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did not reveal any significant effects. Douglass and Freedman's (1977) analyses of both fatal and non-fatal alcohol-related crash involvement for Michigan jurisdictions with consistently reported crash involvement data also found no significant effect of the lowered drinking age on drivers aged 16-17.

In short, the lowered drinking age did not have a demonstrable effect on alcohol-related crash involvement of underage drinkers. There is some evidence that the raised drinking age may be associated with reduced alcohol-related collsion involvement among 16-17 year old drivers. However, inconsistent results across the HBD and 3FS measures, and the signficant drop in non-alcohol-related crash involvement for the age group, indicate that one cannot unequivocably conclude that the raised drinking age caused reduced alcohol-related crash involvement among drivers aged 16-17.

The final hypothesis proposed in Section 2.4 was that the lowered legal drinking age had a greater effect on collision involvement than the raised drinking age. This hypothesis was not supported by the findings. Douglass and Freedman (1977:45) reported a 35 percent increase in total (i.e. fatal, injury, and property damage) HBD crash involvement, and a 17 percent increase in 3FS crash involvement among drivers aged 18-20 after the drinking age was lowered in 1972. The present research identified a 31 percent reduction in total HBD crash involvement and an 18 percent reduction in 3FS crash involvement among 18-20 year old drivers after the drinking age was raised in 1978. The magnitudes of the two estimated legal impacts were remarkably similar, with the raised drinking age from 18 to 21 apparently reversing the effect of the earlier reduction

of the legal age from 21 to 18.

Since alcohol consumption is the major intervening variable between changes in the legal drinking age and changes in alcohol-related crash involvement, the aggregate distribution of alcoholic beverages in Michigan was examined for 1969 through early 1980. Packaged beer sales were lower than expected in 1979, draught beer sales were higher than expected, and wine sales were down slightly from what one would have expected gi n the baseline trends. No conclusion as to the effect of the raised drinking age on beverage consumption could be made, however, because of several other factors that were likely to have influenced beverage sales in 1979, and because age-specific alcohol consumption data were not available.

6.2 Recommendations for Research

Age-specific impact assessments of the raised legal drinking age should be conducted. Analyses should be conducted of individual ages in addition to the 18-20 aggregation used in the current research. Although the costs involved in separate impact analyses of 18, 19, and 20 year old crash involved youth would be substantially greater than aggregated analyses, the increased precision of the results would be highly useful.

Evaluation of the raised legal drinking age should be repeated in two to four years. The present study has evaluated the initial effects of the change of Michigan's legal drinking age to 21 on traffic safety. The Michigan Department of Public Health, Office of Substance Abuse Services has previously sponsored research to assess the long term effects of the 1972 change to an 18 year old drinking age; such a commitment to

followup evaluation should be continued. It will not be known if the effects identified in this research are lasting or temporary if the present analyses are not replicated with data for a longer time period after the drinking age was raised.

Future analyses should focus on all alcohol-related crashes and not exclusively on fatal alcohol-related crashes. Reliance on fatal crashes as the principal dependent variable in an evaluation of a change in the legal drinking age is not advised. The problem with basing decisions solely on fatal accidents is that more than crash causation factors influence the distinction between any alcohol-related crash and a fatal alcohol-related crash. The proximity and quality of emergency medical care, seat-belt usage, crashworthiness of the vehicle, and other factors are as important as the causes of the crash in determining whether a crash is to be labeled "fatal." Many of the factors that determine whether a crash will be fatal are independent of crash causation, and therefore, add unnecessary variability to the data. The public health issue is not solely fatality production, i.e. mortality, but all alcohol-related crashes in which injuries have occurred (i.e., total alcohol-related traffic crash morbidity.

Reliable measures of alcohol-related crash frequencies should be used in future evaluations of the legal drinking age or other changes in alcohol availability. The subjectivity and unknown influences on officially reported "had been drinking" alcohol involvement in Michigan official crash records is not a problem that will soon be resolved for all levels of crash severity. Therefore, it is recommended

that in addition to officially reported alcohol involvement, alternative measures continue to be used as indicators of alcohol-related traffic crash involvement. In addition to the three-factor-surrogate measure used in the present study, separate analyses of weekend accidents, and separate analyses of accidents stratified by severity would provide additional insights into the effects of changes in alcohol availability on alcohol-related traffic safety problems.

The pre-driving drinking environment and drinking practices of youth should be investigated. Research on the drinking practices of youth, with an emphasis on behavioral patterns preceeding driving, should be conducted. These pre-driving drinking practices should be examined for location, social environment, peer structure, demographic, and other characteristics which would provide a better understanding of the linkages between drinking behavior and driving behavior. These studies could become the basis for future changes in alcohol-specific laws and policies, as well as other prevention program development.

6.3 Recommendations for Public Policy

Alcohol control policy and legislation has historically been used to accomplish many purposes. In addition to protecting the public health, these laws have been used to reflect social, moral, or political standards, to ensure a stable market for beverage alcohol, and to create mechanisms for governmental revenues. The domain of this research was

exclusively that of public health. Although other considerations enter into a determination of the minimum age at which alcoholic beverages can be legally purchased, the recommendations below are based solely on the public health implications of the research findings concerning the effect of the drinking age on alcohol-related motor vehicle crash involvement.

The legal drinking age at 21 should be sustained. Rarely in the field of public health is it possible to identify a legal or policy change which has a demonstrable effect on a major cause of morbidity. Few traffic safety prevention programs that have been evaluated scientifically have been found to have prevented significant numbers of alcohol-related traffic accidents among young drivers. The change in Michigan's legal drinking age in December, 1978 from 18 to 21 produced a significant improvement in the public health of 18-20 year old youth. This research has provided clear evidence that the higher legal drinking age has led to a significant reduction in alcohol-related traffic accidents among 18-20 year old drivers, while older drivers, during the same time period, experienced no changes or slightly increased frequency of alcohol-related traffic collisions. The higher drinking age can be considered a successful public health countermeasure against a leading cause of morbidity among youth. If the basis for a determination of the minimum age of purchase for alcoholic beverages is the public health consequences of alternative drinking ages, one must conclude that the 21 year old drinking age should be sustained. (1)

Other major changes in alcohol availability should be evaluated for public health effects. Since 1976 the Office of Substance Abuse Services has supported ongoing research on the relationships between

alcohol availability and alcohol-related social, health, and safety problems in Michigan. These studies have been concerned with the lowering and raising of the legal drinking age, licensing and regulatory activities of the Michigan Liquor Control Commission, and the variability of retail prices of alcoholic beverages. Governmental actions, either through administrative policy or regulatory changes, or legislation, frequently have direct implications for alcohol availability. For example, degregulation of distilled spirits prices, changes in state alcohol tax formulae, and zoning and other local ordinance modifications should be adequately evaluated regarding their consequences for alcohol-related morbidity and mortality. Research conducted since 1976 on the Michigan experience has revealed that modifications in alcohol availability were associated with changes in the incidence of acute alcohol-related problems. The Office of Substance Abuse Services is encouraged to continue to take advantage of opportunities to measure the effects of new legislation and regulations, and to use the results to guide the formulation of public policies designed to prevent alcohol abuse and other alcohol-related problems.

Notes to Chapter 6.0

1. The "protection of life and limb" was found by the courts to be the rational basis for the 1978 change in Michigan's legal drinking age (Guy, 1978:51).

