction, or any other health problem resulting from alcohol consumption—all of which affect human beings other than fetuses. This warning by the Surgeon General legitimized and advanced the movement towards warning labels.

From 1981 to 1988, Senator Thurmond, as well as Senators DeConcini, Humphrey, and others in Congress, focused much interest on the issue of alcohol consumption during pregnancy. They introduced numerous bills on the subject to Congress and held four Congressional Hearings on related subjects.

The current legislation mandating warning labels was introduced by Senator Thurmond in February of 1988. Originally, it was to require that the following 5 warnings be rotated with one another throughout the year:

(1) WARNING: The Surgeon General has determined that the consumption of this product, which contains alcohol, during pregnancy can cause mental retardation and other birth defects.

(2) WARNING: Drinking this product, which contains alcohol, impairs your ability to drive a car or operate machinery.

(3) WARNING: This product contains alcohol and is particularly hazardous in combination with some drugs.

(4) WARNING: The consumption of this product, which contains alcohol, can increase the risk of developing hypertension, liver disease, and cancer.

(5) WARNING: Alcohol is a drug and may be addictive.11
Subsequently, the bill was amended to its current form:

GOVERNMENT WARNING: (1) According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects. (2) Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery, and may cause health problems.\textsuperscript{12}

The proposed warnings about addiction and the dangers of combination with other drugs were dropped; and the specific warnings about hypertension, liver disease, and cancer were replaced by a more general warning about harming one's health. The warning about birth defects was altered to emphasize the Surgeon General's call for abstinence during pregnancy. Moreover, the new amended warning about drinking during pregnancy differs from all the previous warnings in that it uses the morally exhortative word "should" while the others did not. This legislation passed Congress on October 21, 1988 and took effect 12 months later.

\textbf{Conclusion}

It is undoubtedly a worthy and laudable goal to avert FAS, with its consequent suffering of both parents and children. Moreover, we as a society value public education as a means of social improvement, so educational efforts about the dangers of drinking during pregnancy have appealed to people of all political persuasions. A particular advantage of warning signs as an educational tool is that the cost of implementing them can be placed on the liquor industry or on establishments that sell alcohol, rather than requiring public funds. Unfortunately, government policies requiring warnings signs and labels have received little critical analysis by either political groups or health professionals. This study will review the scientific data about the effects of alcohol consumption on the fetus and will offer some
needed criticism of warning labels as primary instruments to address a complex social problem.


2 Ibid

3 Ibid


CHAPTER TWO

The Fetal Effects of Alcohol Consumption During Pregnancy

It is interesting to view the current focus on the effects of alcohol during pregnancy in an historical light. From 1720-1920, the harmful effects of parental drinking were a topic of major concern to clinicians and medical researchers. British apothecaries and social commentators during the "gin epidemic" from 1720 to 1750, stridently warned of the dangers of parental alcohol consumption. Their observations of the effects of parental alcohol consumption led the College of Physicians to petition Parliament to control the distilling trade because they believed that liquor was "a cause of weak, feeble, and distempered children."¹ Around the turn of the century, many surveys and epidemiologic studies were done which found offspring of alcoholics to be smaller, more diseased, and less intelligent than normal. For example, in 1905, MacNicholl surveyed school children in New York City, and found that of 6624 children of drinking parents 53% were "dullards" whereas among the 13,523 children of abstainers only 10% were dullards.² After 1920 however, this research fell into disrepute and was largely discounted. In 1955, a pamphlet from the Rutgers Center of Alcohol Studies stated, "The old notions about children of drunken parents being born defective can be cast aside, together with the idea that alcohol can directly irritate and injure the sex glands."³ The dominance of this view is reflected in a response by the editors of the Journal of the American Medical Association in 1942. A reader asked if 36 oz of beer taken by a pregnant woman would harm the fetus. The printed reply stressed that animal experiments correlating maternal alcoholism with miscarriage or congenital defects were not directly applicable to humans, and asserted that even large
doses of alcohol had not been proven harmful to the human fetus. The cycle came full circle in 1973 when Jones and Smith et al published a description of the birth defects in the children of alcoholic mothers which for the first time was called "fetal alcohol syndrome". In the 17 years since then, another period of intense concern about the effects of alcohol during pregnancy has begun, and over 4000 clinical and research papers on the subject have been published.

Fetal Alcohol Syndrome

Jones and his colleagues described a number of gross physical deformities in 11 young children born to severely alcoholic mothers who drank throughout their pregnancy. The pattern of anatomical deformities, growth deficiency and developmental delay in all of these children was remarkably similar and Jones et. al. termed it the Fetal Alcohol Syndrome (FAS). These researchers, and subsequent others established a clear correlation between maternal alcohol abuse and the appearance of specific abnormalities in their offspring. In order to standardize the diagnosis of FAS, the Fetal Alcohol Study Group of the Research Society on Alcoholism proposed in 1981 that the diagnosis of FAS only be made when the child of a woman who drank heavily during pregnancy has some features in each of the following three categories: 1) head or face anomalies, 2) growth retardation, and 3) central nervous system or mental effects.

Characteristically, children with FAS have a flat midface with a short upturned nose and a small chin. Often the upper lip is thin and the philtrum (the indentation between the nose and the mouth) is indistinct and/or longer than normal. The width of the eyes, called the palpebral fissure, is shorter than normal and children with FAS may have a vertical fold of skin (an epicanthal fold) covering the junction where the upper and lower eyelid meet.
next to the nose. They may also have other abnormalities including eyelid droop, deviation of an eye, and some changes in the external ear. These facial abnormalities seem to get less noticeable with age. Not all children with FAS have all of these characteristics and the finding of one of these changes in an otherwise normal infant does not suggest FAS. Children with FAS also have higher frequency in other congenital malformations such as heart defects, cleft lip and palate, deviation of the fingers, hip problems and curvature of the spine. There may also be auditory problems, visual problems (primarily nearsightedness), and malformed or malaligned secondary teeth. None of these major malformations is necessary for the diagnosis of FAS.

Babies with FAS tend to have a low birth weight and short birth length, which is thought to be due to a direct effect of alcohol on fetal growth. This growth deficit continues during childhood and, as adults, people with FAS tend to be shorter than usual. These growth problems are thought to be related to prenatal growth problems and not related to postnatal nutritional status. At puberty, girls tend to gain weight and so can lose the characteristic thinness but they usually are still short.

The third category of central nervous system changes is the most disabling. Babies with FAS can have a smaller head than normal, poor sucking reflex, muscle weakness, tremulousness and jitteriness. In childhood, children with FAS can have hyperactivity, attention deficits, mental retardation, and learning and behavioral problems. Long term studies have found that over time, there were some improvements in motor skills, concentration, and social adjustment. However, other problems such as hyperactivity, speech disorders and anxiety persisted.

The terms Alcohol Related Birth Defects (ARBD) or Fetal Alcohol Effects (FAE) are used when the child of a woman who is thought by the
physician to drink "heavily" has some of the characteristics of FAS but not enough to make the diagnosis. Diagnostic criteria for FAE have not been established so there is much variation in what is called a fetal effect of alcohol. This term is sometimes used when the child has only the facial abnormalities and no growth disorder, or when the child has some central nervous system effects but no facial anomalies. Because these defects can also occur in children of parents who did not drink, it is less clear that these effects are due alcohol.