APPENDIX A

BASELINE ARIMA TIME-SERIES MODEL ESTIMATION RESULTS

Table A.1 ARIMA Model Estimation Results for the Frequency of Had-been-drinking Crash Involvement Among 18 - 20 Year Old Drivers in Michigan

ESTIMATION SUMMARY — TERMINATION:SSQ CONVERGENCE

DIFFERENCING: 0
SEASONAL DIFFERENCING: 0
SEASONAL SPAN: 12
TRANSFORMATIONS: LOG

VARIABLE: 7
LABEL:HBD18.C
CASES: 1- 84
ADJUSTED SSQ:0.17684E+01

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	DELTA		0.10836E+01	0.94184E+00	0.39534E+00	0.14883E+01
2	AR	1	0.58276E+00	0.66178E+00	0.48458E+00	0.83898E+00
3	ARS	1	0.48603E+00	0.45476E+00	0.23770E+00	0.67182E+00

RESIDUAL AUTOCORRELATIONS:	CASES	DF	Q	SIG
	1- 84	17	0.19674E+02	.2912

1- 10	-0.17	0.09	0.23	-0.04	-0.02	0.12	0.07	0.02	-0.09	0.16
ST.E.	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12
11- 20	0.09	-0.10	0.25	-0.06	0.02	0.01	0.08	0.03	-0.01	0.06
ST.E.	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

PARAMETER CORRELATION MATRIX

	1	2	3
1	1.0000		
2	-0.7422	1.0000	
3	-0.4064	-0.2225	1.0000

Table A.2 ARIMA Model Estimation Results for the Frequency of Three-factor-surrogate Crash Involvement Among 16 - 17 Year Old Drivers in Michigan

ESTIMATION SUMMARY TERMINATION:SSQ CONVERGENCE

VARIABLE: 6
DIFFERENCING: 0 LABEL:F3S16.C
SEASONAL DIFFERENCING: 1 CASES: 1- 84
SEASONAL SPAN: 12 ADJUSTED SSQ:0.92260E+04
TRANSFORMATIONS: NONE

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	ARS	1	-.50000E+00	-.51592E+00	-.72211E+00	-.30974E+00

RESIDUAL AUTOCORRELATIONS:	CASES	DF	Q	SIG
	13- 84	19	0.19315E+02	.4360

1- 10	-0.21	0.13	-0.13	-0.01	-0.16	0.01	-0.10	0.10	-0.08	0.02
ST.E.	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13
11- 20	0.12	-0.17	0.03	-0.15	0.10	-0.19	0.05	-0.10	0.14	-0.06
ST.E.	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15

Table A.3 ARIMA Model Estimation Results for the Frequency of Had-been-drinking Crash Involvement Among 16 - 17 Year Old Drivers in Michigan

ESTIMATION SUMMARY TERMINATION:SSQ CONVERGENCE

VARIABLE: 4
DIFFERENCING: 3 LABEL:HBD16.C
SEASONAL DIFFERENCING: 0 CASES: 1- 84
SEASONAL SPAN: 12 ADJUSTED SSQ:0.66253E+04
TRANSFORMATIONS: NONE

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	DELTA		0.10000E+02	0.12397E+02	0.63849E+01	0.18410E+02
2	AR	1	0.60000E+00	0.49239E+00	0.28457E+00	0.70022E+00
3	ARS	1	0.52000E+00	0.38365E+00	0.14963E+00	0.61766E+00

RESIDUAL AUTOCORRELATIONS:	CASES	DF	Q	SIG
	1- 84	17	0.18068E+02	.3846

1- 10	-0.10	0.09	0.00	0.09	0.01	-0.08	0.05	0.07	-0.13	0.17
ST.E.	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12
11- 20	0.12	-0.05	0.18	0.10	0.11	-0.06	-0.01	0.14	-0.16	-0.09
ST.E.	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13

PARAMETER CORRELATION MATRIX

	1	2	3
1	1.0000		
2	-0.6207	1.0000	
3	-0.5223	-0.2809	1.0000

Table A.4 ARIMA Model Estimation Results for the Frequency of Had-not-been-drinking Crash Involvement Among 18 - 20 Year Old Drivers in Michigan

ESTIMATION SUMMARY TERMINATION:SSQ CONVERGENCE

VARIABLE: 17
DIFFERENCING: 0 LABEL:
SEASONAL DIFFERENCING: 0 CASES: 1- 84
SEASONAL SPAN: 12 ADJUSTED SSQ:0.17977E+07
TRANSFORMATIONS: NONE

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	DELTA		0.50000E+03	0.22194E+03	0.73791E+02	0.37008E+03
2	AR	1	0.51000E+00	0.40286E+00	0.19453E+00	0.61119E+00
3	ARS	1	0.64000E+00	0.70993E+00	0.54120E+00	0.87866E+00

RESIDUAL AUTOCORRELATIONS:	CASES 1- 84	DF 17	Q 0.16255E+02	SIG .5058

1- 10	0.02	-0.11	0.15	-0.03	0.05	0.00	-0.01	-0.00	-0.04	0.03
ST.E.	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
11- 20	0.14	-0.09	0.23	0.11	-0.21	0.03	-0.01	-0.07	0.09	-0.06
ST.E.	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13

PARAMETER CORRELATION MATRIX

	1	2	3
1	1.0000		
2	-0.5097	1.0000	
3	-0.0471	0.0028	1.0000

Table A.5 ARIMA Model Estimation Results for the Frequency of Had-not-been-drinking Crash Involvement Among 16 - 17 Year Old Drivers in Michigan

ESTIMATION SUMMARY — TERMINATION:SSQ CONVERGENCE

VARIABLE: 16
LABEL:
CASES: 1- 84
ADJUSTED SSQ:0.49940E+06

DIFFERENCING: 0
SEASONAL DIFFERENCING: 1
SEASONAL SPAN: 12
TRANSFORMATIONS: NONE

PARAMETER NUMBER	PARAMETER TYPE	PARAMETER ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	ARS	1	-.32000E+00	-.34091E+00	-.59865E+00	-.99183E-01

RESIDUAL AUTOCORRELATIONS: CASES 13- 84; DF 19; Q 0.17736E+02; SIG .5401

1- 10	0.14	0.19	0.25	0.12	0.09	0.04	0.00	-0.05	0.15	-0.08
ST.E.	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.14
11- 20	0.10	-0.07	0.15	0.07	-0.10	0.13	0.02	-0.02	0.07	-0.02
ST.E.	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14

Table A.6 ARIMA Model Estimation Results for the Frequency of Three-factor-surrogate Crash Involvement Among 21 - 24 Year Old Drivers in Michigan

ESTIMATION SUMMARY TERMINATION:SSQ CONVERGENCE

VARIABLE: 12
DIFFERENCING: 0 LABEL:
SEASONAL DIFFERENCING: 1 CASES: 1- 84
SEASONAL SPAN: 12 ADJUSTED SSQ:0.18505E+05
TRANSFORMATIONS: NONE

PARAMETER NUMBER	PARAMETER TYPE	PARAMETER ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	ARS	1	-.35000E+00	-.32470E+00	-.58333E+00	-.66067E-01

RESIDUAL AUTOCORRELATIONS:

	CASES	DF	Q	SIG
	13- 84	19	0.22834E+02	.2447

1- 10	0.07	0.22	0.07	-0.14	0.08	0.03	0.09	-0.02	0.10	-0.31
ST.E.	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13
11- 20	0.02	-0.17	-0.02	0.14	0.06	0.16	0.05	0.05	-0.15	0.13
ST.E.	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15

Table A.7 ARIMA Model Estimation Results for the Frequency of Had-been-drinking Crash Involvement Among 21 - 24 Year Old Drivers in Michigan

ESTIMATION SUMMARY — TERMINATION:SSQ CONVERGENCE

DIFFERENCING: 0
SEASONAL DIFFERENCING: 1
SEASONAL SPAN: 12
TRANSFORMATIONS: LOG

VARIABLE: 10
LABEL:HBD21.C
CASES: 1- 84
ADJUSTED SSQ:0.14857E+01

PARAMETER NUMBER	PARAMETER TYPE	PARAMETER ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	ARS	1	-.36000E+00	-.11481E+00	-.38183E+00	0.15221E+00

RESIDUAL AUTOCORRELATIONS: CASES 13- 84 — DF 19 — Q 0.16604E+02 — SIG .6167

1- 10	0.07	-0.08	0.13	0.12	0.03	0.02	0.18	0.13	0.06	0.03
ST.E.	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13
11- 20	0.09	-0.18	-0.09	0.15	-0.04	0.00	0.07	-0.09	-0.21	-0.07
ST.E.	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14

Table A.8 ARIMA Model Estimation Results for the Frequency of Three-factor-surrogate Crash Involvement Among 25 - 45 Year Old Drivers in Michigan

ESTIMATION SUMMARY TERMINATION:SSQ CONVERGENCE

VARIABLE: 15
DIFFERENCING: 0 LABEL:
SEASONAL DIFFERENCING: 1 CASES: 1- 84
SEASONAL SPAN: 12 ADJUSTED SSQ:0.46058E+05
TRANSFORMATIONS: NONE