Alcohol is only one of thousands of substances that can cause birth defects. Other factors which have been linked to anatomical deformities, growth deficiency and mental retardation are maternal age, parity, social class, smoking habits, some illicit and prescription drugs, and nutritional status of the mother. Maternal smoking has been clearly linked to decreased birth weights. This is important because maternal smoking typically covaries with maternal drinking, as do some of the other variables, and the combination of drinking and smoking appears to increase the risk of birth defects. Although studies typically attempt to control for some of the possible causes of birth defects, it is impossible to adequately assess all the variables that affect a pregnancy outcome. As a result, claims that a particular defect, such as low birth weight, is related to maternal alcohol consumption are likely to be confounded by other variables. In addition, guidelines for the quantity or severity of birth defects necessary to make a diagnosis of a fetal alcohol effect have not been developed. Clearly, where the lines are drawn about what should be called an effect of fetal alcohol exposure and what effects are not specific enough to make the diagnosis considerably influence the reported prevalence of alcohol related birth defects.
Estimates about the incidence of FAS range from 1 to 3 cases per 1000 live births. As might be expected because of recall bias, retrospective studies find a higher incidence than prospective studies (2.9 versus 1.1 per 1000). A 1987 study found that the incidence of FAS in the offspring of chronic alcoholic lower class women was 14 times greater than chronic alcoholic upper middle class women. Thus the socioeconomic status of the population studies may be responsible for the wide variation in the incidences of FAS reported. It is important to remember that drinking heavily does NOT always mean that a woman will have an abnormal baby. According to the Seventh Special report to the U.S. Congress on Alcohol and Health (1990), "far fewer cases of FAS and FAE [than expected] have been reported relative to the frequency of abusive drinking in pregnant women." Some researchers estimate that approximately 30% of chronic alcoholics will have babies with FAS. However, a large-scale epidemiological study found that only 2.5% of women identified as alcohol abusers gave birth to children with FAS. Again differences in the SES of the studied populations may be responsible for this variation.

The mechanism by which alcohol exerts its influence on the fetus is still largely unknown. One theory is that alcohol restricts the flow of maternal blood to the placenta and that decreases the fetus's supply of oxygen and nutrients. This concept is supported by studies in monkeys and rats which found that infusion of alcohol into a pregnant animal at levels low enough not to affect the mother, may lead to decreased placental blood flow or decreased fetal cardiac output. However, a recent report of six pregnant women who underwent a Doppler study after taking a small dose of ethanol showed no effect on uterine blood flow. Another hypothesis is that fetal defects are due to the fact that alcohol increases prostaglandins, which are
involved in all stages of pregnancy and fetal development. Administration of certain exogenous prostaglandins has been demonstrated to be teratogenic (i.e., something which causes birth defects or, literally, makes a monster), in several species, including man. Still another hypothesis is that alcohol may have a direct effect on the cells of the fetus by altering protein synthesis or disrupting the cells’ growth signals. Much research is currently underway to evaluate these theories, but so far none has been proved or disproved.

**How Much Alcohol is Dangerous?**

Each person metabolizes alcohol at different rates, and the harmful effects of blood alcohol levels may vary from woman to woman and, in fact, from fetus to fetus. There have been reports of dizygotic twins in which one twin was born with FAS and the other twin was normal, suggesting that the genetic makeup of the fetus, or attributes of the sperm and the egg at conception, may partly establish its susceptibility to alcohol. However, determining the level of alcohol consumption that is a significant danger to the fetus is clearly important. Alcohol consumption is variably reported in the literature as ounces of Absolute Alcohol (AA score), grams of alcohol, or "standard drinks". One standard drink is one 12 oz. can of beer, one 5 oz. glass of wine, or one mixed drink with 1.5 oz. of 80 proof alcohol, and is equal to 1/2 oz. of Absolute Alcohol or 15 grams of alcohol. For the sake of simplicity all dosages of alcohol have been reported in this paper in the form of standard drinks. An increased incidence of FAS and FAE has been repeatedly reported in groups of women who drink an average of 6 or more drinks each day throughout their pregnancy. However, FAS has never been reported in the children of social or moderate drinkers. The fact that the spectrum of defects associated with the consumption of alcohol ranges from a few facial changes
to the full blown FAS with mental retardation has suggested to some researchers this continuum of defects reflects a continuum of dosage in fetal exposure to alcohol. These researchers believe that *any* maternal alcohol consumption will cause subtle defects in the children, but such changes may not be found because they are not easily detectable. This view is the one generally supported by policy makers.

Much publicity has been given to the possibility that *any* alcohol consumption at all increases a woman's risk for having a child with birth defects. Most public health official take the stance that since there are no known safe limits of alcohol consumption, pregnant women should avoid alcohol altogether. The report issued by the Surgeon General in 1980 (his only warning to date on the effects of alcohol on pregnancy or on other health issues relating to alcohol) contributed crucially to this position. It read:

"The Surgeon General advises women who are pregnant (or considering pregnancy) not to drink alcoholic beverages and to be aware of the alcoholic content of food and drugs... Among the findings of the report are the following: Significantly decreased birth weight among the children of some women who average only one ounce of absolute alcohol (two standard drinks) per day during pregnancy."

It is, of course, next to impossible to prove that a substance is "safe" since no research design can completely assess the functioning of the human body and mind. It is much more feasible to show that a particular action or substance is associated with a negative outcome and so prove that a substance is unsafe. Some studies, like the one quoted in the Surgeon General's warning, have indeed reported that women who drink moderately may be at an increased risk for having miscarriages, low birth weight babies, and infants
with anatomical abnormalities. But pervasive flaws in the research make the findings hard to interpret.

The particular report quoted in the Surgeon General’s warning is a 1977 retrospective study by Little of 263 members of a health cooperative. She found a decrease in the average birth weight of infants born to mothers who said they drank two or more drinks/day.\(^{17}\) Unfortunately, the use of only two categories of drinkers (less than 2 drinks/day and 2 or more drinks/day) makes it impossible to tell if the reported average decrement in birth weights is true for those women who drank only two drinks/day or whether the result is due to those women who were in the "or more "category and may have consumed 8 drinks/day. A 1983, prospective study of 900 British women found an association between decreased birth weight and reported drinking of more than 100 g (approximately 7 drinks) of alcohol/week. This finding was statistically significant only for smokers.\(^{18}\) Again the use of an or more category clouds the significance of the results. A more recent prospective study of 1500 British women which attempted to control for confounding factors of smoking, caffeine, and psychosocial stress found "No evidence for a negative influence of alcohol on birth weight. Among non-smokers, the adjusted birth weight being if anything marginally increased in non-smoking drinkers."\(^{19}\) They did, however, find a compounding of the negative effect of smoking on birth weight with increased drinking. These studies suggest that there may be some effect of alcohol on birth weight, particularly in women who report averaging more than 1-2 drinks/day, and especially in women who smoke. However, these studies are very incomplete and no conclusions about the effects of moderate drinking should be drawn from them.
Several studies have tried to assess the effects of alcohol consumption on miscarriage rates. The most often cited article is a 1980 case/control study by Kline et. al. which analyzed the frequency of drinking alcohol among about 600 women who aborted spontaneously and 600 who delivered after at least 28 weeks gestation. They found that the cases were approximately twice as likely as the controls to report drinking alcohol two or more times per week.\textsuperscript{20} However, they found no correlation between the amount of alcohol consumed and the risk of miscarriage. A \textit{Lancet} editorial in the same issue, suggested that the differences between cases and controls in the Kline study could be due to other differences between the groups, such as the fact that women who aborted were interviewed earlier in their pregnancy and may have been more likely to remember how much they drank. According to an article in \textit{Science}, Kline et. al. repeated the study with private patients, instead of those on public assistance, and found no discernible effect of drinking on the rate of spontaneous abortions.\textsuperscript{21} Similarly, two recent studies found no correlation between moderate alcohol consumption and unexplained miscarriages. A 1990 case/control study of Italian women who had two or more unexplained miscarriages found that "moderate alcohol consumption (defined as 1 or more drinks per day) is not associated with an increased risk of recurrent miscarriage".\textsuperscript{22} This result supports the conclusions of a study of 2000 Australian women which found that the total alcohol consumption of women who had stillbirths or miscarriages was not different from that of women who had live births. The researchers did find a correlation between beer (but not wine or hard liquor) consumption and increased rate of spontaneous abortions, but the authors suggested that this result could be due to confounding variables such as smoking.\textsuperscript{23}
Several researchers have attempted to determine if there is an increased incidence of the characteristic anatomical malformations of FAS in the children of moderate drinking women. An early study of women in Seattle, found that there was a significant relationship between abnormalities suggestive of FAS and reported alcohol consumption greater than 2 drinks/day prior to recognition of pregnancy. But, interestingly, this study did not find a correlation between reported maternal alcohol consumption during pregnancy and birth defects. In another study, a multivariate analysis of urban women found a clear correlation between consumption of 6 or more drinks per day at or near the time of conception and an increased risk of abnormalities, particularly of the the face and head. The study reported a dose-response relationship between embryonic exposure to alcohol and physical anomalies. However, the researchers acknowledged that the data "suggest that a threshold level might be observed with a larger database."

In a large prospective study, Mills and Graubard analyzed the malformation rates of each organ system and clusters of symptoms like those found in FAS. They compared the malformation rates of non drinking women with those who drank less than 1 drink/day, 1-2 drinks/day, 3-5 drinks/day and 6 or more drinks/day and the concluded that "light and moderate drinkers (those who drank 2 or fewer drinks/day) did not have an increased rate of malformations compared with nondrinkers." The results of the two other studies previously mentioned suggest that the critical period for anatomical defects may be around the time of conception, before a woman is aware she is pregnant, and this possibility needs to be further studied. In any case, none of these studies find an association between drinking two or less drinks per day and and increase in birth defects, and no definitive conclusions can be drawn about the effect of consuming 2-6 drinks/day.
The possible existence of a critical period when alcohol consumption exerts a greater harm on the fetus has tremendous significance both for the kinds of studies that need to be done to assess the effects of alcohol and for the relevance of different public health policies. If the critical period occurs before a woman knows she is pregnant, studies assessing her alcohol consumption during pregnancy may not be informative and public health policies that warn women not to drink during pregnancy may be useless. The studies that have attempted to assess this question, so far have not been adequately designed to definitively answer this question and have sometimes arrived at contradictory results. Several of the studies previously mentioned (Ernhart et. al. and Hanson et. al.) suggest that the critical time for malformations is around the time of conception. However, an analysis of studies in several different countries where there was clinical intervention to help women alcohol abusers found that those women who decreased their alcohol consumption during pregnancy had healthier babies than those who continued drinking heavily.27 Some parameters affected by decreasing alcohol consumption were reported to be birth weight, head circumference, anatomical abnormalities and neurological findings. These studies suggest that if alcoholic women are helped to decrease their drinking during pregnancy, they will not only decrease the risk of obstetrical complications but also increase the chance that their babies will be born healthy. These studies refer only to the effectiveness of intervention in the drinking habits of alcoholics, and can not be extrapolated to include the effectiveness of intervention in moderate or social drinkers.

The little research completed to date on the effects of moderate drinking has yielded inconclusive and conflicting results. For every study reporting some harmful effect of alcohol at low doses, another study finds no
association. In addition to the shortcomings already identified in regard to specific studies there are also some more general problems with the research. The studies have often used averages of alcohol consumption, obscuring the true drinking patterns of women. Laboratory studies on rats by West and Pierce have shown that peak blood alcohol levels, and not the amount of alcohol consumed, correlated with brain growth retardation and behavioral deficits. This suggests that although the average alcohol consumption of a woman who has 7 drinks one time during a week is the same as that of a woman who has a beer with dinner every night, the effects on the fetus may be vastly different. A second problem frequently discussed is that the stigma of drinking often leads to underreporting. This implies if a study should find that there is a certain negative outcome associated with reported drinking, say of 2 drinks per day, the actual alcohol consumption that correlates with increased risk may be significantly higher. Similarly, it is quite possible that a small association of an adverse pregnancy outcome found in a group of women who report "moderate" drinking, may be entirely due to some women who are actually belong in the heavier drinking category but who underreport their alcohol consumption. The pervasive problems of averaging drinking patterns and underreporting alcohol consumption should be taken into account by public health officials when trying to apply the results of these studies to public policies.

Unfortunately, these types of problems in research design are dismayingly common. In a report of the American Medical Association Council of Scientific Affairs, the authors state, "Attempts to draw conclusions concerning the effects of less-than-heavy drinking have been hampered by certain pervasive imperfections in research design and methods." After an extensive review of the literature about the effects of moderate and light
drinking on the fetus, another researcher, Dr. G. Knupfer, concluded that, "There is no evidence that light drinking by pregnant women harms the foetus. Studies attempting to test this question have failed to show valid results mainly because of the inadequate classifications of drinking practices employed." Clearly, then, the scientific community is not convinced that light or moderate drinking is dangerous to the fetus.

**Paternal Drinking**

Although almost all of the public information campaigns and research studies have focused on the effects of maternal alcohol consumption, a few recent studies have looked at paternal drinking. By contrast, in the 18th and 19th centuries, studies of alcohol related birth defects often cited male drinking as a cause of abnormal children. In 1968, before FAS had been rediscovered in the United States, a French report detailing the defects in children born to alcoholic parents was published. This study by Lemoine et al is often referred to in the literature as an early report confirming that excessive *maternal* alcohol consumption can lead to FAS. But interestingly, this report consisted of observations of 69 families, in which *both* parents were alcoholic in 29 cases, *only the mother* was alcoholic in 25 cases, and *only the father* was alcoholic in 15 cases. Recent studies of rats and mice have found an increased susceptibility to infection, behavioral changes, and decreased responsiveness to stress in the offspring of male animals exposed to alcohol prior to conception. Moreover, a 1987 prospective multivariate analysis of 377 families found that "father's drinking is an independent predictor of infant birth weight" after maternal drinking, smoking and other risk factors had been controlled for. The study found that if the father averaged 2 or more drinks per day or at
least five drinks on one occasion by the mother’s report, a decrease of 137 gms in infant birth weight was predictable. These studies need to be repeated and further research undertaken before it can be established that paternal drinking affects offspring, but these reports raise many important questions.

**Conclusion**

In the seventeen years since fetal alcohol syndrome was rediscovered, scientific knowledge about the effects of alcohol consumption on offspring has increased dramatically. But human development is a complex and difficult subject to study and we still know very little. Researchers have been able to establish that a pattern of defects specific to fetal exposure to alcohol can occur when a woman drinks 6 or more drinks per day. However, whether or not lower dosages of alcohol are harmful to the fetus and when during the pregnancy this exposure might be dangerous has not been well established. In addition, recent studies about the possible effects of paternal alcohol consumption have suggested that women alone may not be responsible for all alcohol related damage to the fetus. In spite of the deficiency of the research evidence, public health policies exhorting women to abstain from alcohol have become widespread. The following chapter will identify some of the problems with these policies, focusing on the federal warning labels.

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2Ibid, p.1404.

3Ibid, p.1411.


6 Streissguth AP. "Fetal Alcohol Syndrome and the Teratogenicity of Alcohol: Policy Implications", Paper for the 8th World Congress of the International Commission for the Prevention of Alcoholism and Drug Dependency to be held in Kuala Lumpur, Malasia, September 1991. To be published by the WHO.