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	AR	1	0.40000E+00	0.23972E+00	0.12306E-02	0.47822E+00
2	AR	2	0.20000E+00	0.24718E+00	0.92580E-03	0.49344E+00
3	ARS	1	-.46000E+00	-.50152E+00	-.73021E+00	-.27284E+00

RESIDUAL AUTOCORRELATIONS: CASES 13- 84 DF 17 Q 0.64431E+01 SIG .9897

1- 10	-0.06	-0.02	0.09	-0.04	-0.05	0.07	-0.00	-0.02	-0.05	0.00
ST.E.	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
11- 20	-0.00	-0.09	0.08	-0.05	0.06	-0.05	0.10	-0.12	-0.06	0.14
ST.E.	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13

PARAMETER CORRELATION MATRIX

	1	2	3
1	1.0000		
2	-0.2660	1.0000	
3	0.1551	-0.1275	1.0000

Table A.9 ARIMA Model Estimation Result for the Frequency of Had-been-drinking Crash Involvement Among 25 - 45 Year Old Drivers in Michigan

ESTIMATION SUMMARY — TERMINATION:SSQ CONVERGENCE

DIFFERENCING: 0
SEASONAL DIFFERENCING: 0
SEASONAL SPAN: 12
TRANSFORMATIONS: NONE

VARIABLE: 13
LABEL:
CASES: 1- 84
ADJUSTED SSQ:0.13607E+66

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	DELTA		0.15000E+03	0.70258E+02	0.21346E+02	0.11917E+03
2	AR	1	0.24000E+00	0.29701E+00	0.62508E-01	0.53152E+00
3	ARS	1	0.96000E+00	0.73547E+00	0.56430E+00	0.90664E+00

RESIDUAL AUTOCORRELATIONS:

CASES	DF	Q	SIG
1- 84	17	0.15027E+02	.5935

1- 10	-0.02	-0.08	0.25	-0.04	0.06	0.11	0.03	-0.01	0.12	0.18
ST.E.	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12
11- 20	-0.05	-0.13	0.03	0.13	-0.05	-0.04	0.03	-0.06	-0.02	0.06
ST.E.	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

PARAMETER CORRELATION MATRIX

	1	2	3
1	1.0000		
2	-0.4140	1.0000	
3	-0.0691	-0.0714	1.0000

Table A.10 ARIMA Model Estimation Results for the Frequency of Had-not-been-drinking Crash Involvement Among 21 - 24 Year Old Drivers in Michigan

ESTIMATION SUMMARY — TERMINATION:SSQ CONVERGENCE

DIFFERENCING:	0
SEASONAL DIFFERENCING:	0
SEASONAL SPAN:	12
TRANSFORMATIONS:	NONE
VARIABLE:	18
LABEL:	
CASES:	1- 84
ADJUSTED SSQ:	0.19648E+07

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	DELTA		0.30000E+03	0.21670E+03	0.80110E+02	0.35329E+03
2	AR	1	0.59000E+00	0.45309E+00	0.25095E+00	0.65522E+00
3	ARS	1	0.62060E+00	0.67301E+00	0.49428E+00	0.85173E+00

RESIDUAL AUTOCORRELATIONS:	CASES	DF	Q	SIG
	1- 84	17	0.13722E+02	.6867

1- 10	-0.00	-0.07	0.08	0.06	-0.02	-0.01	0.06	-0.08	0.03	0.04
ST.E.	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
11- 20	0.18	-0.07	0.29	0.07	-0.12	-0.03	-0.00	-0.04	0.01	-0.03
ST.E.	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13

PARAMETER CORRELATION MATRIX

	1	2	3
1	1.0000		
2	-0.5083	1.0000	
3	-0.7907	-0.0910	1.0000

Table A.11 ARIMA Model Estimation Results for the Frequency of Had-not-been-drinking Crash Involvement Among 25 - 45 Year Old Drivers in Michigan

ESTIMATION SUMMARY — TERMINATION:SSQ CONVERGENCE

VARIABLE: 19
DIFFERENCING: 0 — LABEL:
SEASONAL DIFFERENCING: 0 — CASES: 1- 84
SEASONAL SPAN: 12 — ADJUSTED SSQ:0.12356E+08
TRANSFORMATIONS: NONE

PARAMETER NUMBER	PARAMETER TYPE	ORDER	BEGINNING VALUE	ESTIMATED VALUE	95 PER CENT LOWER LIMIT	95 PER CENT UPPER LIMIT
1	DELTA		0.75000E+03	0.51644E+03	0.19635E+03	0.83654E+03
2	AR	1	0.64000E+00	0.47842E+00	0.27736E+00	0.67949E+00
3	ARS	1	0.63000E+00	0.66412E+00	0.47846E+00	0.84977E+00

RESIDUAL AUTOCORRELATIONS:	CASES	DF	Q	SIG
	1- 84	17	0.10607E+02	.3516

1- 10	-0.03	-0.02	0.06	0.07	-0.04	-0.01	0.00	-0.07	0.05	-0.01
ST.E.	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
11- 20	0.27	-0.11	0.30	0.12	-0.09	-0.09	0.00	-0.07	-0.01	-0.00
ST.E.	0.11	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13

PARAMETER CORRELATION MATRIX

	1	2	3
1	1.0000		
2	-0.4920	1.0000	
3	-0.7639	-0.1491	1.0000

APPENDIX B

DESIGN VALIDITY

DESIGN VALIDITY

There are numerous potential threats to the validity of the conclusions reached in the present investigation. These potential threats to the validity of conclusions can be categorized in a number of ways, the most popular being the dichotomization of internal and external validity originally presented by Campbell and Stanley (1966). However, the present discussion is structured after the more comprehensive discussion of validity presented in Cook and Campbell's (1979) recent volume. Cook and Campbell present four major categories of research design validity (A) statistical conclusion validity, (B) internal validity, (C) construct validity, and (D) external validity. Each of these types of validity is discussed below.

Statistical Conclusion Validity. Statistical conclusion validity is concerned with the possibility that random error and/or the inappropriate use of statistical tests may invalidate research conclusions. Statistical conclusion validity is essential to establish that there is in fact a true covariation between the operationalizations of the concepts under investigation. Since covariation is the most basic prerequisite for establishing a causal relationship, one must first establish a valid covariation or statistical relationship prior to conducting a causal analysis.

There are a variety of threats to statistical conclusion validity. First, inadequate power of the statistical tests used may invalidate one's conclusion that no covariation is present. This threat to statistical conclusion validity was minimized by a number of design

features in the present investigation. Since there is a direct relationship between sample size and power, a large number of observations over an extended period of time surrounding the intervention points was used in estimating the statistical relationships. Power is also increased by refraining from the use of very low levels of Type I error as the criterion for a statistically significant relationship, since power is directly related to the level of Type I error chosen.

Statistical conclusion validity was strengthened by the use of the most powerful statistical methods available that could be appropriately applied to the data. For this reason, the present study was designed to meet the requirements of the recently developed Box-Jenkins transfer function methods (Box and Tiao, 1975; Box and Jenkins, 1976).

Finally, statistical conclusion validity can often be substantially increased by explicitly taking into account in the data analyses all systematic components of the total variance in the dependent measures, and thus reduce the error variance. As is discussed in Section 3.4 on the data analysis methods, extensive effort was expended to identify all of the systematic components of the total variance in each dependent time-series prior to an assessment of the statistical significance or magnitude of the drinking age effects.

A second threat to statistical conclusion validity is the violation of the assumptions of the procedures used. This threat to validity was minimized by explicitly noting the assumptions accompanying the statistical procedures used, the robustness of the procedure to a violation of those assumptions, and an assessment of the extent to which the assumptions were violated. Further discussion of the assumptions

underlying the procedures used in this investigation, and an analysis of the extent to which the assumptions were met can be found in Section 3.4.

A third threat to statistical conclusion validity is the analysis of multiple tests. Examining multiple tests increases the probability of making a Type I error; that is, it increases the probability of falsely concluding that covariation exists. (1) This threat to validity can be avoided either by explicitly making adjustments in the critical significance levels (for example, using Bonferroni multiple t-tests; Dunn and Clark, 1974), or by concluding that true covariation exists only on the basis of a pattern of results rather than on the basis of one or two "significant" findings among a large number of tests conducted. In the present investigation, conclusions were made on the basis of the pattern of results over a number of tests, rather than one or two isolated statistically "significant" results.

A low level of reliability in the measures used constitutes a fourth threat to statistical conclusion validity. The result of low levels of reliability is an inflation of standard errors and a consequent reduction in the ability to detect covariations that may exist. In other words, low reliability reduces the power of the statistical procedures used. The main control over this threat in the present study was the use of aggregate outcome measures, rather than measures based on particular drivers, accidents, or data collection sub-systems (such as a single community or county). The impact of random irregularities over time in the data collection systems of particular local jurisdictions was minimized when the data were aggregated at the state level. The result of the statewide aggregation was the canceling out of numerous random

measurement errors occurring at the local level; consequently, the sytematic patterns in the series were more easily discernable in the aggregated data.

Low reliability in the implementation of the intervention is a fifth potential threat to statistical conclusion validity. If the intervention is not implemented in a uniform fashion, with a high degree of random error in the manner in which it is implemented from month to month, one is less likely to observe the true covariation that may be present between the intervention and the dependent series. Implementation unreliability was minimized as a threat to the validity of the present study because the interventions of interest, namely changes in the legal drinking age, were simply and clearly defined interventions. The major source of intervention implementation unreliability was the differential levels of enforcement of the drinking age across local jurisdictions and over time. Since adequate information on the nature of enforcement efforts was not available, variations in the level of enforcement could not be explicitly incorporated into the analyses. As a result, inconsistencies in enforcement efforts reduced the power of this investigation to detect effects of the drinking age changes.

The sixth threat to statistical conclusion validity is identified by Cook and Campbell (1979:44) as "random irrelevancies in the experimental setting." It is the random error in the observations due to all of the other influences upon the frequency of accidents that are not explicitly brought into the analyses. It should be noted that a large number of these other causes of crash frequency, although not explicitly identified, were controlled in the analyses by the specification of

systematic trend, seasonal, and other autocorrelation components present in the dependent variables. In addition to these systematic trend, seasonal, and autocorrelation components of the series that reflect causal influences, there was a random component in each series due to other omitted causal influences on the series. (2) The differential operation of these other factors across jurisidictions was controlled by using aggregate data across a large number of jurisdictions. As in any research, there always remains, however, a random component due to omitted causes of the phenomenon under study. This random error over time, along with other random error due to measurement and sampling error, provided the basis for an assessment of the statistical significance of the effects of the legal interventions.

The final threat to statistical conclusion validity identified by Cook and Campbell (1979:44) is "random heterogeneity of respondents," or, in other words, the random error associated with the sampling of subjects from the population of interest. Since the present research did not use a sample of fatal accidents, but rather a census of fatal collisions for the entire state, sampling error was not a threat to statistical conclusion validity in the analyses of the fatality variables.(3) Sampling error was present in the measures of traffic crash frequencies, which were based on a 20 percent random sample of all reported crashes. In the analyses of these variables, the sampling error was part of the total residual error used to assess the statistical signficance of intervention effects.

Internal Validity. After a high degree of statistical conclusion validity has been achieved, that is, after the existence of

covariation between operationalizations of the concepts of interest has been established, the question as to whether the covariation is plausibly indicative of a truly causal relationship has to be addressed. Establishing the causal nature of observed covariations between operationalizations is the domain of internal validity. There are a large number of potential threats to the internal validity of an investigation and each threat should be explicitly considered and ruled out as a plausible explanation of the observed covariation. Through the successive ruling out of potential alternative explanations for observed covariations, one's confidence in inferring a causal relationship on the basis of the observed covariation is strengthened. Although from an epistemological point of view one can never actually prove the existence of a causal relationship, demonstrating the implausibility of potential alternative explanations, for all practical purposes, functions to establish the causal hypothesis as true until it can be disproved by new evidence. For these reasons, as many potential alternative explanations for the observed relationships between the measure of beverge alcohol availability (i.e. the legal drinking age) and measures of motor vehicle accidents as possible were analyzed and dismissed as implausible explanations for the observed covariation.

The first potential alternative explanation of an observed relationship between legal drinking age changes and measures of accidents is that the proposed causal relationship is reversed, that is, changes in accident frequency bring about changes in the legal drinking age rahter than vice-versa. This threat to internal validity was ruled out in the present design by the time-ordered nature of the measurements. A cause

must precede in time its effects, and since the measures of the changes in the legal drinking age precede the measures of accidents, the argument that the causal relationship is reversed was discarded.

The second major threat to internal validity is history, a comtemporaneous event that may be the true cause of the observed effect. For example, one might argue that any downward shifts in accidents among Michigan youth after the raise in the legal drinking age in 1978 were due to the moderate gasoline shortage (and increased gasoline prices) of 1979, and the resultant drop in miles driven. Similarly, one might argue that a reduction in alcohol-related traffic accidents was due to reduced consumption of alcohol after Michigan's ban on non-returnable beverage containers caused a significant increase in the price of packaged beer.(4) Such explanations of observed shifts in the dependent series were ruled out by specific features in the research design. The use of quasi-control groups, consisting of the affected age group's older peers not affected by the drinking age interventions, permits an assessment of the validity of alternative explanations, of which the gasoline shortage and beverage price increases are two examples. Such contemporaneous historical events would most likely affect all age groups, not just the 18-20 year olds, and would therefore be seen in the accident measures for the comparison age groups.

Alternative historical events were also ruled out as explanations of a covariation between the interventions and the dependent variables by the fact that two interventions were examined, one of which was the reverse of the other. In such a situation any contemporaneous historical event that is suggested as an explanation of observed shifts

must op rate in opposite directions at different times, or two historical events must be postulated which operate in opposite directions. Since such multiple historical confounds were unlikely, the research design as here formulated was robust against contemporaneous history as a threat to internal validity. Moreover, the major event with known effects on crash frequency, the fuel shortage and related factors of early 1974, was explicitly controlled in the data analyses.

The third threat to internal validity is maturation, gradual devlopmental changes in the dependent variables simply due to the passage of time. The time-series design ruled out this threat by providing a series of observations prior to the intervention, permitting a determination of whether the post-intervention observations were simply the continuation of a pre-intervention maturational trend. It should be noted that a gradual trend in the dependent series can be attributed to maturational effects or to the effects of some omitted variables such as economic or population growth; in any case, observed trends in the dependent variable series were explicitly taken into account in the data analyses.

The testing threat to internal validity refers to the impact repeated testing may have on the system under investigation, and the possibility that testing effects may be the true cause of an observed relationship. This threat was eliminated in the present design by the unobtrusive nature of the measurement process. This is, the measurement process was an institutionalized feat re of the social system, rather than an artifact of the experimental situation. Secondly, this potential threat was minimized in the time-series design by the long

pre-intervention series which made it highly improbable that a testing effect would suddenly emerge at the point of the intervention.

The fifth potential threat to internal validity is instrumentation, a change in the measuring instrument occurring coincident with the intervention. That is, the process by which accident frequencies were measured may have changed at the same time point as the legal changes in the drinking age, and may account for any observed shifts in the series at the point of the legal changes. This argument was not a plausible alternative explanation of the proposed causal relationship for several reasons. First, the presence of comparision groups that would also have experienced basic changes in the measurement process ruled out instrumentation as a validity threat. Such changes in the measurement process cannot be used to explain the differential shifts in the frequency of accidents for the 18-20 age group as compared to the aged groups presumably unaffected by the legal drinking age changes. This threat to validity was also minimized by the analysis of two interventions, one the reversal of the other, since two instrumentation changes, causing opposite shifts in the dependent series, must be postulated. Finally, the threat was reduced simply by the time-series nature of the design. With a large number of observations over an extended period of time prior to the intervention, a substantial instrumentaion change exactly at the point of the intervention became less plausible. (5)

Statistical regression or regression to the mean is another often mentioned threat to internal validity. Regression to the maean occurs if an intervention is implemented exactly at a point at which the dependent series is at a very high or a very low point, since the

subsequent observation will tend to be closer to the mean of the series simply by chance, regardless of any intervention effect. For example, if the drinking age was raised at precisely the point in time when alcohol-related traffic accidents among youth were at their highest level in years, one would expect the level of accidents to fall somewhat after that unusually high point. Such a regression effect could be mistaken as the effect of the drinking age change. Such an argument was not a threat to the interval validity of the present design for several reasons. First, a long series of obsevations was available prior to the interventions, facilitating the determination of the atypicality of the observations immediately prior to the interventions. Second, and perhaps more important, the data analysis techniques used to assess shifts in the series were based on all of the observations in the series, rather than relying only on the observations immediately prior to and immediately after the interventions. Furthermore, the analysis methods took into account seasonality and autocorrelation regularities in the series, ensuring that the intervention effect identified was independent of effects due simply to the particular time points at which the interventions were implemented.