8 Ibid.


13 "Seventh Special Report to the U.S. Congress on Alcohol and Health", Secretary of Health and Human Services, Public Health Service, National Institute on Alcohol Abuse and Alcoholism, Rockville MD, January 1990.


30 Knupfer, G., "Abstaining for Foetal Health: The fiction that even light drinking is dangerous", Unpublished, Alcohol Research Group, Medical Research of San Francisco, July 1990.


CHAPTER THREE

The Warning Label

GOVERNMENT WARNING: (1) According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects. (2) The consumption of alcoholic beverages impairs your ability to drive a car or operate machinery, and may cause health problems.

Since this warning began to appear on alcoholic beverages all over the United States in November of 1989, there has been surprisingly little debate concerning its merits and effectiveness. This chapter will discuss the few studies of the warning and the six types of criticism that have been advanced about the warning label. I will examine only those commentaries which are directly related to the first warning, that pertains to alcohol consumption during pregnancy. I will begin with some less serious criticisms then move to those of weightier concern.

I. "No One Will See the Warning"

A common critique, and one that is often made even by supporters of the this type of legislation, is that consumers will not see the warning. Since these warnings will only be on the bottle or can of alcohol, those individuals who buy mixed drinks or house beer or wine will not be exposed to the warning. Similarly, since the warnings can be placed anywhere on the label and can be as small as 2 millimeters high, some interests groups, such as the Center for Science in the Public Interest, have questioned whether the labels could actually be read at all.
Substantiating these criticisms, initial surveys suggest that very few people had noticed and were aware of the warning labels. A telephone survey in Utah found that awareness of the warning label increased only moderately. Approximately 10% of those surveyed reported having seen the warning when asked before it had actually appeared, that is false positives; compared to 23% one year after the warnings were displayed on bottle labels.\(^3\) A separate study found that awareness of a warning label on alcoholic beverages increased from a false positive rate of 23% in 1989 to 35% in May of 1990.\(^4\) These studies suggest that only about 10% of the population had become even aware of the existence of the warning 6 months to a year after they began to be displayed. Whether or not people read the warnings or knew what they said is not clear from these studies. While these criticisms are important in assessing the informational effectiveness of the legislation, they merely revolve around issues which might be corrected by making the warnings more visible. They do not challenge the basic concept that alcoholic beverages should bear a warning label, nor question the content of the mandated warning.

II. "Everyone Already Knows"

One of the major arguments about the legislated warnings has revolved around the question of whether or not they will give consumers new information. Supporters of the legislation repeatedly pointed to a 1987 US Public Health Service study which concluded that health warning labels "can be effective in increasing knowledge and can have an impact on consumer behavior, particularly in combination with other educational initiatives."\(^5\) This study was based on a review of the current literature about the effectiveness of warning labels in general, not alcohol warnings in
particular. Mr. W. Kip Viscusi, one of the nation's foremost experts on the economics of risk and information and one of the principal consultants on the Public Health Service study, sharply criticized the study on the grounds that "the report does not specifically deal with alcohol beverage warnings. It contains no conclusions about whether such warnings will or will not be effective." Mr. Viscusi and other witnesses urged that the warning label not be adopted because it did not convey new information to consumers; and they believed that such warnings would only make consumers jaded and unlikely to read or heed future more important warnings. Mr. Viscusi also charged that the warnings "appear largely intended to browbeat individuals into changing behavior rather than trying to convey new information that they did not already have before." For these reasons, he believed that the warning labels would not be effective.

Whether or not the public is currently aware of the information contained in the proposed warnings was debated several times during the legislative hearings. While most people agreed that public knowledge about the problems of drunk driving and alcoholism was high, there was disagreement about public knowledge regarding the danger of alcohol consumption during pregnancy. Supporters of the legislation pointed to a 1985 government study finding that only 57% of Americans had ever heard of fetal alcohol syndrome. However, as Mr. Viscusi pointed out, the relevant question is not whether Americans recognize the medical name for birth defects due to alcohol; rather it is whether they are aware that alcohol consumption during pregnancy may harm the fetus. Survey studies indicate that they are. A 1987 Gallup poll found that 90% of the population agreed with the statement "the use of alcohol by pregnant women can cause birth defects." The high expression of agreement is particularly interesting in—light
of the fact that no particular level of alcohol consumption was specified, which suggests that even more people might have agreed if questioned about "excessive" use of alcohol. The contention that people are generally aware of the danger of alcohol consumption during pregnancy have been strengthened by more recent surveys. A study conducted in June and July of 1989, before the legislation became effective, found that almost everyone (96% - 99%) surveyed agreed with statements about alcohol and birth defects repeating the language of the warning labels. This finding strongly supports the idea that the warnings do not provide any new information to the public. This study also found that, while 93% of the women respondents rated drinking five drinks at at time during pregnancy as very harmful, 67% also rated drinking any alcohol at all during during pregnancy as very dangerous. This latter finding raises the question of whether it is appropriate to try to convince the population that any alcohol at all is dangerous during pregnancy.

III. "The Disease Model of Alcoholism is Undermined"

An argument presented by the American Council on Alcoholism during the hearings, and one that has received little attention, is that the warnings will undermine the disease model of alcoholism. "It is the ACA's opinion that a label will do more harm than good. Reasons for this belief include the dangerous erosion of the disease concept..." The premise of a warning is that people who drink would stop if they knew how bad it was for them. This implies that drinking is purely a matter of choice and negates the idea that there is a physiologic or psychologic addiction which the individual does not have control over. The point is made clearer one thinks about the difference between the underlying, subtle message of a public warning and that of a campaign to convince alcoholics to seek help in combating the
problem. Thus by promoting label warnings about the dangers of alcohol the government sets a tone that re-enforces the belief that people who drink heavily are willful or ignorant, not suffering from a debilitating disease.

V "Unforeseen Changes in the Law Will Ensue"

Michael Jacobs, a writer for the Syracuse Law Review, takes a very different and interesting approach to the warnings. He suggests that the warnings are dangerous because they will allow alcoholic beverage manufacturers to evade future law suits concerning the ill effects of alcohol on the grounds that the the consumer should have been aware of the risks of drinking. The preemption clause, Section 216 of the Alcoholic Beverage Labeling Act states,

No statement relating to alcoholic beverages and health, other than the statement required by section 215 of this title shall be required under State law to be placed on any container of an alcohol beverage or on any box carton, or other package irrespective of the material from which made, that contains such a container.10

This preemption is modeled after that of the Federal Cigarette Labeling and Advertising Act. Jacobs points out that the preemption clause of the cigarette act has been used in 4 separate cases in four different federal courts of appeals, without any dissent, to dismiss damage actions against the cigarette companies based on the common law theory of inadequate warning. He concludes that

Like the CLAA [Cigarette Labeling and Advertising Act], the ABLA [Alcoholic Beverage Labeling Act] will eliminate private damage actions that might otherwise have succeeded and will freeze in place the warning scheme set forth in the Act.11

In fact, Jacobs suggests that the industry may have covertly supported the bill because they "wanted the health warning labels as a way of buying a defence for future product liability cases."12 This idea is supported by the fact that the
alcohol industry did not testify during the Congressional Hearings. Jacobs is also concerned that the Act might have other unintentioned effects. For example, this act might imply that some acts, such as driving drunk or giving birth to a baby with fetal alcohol syndrome, which had been regarded as negligent could now be considered intentional since the person had presumably read the warning and acted in full knowledge of its possible effects.