The seventh and eighth potential threats to internal validity are selection and mortality. That is, particular characteristics of the subjects selected for study, and particular characteristics of those subjects who drop out of the study, may invalidate the study results. One type of selection threat occurrs when differences in the kinds of subjects in the experimental and control groups account for differences in the post-intervention measures between the two groups, rather than an impact

of the intervention. This alternative explanation was not a threat in the present design because the criterion for establishing an intervention effect was not simply differences in the post-intervention observations between experimental and comparison groups, but rather differences in the shifts found within the experimental and the control dependent series. However, when intervention effects were assessed by examining shifts within each of the series, selection and mortality may have threatened internal validity if the composition of the experimental group changed substantially at the points at which the interventions were implemented, thus, providing a plausible alternative explanation of observed shifts in the series. The composition of the experimental group does change over time with the addition of new individuals who attain the age of 18 and dropping out of individuals who attain the age of 21. This change in the composition of the group, however, occurs gradually, with only a small proportion of the total experimental population changing from month to month. Furthermore, these changes in the composition of the experimental groups were primarily due to a stable aging process that cannot be influenced by the intervention or extraneous factors. Thus, it was highly implausible that the changes in the composition of experimental groups accounted for observed shifts in the dependent variables.

There are three threats to internal validity which involve the interaction with selection of particular threats already discussed. First, selection-maturation refers to a differential maturational trend across the experimental and control groups. This was not a threat to internal validity in the present design for the same reasons that the main effect of maturation was not a threat, namely, the long series of

observations available prior to the interventions, and the data analysis methods used, which explicitly took into account any maturational trends in each group's series of observations.

The second interaction threat to internal validity is the interaction of selection and history. It was possible that each of the experimental groups experienced a different "local" history, and this differentially experienced contemporaneous event was actually the cause of the shifts observed in the series concomitant with the drinking age interventions. For example, two contemporaneous events, the moderate gasoline shortage and price increases of 1979 and the ban on non-returnable beverage containers (increasing the cost of alcoholic beverages), may have had a differential impact on the various age groups. One could conceivably argue that both of these contemporaneous events had an influence upon youth that was not true for adults. Since youth may have less discretionary disposable income available, and since these contemporaneous events increased the cost of both driving and of drinking, the ban on non-returnable beverage containers and the 1979 fuel shortage/price increases may explain why there were reduced alcohol-related accidents for youth and no such shifts for older age cohorts during 1979. If it is true that the increased cost of fuel and alcoholic beverages influenced the drinking and driving patterns of youth more than the drinking and driving patterns of older cohorts, the major fuel shortage and price increases of early 1974 should also have had a greater impact on young drivers. However, the data analyses presented in Chapter 4.0 reveal that the 1974 fuel shortage/price increases did not affect young drivers more than older drivers. This finding reduced the

plausibility of the argument that the increased fuel prices of 1979 account for the larger reductions in accidents observed for young drivers than older drivers.

The final interaction with selection that is a potential threat to internal validity is selection-instrumentation. This threat could obtain if alterations in the procedures for the reporting of alcohol-related accidents occurred only for accidents involving youth. The instrumentaion change could then account for the shifts in accident frequencies specific to this age group. This threat to internal validity is the argument most frequently used by those who favor lower drinking ages, to discredit observed covariations between drinking age changes and the frequency of collisions among young drivers. The argument is that with a lowered legal age police officers are more vigilant in reporting the presence of alcohol in crashes involving young drivers, and conversely, officers report fewer crash-involved young drivers as "had been drinking" when a high drinking age is in effect. Although the extent of any such police reporting bias has not been documented, the selection-instrumentation challenge to internal validity was controlled through the use of the three factor surrogate measure of alcohol-related crashes as discussed in Section 3.2. It is highly unlikely that reporting of the driver's sex, the time of the crash, or the number of vehicles involved, would change at the time of the drinking age modifications, either for young drivers or for older cohorts.

Cook and Campbell (1979) also point out the potential threat to internal validity of the "diffusion or imitation of treatments," where there is contamination of the comparison groups as a result of their

experiencing a portion of the intervention. Diffusion of the interventions was possible in the present design for the 16-17 age group, since a major change in the level of availability of alcoholic beverages for the 18-20 age group indirectly changes the level of alcohol availability for the 16-17 age group, as discussed in Chapter 2.0. As a result, the interventions may have an impact on the 16-17 year old cohort as well as the focal 18-20 age group. The diffusion of the intervention to 16-17 year olds was no threat to the present investigation since other comparison groups (aged 21-24 and 25-45), whose levels of alcohol availability were not affected by the interventions, were included in the design. The effects of the drinking age changes on the 16-17 age group were directly assessed along with the impact upon 18-20 year olds.

The last three threats to internal validity are potential "reactive effects" of experimentation. The first reactive effect Cook and Campbell (1979:54) discuss is "compensatory equalization of treatments," which occurs when the providers of the treatment recognize that the control groups not receiving the treatment may feel discriminated against; as a result, the providers work to obtain a portion of the treatment for the control groups. In the present investigation, the older age cohort control groups were not affected by changes in the legal drinking age; regardless of whether the legal age was 18 or 21, those over 21 had alcoholic beverages legally available to them.

The second reactive effect potentially threatening internal validity is "compensatory rivalry by respondents receiving less desirable treatments" (Cook and Campbell, 1979:54), and refers to action taken by control group subjects to obtain a portion of the treatments (which are

perceived as being desirable). The third reactive threat is "resentful demoralization of respondents receiving less desirable treatments" (Cook and Campbell, 1979:54). This threat to internal validity occurs if the treatments are perceived as desirable and the no treatment control groups retaliate by lowering productivity or efforts, or otherwise distort the differences between treatment and control groups. These two effects were not threats to the internal validity of this investigation because the present study examined natural experiments that occurred as part of normal on-going policy-making processes in the State of Michigan, and thus were not subject to the reactive effects that are often present in artifically contrived experimentation, which is an atypical presence in the social system under investigation.

In summary, the goal in designing this research was to obtain valid conclusions as to whether changes in the availability of beverage alcohol, as represented by changes in the drinking age, caused substantial changes in alcohol-related accident frequencies. The first step was to establish that there was a true covariation between changes in availability and changes in accident frequency, achieved by assuring the statistical conclusion validity of observed shifts in the accident time-series. The second step was to rule out extraneous hypotheses, those other than the causal hypotheses under investigation, that could plausibly explain the covariations observed. The result was high internal validity and a high level of confidence that the covariation observed represents a causal relationship between the particular operationalizations of alcohol availability and alcohol-related accidents. The next validity issue was whether the causal relationship established between the particular

measures used was, in fact, indicative of a causal relationship between the broader constructs of interest, namely, alcohol availability and alcohol-related traffic accidents. The relationship between the operationalizations or measures used and the theoretical constructs of interest is in the domain of construct validity.

Construct Validity. Construct validity answers the question, given the established causal relationship between the operationalization used (i.e. high internal validity), do the operationalizations adequately reflect the concepts of interest? The first threat to construct validity is inadequate explication of constructs prior to their operationalization. Clear specification of the concepts of interest, as is found in Chapter 2.0, is an important aid for obtaining measures that are appropriate to the concepts under study.

The second threat to construct validity is labeled "mono-operation bias" by Cook and Campbell (1979:65). Mono-operation bias refers to the use of only a single operationalized measure of each concept. The use of single indicators prevents an assessment of convergent validity, that is, the extent to which different measures of the same concept produce the same result. Mono-operation bias was not a threat in the present design because multiple indicators of each concept were used. As discussed in Section 3.2, the traffic crash dependent variable measures include the frequency of police reported "had not been drinking" crash-involved drivers, the frequency of police reported accident-involved drivers where the driver "had been drinking," and an empirically derived three factor surrogate measure of alcohol-related accidents. Furthermore, two categories of crash involvement were

examined, the total frequency of crash involvement and the frequency of fatal crash involvement. The use of such multiple indicators of traffic accidents and alcohol-related traffic accidents permitted an assessment of convergent validity. The measure of the changes in alcohol availability was based on the effective date of the legal changes and was accepted as a valid measure on the basis of face validity, obviating the need for multiple indicators.