V. "The Warning is Excessive"

The warning mandated by the federal legislation implicitly promotes the standard that women should abstain completely from drinking during pregnancy. The reasoning given was that "There is no established safe dose of alcohol, nor does there appear to be a safe time to drink."13

While it is certainly true that no one has proven that it is completely safe to drink during pregnancy, the literature review in the previous section offered little, if any, evidence that light drinking during pregnancy damages the fetus. In drafting the warnings, Congress might have more accurately warned about "excessive" alcohol consumption, or cited a dangerous level of consumption (say 4 drinks/day, to be on the safe side), a level which studies have shown to be detrimental to the fetus.

The question then arises as to why Congress worded the warning in such a manner that abstinence was the implicit goal. Was Congress simply unaware of the lack of evidence supporting this extreme a recommendation? Almost no discussion was raised around this question; and none of the witnesses testified in any detail about the research of the effects of moderate and light drinking during pregnancy. However, although there was no explicit presentation to the Committee about the inconclusive character of the
research concerning light or moderate drinking, the subject was mentioned. During his questioning of expert witnesses Senator Gore commented,

"The scientific evidence supports fully the proposition that drinking above a certain amount causes fetal alcohol syndrome and does not speak authoritatively to the issue of whether or not small amounts of of alcohol cause the same damage."

The witness, Dr. Gordis, agreed to this statement. So there was some knowledge about the limitations of the research regarding light and moderate drinking.

Several nonmedical witnesses argued that the warnings were over broad, however, Senator Gore rebutted their arguments, focusing solely on the warning about alcohol consumption during pregnancy and saying that the medical experts had testified that abstinence was an appropriate policy. In actuality, only two of the five medical experts who testified at the hearing, Dr. Jones and Dr. Gordis, had discussed the effects of alcohol on the fetus; the others testified about other health effects of alcohol. Both of these witnesses strongly supported the position that abstinence be recommended for pregnant women.

Some caveats should be borne in mind with respect to this testimony. Dr. Jones was the "discoverer" of fetal alcohol syndrome and is therefore, obviously, an expert in the field. But because his research focuses exclusively on children who suffer from fetal alcohol syndrome and he sees the worst tragedies occurring from fetal exposure to alcohol, he may have a skewed perception of the prevalence of these problems in the general community. His focus on the need to help these children may distance him from the problems of the mothers. He is also likely to have a psychological (and perhaps even grant-motivated) investment in focusing social concern on the effects of alcohol on fetuses. It is important to remember that despite the
consensus among the doctors who testified at the hearings, the danger to fetuses of light and moderate drinking during pregnancy is still quite controversial in the scientific community. In a 1990 book, Controversies in the Addiction's Field, an entire section concerned with the question "Should women be advised to abstain completely form alcohol during pregnancy?"\textsuperscript{15} One chapter, written by two of the leading researchers about fetal alcohol syndrome, Abel and Sokol, argued that "there are no known clinically important risks to the fetus from an occasional drink during pregnancy."\textsuperscript{16}

Why then did the researchers who testified at the hearings advocate abstinence during pregnancy? The reason most commonly given is, "since the uncertainty [about whether low levels of alcohol cause birth defects] exists, the best scientific approach is to say that you really should not drink at all during pregnancy"\textsuperscript{17} (emphasis added) Although eliminating a toxin altogether is the surest way to protect against harmful effects, this is not always the approach that science takes. For example, in the case of environmental exposure to carcinogens, standard scientific procedure is to arbitrarily define a level below which danger of harm is minimal. Generally the burden proof is to prove that a certain substance is dangerous at at a given level of exposure, rather than to prove that exposure is safe. Interestingly, although there was testimony during the 1988 hearing that "at any BAC (Blood Alcohol Content) above zero most commercial vehicle drivers would experience a degradation in skill that would increase the risk of crash involvement"\textsuperscript{18}, there is never a suggestion that all drivers should be urged to abstain from alcohol. These examples suggest that while we as a society are generally willing to accept some level of risk for other hazardous behaviors, the level is much lower where behavior during pregnancy is concerned.
Several reasons may contribute to the desire to protect fetuses from any risk. First is the idea that babies are entirely helpless and have no control over this damage. Second is the feeling that alcohol consumption is not generally beneficial and so should not be a sacrifice for a mother to give up. However, both of these arguments apply equally well to the, much more numerous, victims of alcohol related traffic accidents and yet the level of concern about traffic accidents is much less that of fetal alcohol effects.

VI. "The Number of Babies with Defects Won't Change"

Another contention of opponents of the warnings is that they will not be effective in decreasing the number of birth defects since they are unlikely to affect those people who are at the highest risk, that is alcoholics. Even if moderate use of alcohol does carry some increased risk, the vast majority of birth defects would still be due excessive drinking. Abel and Sokol make this argument powerfully, with the following vivid analogy:

When someone asked Willie Sutton why he robbed banks, he answered, 'That's where the money is. ..' The occasional or light drinker is like the nickle in the cookie jar. The real loot, in terms of preventing alcohol-related brain damage, isn't in the cookie jar--it's in the vault, in among the risk drinkers.19

The warnings do not target excessive drinking as a particular risk. As written, the warnings suggest that it is equally dangerous to drink 8 beers as it is to drink only one. As a result those people who are unable to quit drinking entirely during their pregnancy may take the attitude that it is not worth the effort to try to decrease their alcohol. In fact, the guilt about not being able to quit entirely may lead to increased depression and consequently increased alcohol consumption. Even if the warnings did emphasize the dangers of
heavy drinking, it is naive to believe that an alcoholic, who is likely experiencing many other adverse consequences of their addiction, will quit drinking because of a label warning. Therefore those people who are most likely to change their drinking behavior are those who are at the least risk. Interestingly, a 1989 study found that out of 737 women who were current drinkers only 45 reported that it was either "very likely" or "somewhat likely" that their drinking "would effect the health or development of any baby you might have." Significantly these 45 women were not in the heaviest drinking category. In fact, more than half of the women giving this answer reported drinking less often than once per month. This survey offers evidence that the warnings would not be effective in reducing the number of children born with defects since the people who would modify their behavior probably were not at risk.

Conclusion

Clearly, there was some opposition to the warning labels legislation, however, it was not discussed in much detail and has received little, if any public attention. Arguments that the warning is too small to be seen or that the public already knows about the dangers of alcohol consumption are easily countered by supporters of the warnings by suggesting ways to make the warnings more visible and manipulating the statistics about consumer knowledge. However, charges that the warnings are excessive and promote a unfounded belief in the publics mind that any alcohol is dangerous, or that the warning will not effect the number of birth defects since it does not target heavy drinkers, or that this warning could result in criminal charges against women for having babies with FAS, are much more disturbing. Clearly, we as a society, need to think through some of the adverse effects that could be
the result of this legislation. One question which has been hitherto unasked is how this legislation could impact on women and not just fetuses.


14 Ibid, p. 52

16 Ibid pg 158.

13 Alcohol Warning Labels, Op. Cit., p. 52


CHAPTER FOUR

Adverse Effects of the Alcohol Warning on Women

Despite the considerable attention given during the Congressional hearings to the protection of fetuses from alcohol related birth defects, the question of how this legislation would affect women was discussed only once. Senator Gore suggested that opponents of the legislation might argue that the warning would induce needless fear and guilt in a woman who had consumed alcohol before becoming aware she was pregnant. Dr. Sheila Blum, a proponent of the warnings, retorted that this argument "says, in effect, that women are too fragile to know the truth and we have to protect them from knowledge and information." If the scientific evidence had clearly established that even small amounts of alcohol is dangerous, then Dr. Blum would be right in considering it inappropriately paternalistic to protect women from that knowledge. But since the research is equivocal, it seems appropriate to consider what adverse effects warning about a possible teratogen might have on the status of women and their mental and physical health.

Confusing Statistics and Misstatements:

The confusion surrounding the "facts" about alcohol related birth defects has been substantial. Advocates of these warnings often claim that "alcohol is the leading preventable cause of birth defects" or that "alcohol is the third leading cause of mental retardation." What these allegations don't make clear is that most causes of birth defects, including mental retardation, are either "unpreventable" or unknown (alcohol is the third known cause of birth defects). It is crucially important to understand that maternal exposure
to drugs or chemicals (which includes alcohol, as only one of a long list of medical and illicit drugs) accounts only for about 1% of all birth defects! Of the other 99%, approximately 65-70% occur for no known reason, 20% are inherited, 5% are due to chromosomal mutations (such as Down's syndrome), 4% are due to maternal disease states (other than addiction) such as diabetes, 3% are due to exposure to an infectious agent such as Cytomegalovirus (CMV) or Rubella (German measles), and 1% are due to radiation. These distinctions are often blurred, leading to misstatements such as Senator Gore's assertion that alcohol is "the third leading cause of birth defects."

The idea that alcohol related birth defects may be preventable is often used to justify the amount of attention given them. But, realistically, many of the other causes of birth defects could also be regarded as preventable, e.g. infectious diseases or environmental toxins. For example, if everyone were vaccinated against the German Measles then the tragic Rubella Syndrome of blindness, deafness and heart defects could be eliminated. Similarly, much is made of mental retardation as the most devastating part of fetal alcohol syndrome. However, focusing on mental retardation due to a birth defect, ignores the much larger social problem of diminished IQs due to social/psychological deprivation implicit in poverty, inferior education, or dysfunctional families. One study on the effects of alcohol on the fetus found that even among women who drank more than 3 drinks a day, the strongest predictors of the IQ of their offspring were factors such as "maternal education", "paternal education", "mother-infant interaction", and "birth order," followed by alcohol consumption during pregnancy.

Another way the "facts" are manipulated to exaggerate the effects of alcohol is to use statistics about the number of children at risk for birth
defects. It is often cited that each year 40,000 children are born at risk for FAS. In actuality, only approximately 5,000 babies are born each year who have FAS. In fact, even that number may be unclear. A recent article in The Moderation Reader charged that these estimates of the number of children with FAS were "grossly overestimated." The author called the vital statistics department of each state and asked what the total number of births in the state were and how many cases of FAS had been reported. Even states such as California, which has a relatively sophisticated fetal dysfunction reporting system, report that approximately one in 10,000 babies are born with FAS; less than one tenth the estimates of 1-3 per 1,000 usually cited. Although there is undoubtedly some under-reporting, it is hard to believe that doctors don't diagnose or report 90% of all cases of FAS. The Moderation Reader is a publication sponsored by the alcoholic beverage industry, so these data must be interpreted with caution. They do, however, raise important questions about possible exaggeration of the extent of the problem, especially when considered alongside other misleading data.

One other area of confusion is the question of how likely it is that a woman who drinks heavily throughout her pregnancy will have a child with FAS. The public perception is that heavy alcohol consumption during pregnancy almost guarantees that a child will be born with birth defects. However, the scientific literature does not support this idea. Although some studies have suggested that as many as 30% of chronic alcoholics have babies with FAS, other larger studies have found that only about 3% give birth to babies with FAS. The misleading nature of these statistics has often resulted in misconceptions presented as fact in the press. For example, a 1991 article in the New York Times stated, "Babies born to mothers who drank large amounts of alcohol during pregnancy often exhibit fetal alcohol syndrome."
Such statements are patently untrue, yet they have become widely accepted by the general public.

In pointing out that alcohol exposure is only one of a vast number of causes of birth defects rather than a the major cause, as commonly believed, I do not wish to imply that it is insignificant. Clearly, it would be wonderful if we were able to reduce the number of babies with birth defects, not only for those children, but also for their families and for society as a whole. My purpose is to put the problem of alcohol related birth defects into a fuller perspective. In that way it is possible to assess the approach currently taken by the federal government without the crisis mentality that often surrounds such discussions.

The Rise in Fetal Rights

Society has a legitimate interest in the well being of fetuses/babies born in our country. If some kind of toxin were to become so prevalent as to cause widespread birth defects it would be a disaster—the kind that science fiction writers love to postulate. For our society to continue we must strive to ensure that our future generations are born healthy. That would be a vital first step in securing a productive future society; however, it is only a beginning. It is equally important to safeguard the physical and psychological well-being of each person after s/he is born. Pregnancy is a very unique and extraordinary time and public policy should reflect this. However, when formulating governmental policy it is crucial to consider the overall view of women and pregnancy that this policy reflects and promulgates, and how this policy might change our perceptions of motherhood and womanhood as well as the consequences it is likely to imply for women.
Why do these alcohol label warnings matter? What is wrong with encouraging women to "just say no" to alcohol during pregnancy? After all, alcohol is not something important to life, liberty, or the pursuit of happiness. My major concern is that the warning signs about the consumption of alcohol during pregnancy could facilitate a change in the way we conceptualize pregnancy and motherhood. When viewed in isolation, the warnings might not have a large effect on our national psyche. However, my concern is that they may both reflect and reinforce a more ominous change in women's rights relating to reproduction. Rising concern about women's drinking during pregnancy parallels increasing public anxiety that women are harming innocent babies in other ways such as by aborting unwanted fetuses or using crack cocaine during pregnancy. The warning may therefore reflect a changing societal emphasis on the maternal environment. But, it is more than just a reflection of this trend. By enhancing the general public impression that large numbers of women are harming babies, the warnings may change people's attitudes about how women should behave during pregnancy and about the necessity for external control of their behavior. To understand this argument, one must see these warnings in the context of other threats to women's freedom.

There are three major areas where the current movement to protect the fetus has limited women's freedom: 1) the erosion of abortion rights; 2) forced medical procedures on pregnant women to protect their fetuses; and 3) the criminalization of drug use by pregnant women. In the past 10 years, the Supreme Court has ruled that states were not obligated to pay even for medically necessary abortions, that states may require parental consent before an unmarried minor could have a medical abortion, and that states may require a minor to notify both of her parents before she can have an abortion.
In the Webster decision of 1989, the court allowed Missouri to prohibit public employees and hospitals from performing abortions; and it weakened the trimester system, which allowed women to have abortions until they were more than 6 months pregnant. These Court decisions reflect a tendency to value the potential life of a fetus very highly, even if it this undermines women's self-determination and liberty.

The issue of fetal rights has also arisen in the cases of forced medical procedures on women for what doctors think is in the best interest of the fetus. A 1989 article in the New England Journal of Medicine, reports that attempts to override material refusal of therapy have occurred in at least 26 states and that 46% of the heads of programs in maternal-fetal medicine thought that mothers who refused medical advice should be detained in the hospital to ensure compliance. The article cited 15 court orders forcing a woman to have a Cesarean section (C-Section), three orders for intrauterine transfusions, and three orders of hospital detention. Tellingly, in six of the 15 cases in which a C-Section was sought, the prediction of the danger to the fetus turned out to be inaccurate. In some instances the doctors had asked for C-Section because of a condition called placenta previa, in which the placenta blocks the baby's exit from the uterus, but the condition resolved itself spontaneously because the placenta shifted position before birth. In other cases the women disregarded the doctors instructions and did not return to the hospital. Nonetheless, they delivered healthy babies vaginally.8

Forced medical procedures exemplify the radical nature of the civil liberties at risk to women under the banner of fetal rights. In order to save the life of a fetus, women are forced to undergo dangerous medical procedures against their will. Not only does this endow the fetus with more rights than the mother, it also endows the fetus with more rights than a 5
year old child. Parents are not legally required to donate an organ or bone marrow, even if it would save the life of the child without causing them significant harm. Requiring pregnant women to undergo physically invasive medical procedures contrasts sharply with the Supreme court decision in Winston v. Lee (1985), where it was written that to surgically remove a bullet from a suspect's body against his will "implicates expectations of privacy and security of such magnitude that the intrusion may be 'unreasonable' even if likely to produce evidence of a crime". As pointed out in a Yale Law Journal article by Dawn Johnsen:

The fact that these prohibited attempts at intrusion have involved those over whom the state traditionally exerts a great deal of authority - criminal defendants and mental patients (in the case of refused drug therapy) -- suggest the radical nature of the fetal rights trend and its incompatibility with our heritage of civil liberties.9

Concern for the wellbeing of the fetus in these cases has resulted in gave intrusions into women's autonomy and bodily integrity.