A threat to construct validity closely related to mono-operation bias is "mono-method bias" (Cook and Campbell, 1979:66). It refers to the reduction in construct validity that occurs if all the measures of a concept are based on the same data collection technique. The most difficult concept to measure in the present investigation, alcohol-related accidents, was measured using two methods. The "had been drinking" measure was based on the judgements of the investigating police officer, while the three factor surrogate was empirically constructed on the basis of objective information concerning the driver and circumstances surrounding the collision.

There are three theats to construct validity that are potential reactive effects of the experimental situation. The first threat occurs if the subjects within the various experimental conditions guess what the researcher's hypothesis is and act in such a manner to confirm (or disconfirm) that hyothesis. The second threat is "evaluation apprehension" (Cook and Campbell, 1979:67) on the part of the experimental subjects, where, as a result of the subjects' awareness of being evaluated, behave in a socially desirable manner. The third reactive effect that may threaten construct validity is the expectations of the

experimenter. If the experimenter's expectations are communicated to the subjects under investigation or those who collect data, distortions in the subjects' behavior or the data collected may result. All three of these potential threats to construct validity, resulting from reactive effects, were eliminated in the present investigation by the unobtrusive nature of the experiment. The experiment was a natural part of the social environment, not imposed on the social system by outside researchers, and thus was unlikely to create reactive effects. However, a form of the third threat, experimenter's expectations, could threaten construct validity if the expectations of police offficers, who are responsible for the collection of data on traffic accidents, influenced the reported frequencies of crashes. This threat was minimized by the use of measures that the police had little control over and thus were unlikely to be distorted by such subjective factors. The three factor surrogate measure of traffic fatalities, in particular, was virtually impossible to distort by police accident investigators.

Another threat to construct validity was somewhat obscurely labeled "confounding constructs and levels of constructs" by Cook and Campbell (1979:67). This source of invalidity occurs when there is implementation of only a small number of all possible levels of the intervention variable, and/or the measurement of only a subset of all possible levels of the outcome variable. Invalid conclusions may result if the effect (or lack of effect) observed is due to the fact that only particular levels of the intervention were administered, or only a portion of the potential range of the outcome variables were measured. This potential source of invalidity was minimized in the present design because

the measurement of the outcome variables was continuous and because the independent variable was a dichotomy (beverage alcohol legally available to an age group versus beverage alcohol not legally available to that age group). One could argue, however, that the concept of alcohol availability is continuous and the present design only examined two of many possible levels of alcohol availability. If one accepts this very reasonable argument, it must be noted that the two levels of availability examined were at widely divergent points of the availability continuum. Although a detailed examination of the pattern of impact of marginal changes in the availability of beverage alcohol was not possible, conclusions concerning the impact of a major change in availability upon motor vehicle accidents, the purpose of the present investigation, could be validly achieved.

The interaction of various interventions also could reduce construct validity. Since this study evaluated the impact of two interventions, any impact observed for the second intervention may only obtain when the second intervention is preceded by the first intervention. Thus one could argue that the effect of the second intervention, raising the drinking age, only occurs if raising the drinking age follows, by seven years, a drop in the legal drinking age. The threat that the two interventions may interact to produce the observed effects was avoided by the nature of the two interventions, one being the reverse of the other. Obviously, one expects a law establishing the legal drinking age at a particular age to have an effect of shifting the level of accident time-series only if the drinking age was something other than that age prior to the new law. The interaction of different drinking age

interventions, therefore, did not reduce construct validity because the two interventions were, in a sense, only one treatment, with the 1978 drinking age change simply the reversal of the 1972 intervention, restoring the drinking age to its pre-1972 level.

One type of interaction effect that cannot be controlled by the design is the interaction of the focal intervention, i.e. drinking age changes, with other planned or unplanned "interventions," such as changing economic conditions or the implementation of a ban on non-returnable beverage containers. Such factors may have interacted with the drinking age changes to produce shifts in crash frequency among youth and the only way to avoid invalid inference is cognizance of such confounding "interventions" when interpreting the results of the data analyses.

The last threat to the construct validity of the present investigation is the interaction of testing and the interventions, that is, the possibility that the intervention effects observed may only occur if there is pre-testing. The measurement of the outcome variables prior to the intervention implementation did not reduce design validity because the pre-testing utilized here was a continuous, institutionalized data collection system, rather than an artifact of the experimental situation.

External Validity. External validity answers the question, given that one can confidently conclude that there is a causal relationship between the focal constructs, to what extend is this causal relationship generalizable across persons, settings, and times? The first major threat to external validity is the interaction of selection and treatment. That is, the plausibly causal relationship that has been established may only apply to the particular atypical sample analyzed.

The selection of a target population of all accident involved youth in Michigan, with the analysis of a census of fatalities and a random sample of reported crashes, reduced this constraint on generalizability.

There are two major limitations on the populations to which the findings could safely be generalized. First, since the analyses were limited to the aggregate of all reported crash involved youth in Michigan, no generalizations could be made to particular subpopulations of Michigan youth. For example, without specific analyses of particular subgrous based on sociodemographic or social-psychological variables, one could not determine the differential impact of the changes in the legal availability of beverage alcohol upon particular types of youth. Although the overall impact was determined, this overall impact may be the result of differing impacts on particular subgroups of the total population of youth. Second, because the analyses were based solely on the Michigan population, the generalizability of the results was, strictly speaking, limited to the State of Michigan. It must be recognized that generalizing to other states is based on one's judgement as to the similarities betweeen those states and Michigan, rather then based on explicit features of the research design. (6)

The interaction of setting and treatment is the second basic threat to external validity. This limitation on generalizability occurs when the intervention effects observed are due to the implementation of the interventions in a particular socio-cultural setting. Since the present investigation assessed the effects of changing the legal drining age in only one socio-cultural setting, one cannotgeneralize the results to widely different states or countries. However, the experimental

setting was not substantially atypical of a number of industrialized states, and some generalization can plausibly be made, if it is done with caution, recognizing that one is generalizing by inference, not on the basis of explicit features of the research design.

The third major threat to external validity is the interaction of history and treatment. If intervention effects occur only under the particular historical circumstances present when the interventions were implemented, the generalizability of the findings are severely limited. The analysis of two interventions changing the legal availability of beverage alcohol at different time points, substantially reduced this threat to external validity. Since impact of a change in the drinking age in 1972 and the impact of another change in 1978 was examined, the plausibility of the argument that particular historical circumstances interacted with the intervention both in 1972 and 1978, bringing about both observed shifts, was greatly reduced. However, the drinking age changes were implemented in a particular historical period, and the extent to which similar results would occur during different time periods is unknown. For example, the Vietnam war, the draft, and associated youth protest activities of the late 1960s and early 1970s may have facilitated the move to a lower age of majority (including the drinking age). The movement to raise the drinking age may be affected by the frequently discussed conservative drift of the United States in the late 1970s. One can only speculate as to the effect of larger socio-historical developments on the interaction between drinking age public policy and motor vehicle accidents.

In summary, it is evident that a number of features of the

design of this investigation, such as (A) the appropriate use of powerful statistical procedures, (B) the use of long series of observations for multiple measures, (C) the analysis of multiple comparison groups, and (D) the examination of two policy interventions, one the reverse of the other, function to provide conclusions of high validity concerning the impact of changing the legal minimum drinking age on measures of motor vehicle accidents. The establishment of such causal relationships is among the most important goals of theory-oriented hypothesis-testing research and policy-oriented evaluation research. Identifying causal relationships allows one to move on to an assessment of the generalizability of the causal conclusion to broader concepts. The high levels of statistical conclusion validity and internal validity of this study facilitate the establishment of a causal relationship between changes in the legal availability of beverage alcohol, as measured by modifications in the drinking age, and traffic accidents, as measured by the frequency of collisions and fatalities. The levels of design validity for construct and (especially) external validity are somewhat lower, however, and broad generalizations to related concepts and other populations and settings should be made with care. It should be noted that, as Cook and Campbell (1979) pointed out, construct and external validity are, in the final analysis, matters of replication. Therefore, the replication of the present investigation in other states, using various measures of the concepts and using the powerful design and data analysis features used here, would strengthen the conclusion that there exists a general causal relationship between beverage alcohol availability and the frequency of alcohol-related accidents.