The movement to criminalize drug use by pregnant women is the third major area in which protection of the fetus conflicts with women's liberty. There have recently been many cases, in almost every state, in which pregnant women have been arrested and jailed on charges of child abuse, delivering drugs to a minor, drug trafficking, and even manslaughter. In Washington D.C., a judge sentenced a pregnant woman to a prison term, rather than the usual probation, after she pled guilty to second degree theft, because her court ordered drug test was positive for cocaine. In announcing the sentence, the judge said, "I'm going to keep her locked up until the baby is born. She's apparently an addictive personality, and I'll be darned if I'm going to have a baby born that way." The judge also reported that "many of his colleagues. . .had similarly sentenced or otherwise incarcerated pregnant
drug abusers."¹⁰ The sentencing in this case did not reflect the crime this woman had been charged with. Because she was pregnant the judge dealt more harshly with her than he would a non-pregnant person. The tragedy of such sentencing is not only that it unfairly punishes women who are pregnant, but that it also does not promote the best interests of the fetus. As the woman in this case complained after the sentencing, "How the hell can you do the best for this baby if you're in jail?"¹¹ In another case, a 16 year old girl was held in secure detention for the sake of her fetus because she "tended to be on the run" and to "lack motivation or ability to seek prenatal care".¹² Clearly, the law is treating pregnant women differently from men or nonpregnant women who commit the same crimes.

Although drinking alcohol is legal, the perception that any consumption of it is dangerous to the fetus has already led to egregious infringements on women's rights. A Nevada woman who drank some beer before going into labor lost custody of her child because hospital workers smelled alcohol on her breath at the time of delivery.¹³ In order to get her child back she must prove herself a fit mother. In early January this year, a pregnant woman went to a hospital in Wyoming to be treated for injuries inflicted on her by her abusive husband. When she tested positive for alcohol, Ms. Pfannestiel was arrested in the hospital emergency room, jailed, and charged with criminal child abuse for endangering her fetus. Although the charge was dropped the next month, we might well worry that in the future other women will be penalized for drinking during pregnancy. In fact, some states are now considering bills making it a crime to drink "excessively" during pregnancy.¹⁴ Government warnings about the dangers of alcohol consumption by pregnant women may well contribute to the climate of
opinion in which such punitive legislation against women becomes acceptable.

**Regulations on Pregnant Behavior:**

Should government regulate a women's behavior during her pregnancy? The constitutional right to make decisions that affect the spheres of family, marriage and procreation was established in *Griswold V. Connecticut*. That decision struck down a law prohibiting the use of contraception on the grounds that such a law infringed on the right to privacy. Later cases expanded on this right to encompass a larger body of law that respects decisional privacy in matters of the family. Constitutional arguments aside, it is shocking to think of the possibility of the government telling a woman she shouldn't eat potato chips, relax in a hot tub, or fly on an airplane, because some experiments have found these might possibly damage a fetus, and fining her, or worse jailing her if she disobeyed. Such warnings have larger implications as well. If, for example, the government were to follow warnings about drinking with warnings about flying on an airplane, a company might exclude a pregnant women from upper management positions saying that those positions involved traveling by air. In fact, a company might seek to keep all fertile women (essentially all working women) out of these positions by claiming that a woman does not know she is pregnant in the first weeks, and so should never travel by air.

Government involvement in the mundane choices a woman's makes daily is not just a future possibility. During the alcohol warning hearings Senator Danforth stated that he "would like to get something underway so that pregnant women are told that there are certain things you should do and certain things you should not do if you want to produce healthy babies. Not
just alcohol, but also nutrition and the use of drugs, salt, whatever." There is clearly a growing feeling that the government should be intimately involved in telling a woman how to behave during pregnancy. Once a woman is forced to behave in accordance with what an outside agency decides is in her fetus's best interest, she has lost her right to privacy. Already, some employers have attempted to bar all women of reproductive age from workplaces in which they might be exposed to possible teratogens. A recent case, *UAW v. Johnson Controls*, which was upheld by all courts until the Supreme court involved a battery factory which sought to bar all fertile women (not just pregnant women) from relatively high paying jobs in which they would be exposed to lead because of the possible danger to potential fetuses. The Supreme Court overturned the lower courts decisions on the grounds that this policy was clearly in violation of the pregnancy clause of Title VII. This particular case was decided in favor of women's rights and not of fetal rights. However, although the justices were unanimous in concluding that this particular case was illegal, they differed on how future cases of this sort should be decided. Fetal protection polices present a threat to the economic well-being of women; they also have serious implications for their civil liberties, undermining women's rights in the name of fetal rights.

In addition to restrictions in the workplace, pregnant women have also been subject to greater and greater presumably well intentioned interference in their day to day activities. Earlier this year in Seattle, two waiters were fired after they tried to convince a pregnant woman that she should not have a daiquiri with her dinner. In addition to questioning her about her choice they also tore the warning label off a beer bottle and placed it on her plate. The two waiters became celebrities and were often complimented in the press on their integrity. In another case, a pregnant woman was told by the
employee of a health spa that she could not go into the hot tub without
written consent from her doctor. Even after she informed the employee that
she had previously discussed the issue with her physician who had advised
her that soaking for 10 minutes at a time should not have any adverse effects,
he refused to let her in. These reported cases of demeaning and juvenilizing
experiences, which pregnant women encounter in their daily lives, may be
just the tip of the iceberg. Because pregnant women are as influenced by
social norms as the rest of society, they are likely to accept as appropriate
reprimands or admonishments about their behavior during pregnancy and
not complain.

It is important to note that while the current medical and social trend
is to view many maternal behaviors, such as drinking, as detrimental to the
fetus's health, these views change rapidly and we cannot be sure that the
current vogue is absolute truth. In the last 15 years, recommendations that a
mother keep her weight down, take tranquilizers, drink in moderation, or
deliver under anesthesia have been completely reversed. In ten more years
we might find new evidence that reverses current thinking. Does it make
sense to urge women to comply with practices that may not stand the test of
time? Even if the current recommendations are eventually proven to be
justified, should a woman's right to privacy be violated because of the
possibility that her behavior might adversely affect her potential child? Since
at least two thirds of all serious alcoholics give birth to healthy babies,
drinking during pregnancy does not endanger the majority of fetuses. In
addition to maternal practices, many social factors such as limited access to
prenatal care and poor sanitation can also endanger the fetus. Indeed, aspects
of the environment may be more likely to cause birth defects than a mother's
individual actions. If we cannot prove that smoking (and not air pollution,
genetic disposition, etc.) causes an individual’s lung cancer, we cannot assert
with certainty that a baby’s defect is due to a particular action of his mother.

**Discrimination Against Women:**

Although signs warning women against drinking during pregnancy
are often viewed as helpful, or at least benign, public health measures, an
argument can be made that they are discriminatory. Joan Bertin, of the
American Civil Liberties Union Women’s Rights Projects compares these
signs to a hypothetical sign reading, "Warning: Blacks should not eat salt; it
increases the risks of hypertension." While it is true that blacks have a higher
rate of high blood pressure so may be advised to limit their salt intake, this
type of warning sign is not only a superficial and inadequate way to address
the problem, it is also condescending and discriminatory. Blacks are not the
only people who have hypertension, so why single them out? The same
arguments that can be made about the hypertension warning also apply to the
warnings about alcohol consumption during pregnancy. The behavior of
pregnant women is only one of a myriad of things, including paternal alcohol
consumption, that could adversely impact on the fetus, so why focus
exclusively on them? Like the Johnson Controls case, concerns about the
effects of maternal behavior on fetuses can impact not only on pregnant
women but on all women. The Surgeon General's warning targeted not only
pregnant women, but also all women *considering* pregnancy. At the very
least, the warnings are discriminatory because they focus solely on women's
behavior when men's behavior may be equally hazardous to the fetus; they
also limit options for all women of reproductive age.
Changes in the Perception of Women:

The warnings about alcohol consumption differ from the hypothetical warning about hypertension in one important way; the alcohol warning publicly asserts that women are dangerous to the health of others -- not just to themselves as in the case of hypertension. As such, they promote the idea that the most dangerous place for a baby is in the womb. The sweeping warnings about any alcohol consumption, whatever the amount, create the impression that many more children are being harmed than actually appears to be the case. In addition, misleading presentation of the "facts" suggests that the scope of the problem is much broader than it actually is. Yet another problem is the tone of moralism which these warnings introduce into the issue of maternal behavior during pregnancy. As pointed out in the first chapter, on the alcoholic beverage label only the warning concerning fetal alcohol effects uses the moralistic word "should." The use of such loaded words or phrases as "innocent babies" or "victims" further contribute to an impression of women as willful, cruel, and immoral, and a grave threat to their children's health. The fact is, however, that women have mostly borne healthy babies whom they have cared for and nurtured even in the most difficult of situations and at great sacrifice to themselves. Poor women often give birth without prenatal support or medical care and in unsanitary conditions, at great risk to themselves, seeking shelter and food for their children, with very little outside help. In so far as the warnings promote a negative image of women in the popular culture, they can have a very negative effect on women in general. If women are envisioned as dangerous and willful, it makes sense to try to control them in punitive ways, such as jailing them. Such negative attitudes towards women as mothers undercut
their position in society as a whole — women are seen as not competent to fill even their traditional role, as mothers, let alone other roles.

This type of warning also contributes to a changing image of women and mothers by conceptualizing the fetus and the mother as separable individuals with divergent valuations. The labels focus solely on the way drinking during pregnancy affects the fetus, rather than on how the combination of pregnancy and drinking affect the health of the mother and the fetus growing inside her. Conceptually pregnancy is a very complicated time. Are there two individuals, the fetus and the mother? Is the fetus just part of the mother? Does or should our view of the mother-fetus relationship change from one minute after conception to the time one minute before birth? The traditional definition of an individual used by social/political theorists such as Locke and Rousseau implies people who are independent of each other. Using this definition, neither the fetus or the mother is an individual. Since pregnancy is a time that is not well described by our usual definitions of individual personhood, choosing either conceptualization is somewhat arbitrary and should be examined for its long-term implications. Describing the mother and fetus in ways that make them seem completely separable promotes debate about whose rights are more important. This sharp distinction between the fetus and the mother also alienates the mother from the fetus and creates confusion in the medical profession about who is the patient — the mother or the fetus. To construct a healthy society, it seems preferable to conceive of the fetus and the mother as a composit being. This promotes more positive images of pregnancy. Campaigns could stress that pregnancy is a new start, and that pregnant women can take advantage of this special state to make their lives healthier and happier.
The fetal rights movement and the warning signs about women's behavior during pregnancy focuses the public eye on what doctors call the "maternal environment" objectifying women as the milieu in which the fetus lives. Katha Pollitt makes the point eloquently saying, "the worst thing about fetal rights is that it portrays a woman as having only contingent value. Her work, her health, her choices and needs and beliefs, can all be set aside in an instant, because next to maternity they are all perceived as trivial."17 The warning signs about the consumption of alcohol during pregnancy are a public reminder that a woman's role as mother is paramount. This equation of women with childbearing vessel is particularly disempowering when juxtaposed with the idea that women are not competent to make decisions regarding the fetus's health and need government and medical interventions to protect the fetus. Not only is the complexity of women's lives reduced to childbearing, but women are seen as not competent to fulfill this role.

The question arises of why scientific studies and research are being distorted and why women are portrayed as damaging their fetuses at this time. Is this a conspiracy of white males to keep women in their place? Clearly not. Many of the strong supporters of this type of legislation are women, many of the supporters of this legislation, such Senator Gore, are also supporters of other legislation designed to increase women's rights. However, our cultural biases do affect our perception of the urgency or validity of a particular problem. Perhaps, as a society, we are uneasy about women's newfound reproductive freedoms and increasing independence and, therefore, are predisposed to believe that women are abusing these powers.

Some Suggestions for Future Policies:
What, then, would be a more appropriate method of preventing the tragedy of infants born disabled because of the effect of alcohol exposure in utero? First, I believe that it is more useful to promote a idea of a mother and child union during pregnancy. Instead of fostering the impression that the fetus is completely separate from the mother, policies should try to depict the fetus as an extension of the mother. In this way we can work towards healthier lives for both mother and child. Campaigns that promote the idea of pregnancy as a new beginning can be used to help women who suffer from drug addiction or poor nutrition escape the cycle of their problems. More effort needs to be made to help women overcome their addiction to alcohol, by funding alcohol treatment programs and developing special programs that meet the need of women with families. Warning signs or labels are not an effective method of decreasing the number of children born with birth defects both because they have so little impact on those people at highest risk for having a child with birth defects, and for the other reasons mentioned in the previous chapter. Efforts to educate women about pregnancy should be carefully thought out so that the desired effect, i.e. decreasing the number of babies with birth defects, can be achieved, rather than frightening women who were unlikely to have babies with defects in the first place. However, if warning signs are to be used, it is imperative that they not over emphasize birth defects due to maternal drinking in relation to the other dangers of alcohol consumption. Furthermore, I believe that warnings focusing solely on women's behavior are discriminatory. Finally, all scientific research needs to be critically evaluated before being used as the basis for government policies. Any warnings that purported to be informational must reflect only that information which has been scientifically proven.
Because our society reacts to the issues of pregnancy and childbirth emotionally, public policy analysts must carefully and thoroughly consider how policies could affect women. In recent months there has been some recognition that perhaps the furor about the effects of drugs and alcohol on a developing fetus may have been excessive. Organizations such as the American Civil Liberties Union and the National Organization for Women have begun to oppose warning signs that focus solely on the effects of alcohol on the fetus and not on other adverse effects of alcohol on the ground that they are discriminatory. In addition, recent events, such as the firing of two waiters in Seattle for refusing to serve a pregnant woman a daiquiri, have forced many people to confront the issue of how women's freedoms are being eroded in the name of the fetus. It appears that the pendulum is beginning to swing back towards a more moderate approach. In keeping with this movement, the time has come to re-evaluate the wisdom, efficacy and scientific basis of warning women to abstain from alcohol throughout their pregnancies.


11Ibid, p. 419.


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