Notes to Appendix B

1. For example, if one sets the critical significance level at .05, one would expect to find five "significant" results in any 100 tests conducted, simply as a result of chance.

2. The major exogenous factor with a known impact on the frequency of crashes was the fuel shortage and national maximum legal speed limit reduction of early 1974. The effects of the fuel shortage/speed limit reduction were explicitly controlled in the data analyses assessing the effect of the drinking age changes.

3. Some may argue that without probability sampling from a defined population, any use of statistical testing is inappropriate. However, the model of statistical inference used here is an econometric or time-series model where the statistical significance of an intervention parameter was assessed by comparing its size with the size of the total random component in the dependent variable. The purpose of statistical inference in this investigation was to separate the systematic effects from the random component, not generalizations to specified population. For additional discussion of this issue see Berk and Brewer (1978).

4. The proposed ban on non-returnable soft drink and beer containers was submitted to and approved by the people of the State of Michigan at the general election held on November 2, 1976, and took effect on December 3, 1978 (Michigan Compiled Laws of 1970, Sections 445.571 through 445.576, as amended by Initiated Law of 1976, Section 2, and Public Acts of 1977, Number 270). Available evidence indicates that, after the effects of inflation were controlled, packaged beer prices increased by about 10 percent in the first year after the law took effect (Michigan State Legislature, 1979).

5. As was discussed in Section 3.2, variables characterized by major instrumentation changes (such as the had been drinking/had not been drinking measure in the late 1960s and early 1970s) were excluded from the analyses.

6. One important difference between states, potentially limiting generalizability, identified in previous research (Douglass, 1974), is the degree to which the state is isolated from contiguous states with different drinking ages. For example, a raised drinking age is likely to have less impact in a state with a long border with a state that retains a lower drinking age because young drinkers may drive to the neighboring state to obtain alcohol. Such a situation is an example of the operationalized measure, a legal change in the drinking age, not reflecting a major change in the construct of interest, alcohol availability. Since only a marginal change in alcohol availability occurs after a legal drinking age change in such circumstances, less effect on alcohol-related collisions might be expected.

REFERENCES

Bako, G., W. C. MacKenzie, and B. S. O. Smith. "The Effect of Legislated Lowering of the Drinking Age on Total Highway Accidents Among Young Drivers in Alberta, 1970-1972." Canadian Journal of Public Health, 67(2):161-163, March/April 1976.

Barsby, S. L. and G. L. Marshall. "Short-term Consumption Effects of a Lower Minimum Alcohol Purchasing Age." Journal of Studies on Alcohol, 38(9):1665-1679, 1977.

Berk, R. A. and M. Brewer. "Feet of Clay in Hobnail Boots: An Assessment of Statistical Inference in Applied Research." Pp. 190-214 in T. D. Cook et al. (eds.), Evaluation Studies Review Annual, Volume Three. Beverly Hills, California: Sage Publications, 1978.

Blane, H. T. "Middle-aged Alcoholics and Young Drinkers." Pp. 5-38 in H. T. Blane and M. E. Chafetz (eds.), Youth, Alcohol, and Social Policy. New York: Plenum Press, 1979.

Blane, H.T. and L. E. Hewitt. Alcohol and Youth: An Analysis of the Literature, 1960-1975. Report prepared for the National Institute on Alcohol Abuse and Alcoholism. Pittsburg, Pennsylvania: The University of Pennsylvania, 1977.

Bolger, J. A Study of the Legal Drinking Age Policy in Ontario. Toronto, Canada: Univsersity of Toronto, Center for Urban and Community Studies, 1979.

Bonnie, R. J. "Discouraging Unhealthy Personal Choices through Government Regulation: Some Thoughts About the Minimum Drinking Age." Pp. 39-58 in H. Wechsler (ed.), Minimum-Drinking-Age Laws. Lexington, Massachusetts: D. C. Heath and Co., 1980.

Borg, T. M., H. L. Michael, A. A. Gadallah, and G. K. Stafford. "Evaluation of the 55 MPH Speed Limit." Pp. 160-184 in D. G. Shurig (ed.), Proceedings of the 22nd Annual Road School, held at Purdue University, March 9-11, 1976.

Box, G. E. P. and G. M. Jenkins. Time Series Analysis: Forecasting and Control. San Francisco: Holden-Day, 1970.

_____. Time Series Analysis: Forecasting and Control, Revised Edition. San Francisco: Holden-Day, 1976.

Box, G. E. P. and D. A. Pierce. "Distribution of Residual Autocorrelations in Autoregressive-Integrated Moving Average Time Series Models." Journal of the American Statistical Association, 64:1509-1526, 1970.

Box, G. E. P. and G. C. Tiao. "Intervention Analysis with Applications to Economic and Environmental Problems." Journal of the American Statistical Association, 70(349):70-79, 1975.

Bowen, B. D. and M. R. Kagay. Report to the White House Conference on Youth: The Impact of Lowering the Age of Majority to 18. June, 1977.

Bruun, K., G. Edwards, M. Lumio and others. Alcohol Control Policies in Public Health Perspective. The Finnish Foundation for Alcohol Studies, Volume 25, 1975.

Burritt, B. E., A. Moghrabi, and J. S. Matthias. "An Analysis of the Relationships Between Accidents and the 55 MPH Speed Limit on the Arizona Highway System." Paper presented at the Transportation Research Board 55th Annual Meeting, Washington, D. C., January 19-23, 1975.

Cahalan, D. and R. Room. Problem Drinking Among American Men. New Brunswick, New Jersey: Rutgers Center for Alcohol Studies, 1974.

Cameron, T. "Alcohol and Traffic." Pp. 120-288 in M. Aarens et al. (eds.), Alcohol, Casualties and Crime. Berkeley: Social Research Group, School of Public Health, University of California, 1977.

Campbell, D. T. and J. C. Stanley. Experimental and Quasi-experimental Designs for Research. Chicago: Rand McNally, 1966.

Carpenter, J. F. "Traffic Fatalities and the Energy Crisis: Four Month Analysis, January-April 1974." Warren, Michigan: General Motors Technical Center, 1974.

_____. "Traffic Fatalities and the Energy Crisis: A Second Four Month Analysis, May-August 1974." Warren, Michigan: General Motors Technical Center, 1975.

Chafetz, M. E. Liquor: The Servant of Man. Boston: Little, Brown and Co., 1965.

Chafetz, M. E. and H. T. Blane. "High School Drinking Practices and Problems." Psychiatric Opinion, 16(3):17-19, March, 1979.

Chu, B. and G. E. Nunn. "An Analysis of the Decline in California Traffic Fatalities During the Energy Crisis." Accident Analysis and

Prevention, 8(3):145-150, 1976.

Cook, T. D. and D. T. Campbell. "The Design and Conduct of Quasi-experiments and True Experiments in Field Settings." Pp. 223-326 in M. Dunnette (ed.), Handbook of Industrial and Organizational Psychology. Skokie, Illinois: Rand McNally, 1976.

_____. Quasi-experimentation: Design and Analysis Issues for Field Settings. Chicago: Rand McNally, 1979.

Council, F. M., L. Pitts, M. Sadof, and O. K. Dart. An Examination of the Effects of the 55 MPH Speed Limit on North Carolina Accidents. Chapel Hill: University of North Carolina, Highway Safety Research Center, 1975.

Cucchiaro, S., J. Ferreira, Jr., and A. Sicherman. The Effect of the 18-year-old Drinking Age on Auto Accidents. Cambridge: Massachusetts Institute of Technology, Operations Research Center, 1974.

Dart, O. K. "Effects of the 88.5 km/h (55 mph) Speed Limit and Its Enforcement on Traffic Speeds and Accidents." Transportation Research Record, 643:23-32. 1977.

Detroit Free Press. "The Roll Call." Page 8A, July 9, 1980.

Distilled Spirits Council of the United States. "Public Attitudes Changing: Minimum Age Laws." DISCUS Newsletter, number 326, June/July, 1973.

_____. "Survey of Minimum Age Law Experience on Drinking/Driving." DISCUS Newsletter, number 330, December, 1973.

_____. "Teen Fatalities Rise After Minimum Age Hike." DISCUS Newsletter, number 386, December, 1979.

Douglass, R. L. The Effect of the Lower Legal Drinking Age on Youth Crash Involvement. Ph.D. dissertation, Public Health Administration (School of Public Health), Rackham School of Graduate Studies, The University of Michigan, 1974.

Douglass, R. L., L. D. Filkins, and F. A. Clark. The Effect of Lower Legal Drinking Ages on Youth Crash Involvement. Report prepared for the U. S. Department of Transportation, National Highway Traffic Safety Administration, Office of Alcohol Countermeasures. Ann Arbor: The University of Michigan, Highway Safety Research Institute, 1974.

Douglass, R. L. and J. A. Freedman. Alcohol-related Casualties and Alcohol Beverage Market Response to Beverage Alcohol Availability Policies in Michigan. Ann Arbor: The University

of Michigan, Highway Safety Research Institute, August, 1977.

Douglass, R. L., P. M. Barkey, A. C. Wagenaar and P. DeBiasi. Retail Price Distribution of Alcoholic Beverages for On-premise Consumption in Michigan. Report prepared for the Michigan Department of Public Health, Office of Substance Abuse Services. Ann Arbor: The University of Michigan, Highway Safety Research Institute, 1980.

Douglass, R.L., A.C. Wagenaar, and P.M. Barkey. Alcohol Availability, Consumption, and the Incidence of Alcohol-related Social and Health Problems in Michigan. Report prepared for the Michigan Department of Public Health, Office of Substance Abuse Services. Ann Arbor: The University of Michigan, Highway Safety Research Institute, May, 1979.

Draper, N. R., and H. Smith. Applied Regression Analysis. New York: John Wiley, 1966.

Dunn, O. J., and V. A. Clark. Applied Statistics: Analysis of Variance and Regression. New York: John Wiley, 1974.

Eshler, J. M. and Reynolds Metals. "Filtering of Fatal Accident Rates." Transportation Research Record, 643:10-12, 1977.

Ewing, J. A. and B. A. Rouse (eds.). Drinking: Alcohol in American Society--Issues and Current Research. Chicago: Nelson-Hall, 1978.

Farris, R., T. B. Malone, and H. Lilliefore. A Comparison of Alcohol Involvement in Exposed and Injured Drivers. Alexandria, Virginia: Essex Corporation, 1975.

Filkins, L. D., C. D. Clark, C. A. Rosenblatt, W. L. Carlson, M. W. Kerlan, and H. Manson. Alcohol Abuse and Traffic Safety: A Study of Fatalities, D. W. I. Offenders, Alcoholics, and Court-related Treatment Approaches. Ann Arbor: The University of Michigan, Highway Safety Research Institute, 1970.

Flora, J. D., L. D. Filkins, and C. P. Compton. Alcohol Involvement in Michigan Fatal Accidents: 1968-1974. Ann Arbor: The University of Michigan, Highway Safety Research Institute, March, 1978.

Flynn, L. Traffic Safety Effects of Fuel Shortages and Speed Limits, A Subject Bibliography. Washington, D. C.: National Highway Traffic Safety Administration, 1976.

Glass, G. V., V. L. Willson, and J. M. Gottman. [illegible] Time-series Experiments. Boulder, Colorado: Colorado Associated University Press, 1975.

Guttorp, P. and H. H. Song. "A Note on the Distribution of Alcohol Consumption." Drinking and Drug Practices Surveyor, 13:7-8, 1977.

_____. "A Note on the Distribution of Alcohol Consumption: A Rejoinder to Skog." Drinking and Drug Practices Surveyor, 14:6, 29-30, 1979.

Guy, Hon. Ralph, Jr. Opinion. Ref. Civil No. 8-73015 and Civil No. 8-73159, U. S. District Court, Eastern District of Michigan, Southern Division, Detroit, Michigan, December 22, 1978.

Hammond, R. L. "Legal Drinking at 18 or 21 - Does it Make Any Difference?" Journal of Alcohol and Drug Eduction, 18(3):9-13, Spring, 1973.

_____. "Legal Drinking at 18 or 21 - Does it Make Any Difference?" The Catalyst, 1(2):37-50, 1979.

Haugh, L. D., and G. E. P. Box. "Identification of Dynamic Regression (Distributed Lag) Models Connecting Two Time Series." Journal of the American Statistical Association, 72(357):121-130, 1977.

Hibbs, D. A. Jr. "On Analyzing the Effects of Policy Interventions: Box-Jenkins and Box-Tiao Versus Structural Equation Models." Pp. 137-179 in D. R. Heise, (ed.), Sociological Methodology 1977. San Francisco: Jossey-Bass, 1977.

Horton, D. "The Functions of Alcohol in Primitive Societies: A Cross-cultural Study. Quarterly Journal of Studies on Alcohol, 4:199-320, 1943.

Hurst, P. M. "Epidemiological Aspects of Alcohol in Driver Crashes and Citations." Journal of Safety Research, 5(3):130-148, 1973.

Illinois Department of Transportation, Division of Traffic Safety. Assessment of the Effect on Traffic Safety of Lowering the Legal Drinking Age in Illinois, November, 1977.

Institute for Research in Public Safety. Tri-level Study of the Causes of Traffic Accidents, Volume I, Research Findings. Bloomington: Indiana University, 1975.

Johnston, L. D., J. G. Bachman, and P. M. O'Malley. Drugs and the Class of '78: Behaviors, Attitudes, and Recent National Trends. Washington, D. C.: United States Government Printing Office, 1979a.

_____. 1979 Highlights. Drugs and the Nation's High School Students, Five Year National Trends. Washington, D. C.: United States Government Printing Office, 1979b.

Jones, R. K. and K. B. Joscelyn. Alcohol and Highway Safety: A Review of the State of Knowledge. Ann Arbor: The University of Michigan, Highway Safety Research Institute, 1978.

Kahane, C. J. Lower Speed Limits, Reduced Speeds, Fewer Deaths. Washington, D. C.: National Highway Traffic Safety Administration, Office of Statistics and Analysis (DOT HS 801 662), 1975.

Kendall, M. Time-series, Second Edition. New York: Hafner Press, 1976.

Klein, D. "Adolescent Driving as Deviant Behavior." Pp. 2-19 in P. F. Waller (ed.), The Young Drivers: Reckless or Unprepared? Chapel Hill: North Carolina Symposium on Highway Safety, Volume 5, Fall, 1971.

Klein, T. M., P. Levy, and R. B. Voas. Effect of the Fuel Crisis and the 55 MPH Limit on Fatalities in Utah. Washington, D. C.: National Highway Traffic Safety Administration, Office of Driver and Pedestrian Programs, Demonstration Evaluation Division (DOT HS 801 854), 1976.

Maisto, S. A. and J. V. Rachal. "Indications of the Relationship Among Adolescent Drinking Practices, Related Behaviors, and Drinking Age Laws." Pp. 155-176 in H. Wechsler (ed.), Minimum Drinking Age Laws. Lexington, Massachusetts: D. C. Heath and Co., 1980.

Makela, K. "Consumption Level and Cultural Drinking Patterns as Determinants of Alcohol Problems." Paper presented at the 30th International Congress on Alcoholism and Drug Dependence, September 9, 1972.

_____. "Level of Consumption and Social Consequences of Drinking." Pp. 303-348 in Y. Israel et al. (eds.), Research Advances in Alcohol and Drug Problems, Volume 4. New York: Plenum Press, 1978.

McFadden, M. and H. Wechsler. "Minimum Drinking Age Laws and Teenage Drinking." Psychiatric Opinion, 16(3):22-23, 26-28, March, 1979.

McCleary, R. and R. A. Hay, Jr. Applied Time Series Analysis for the Social Sciences. Beverly Hills, California: Sage Publications, 1980.

Michigan Council on Alcohol Problems. Micap Recap, number 35, August 14, 1973.

_____. Micap Recap, number 41, November 30, 1979.

_____. Micap Recap, number 8, June 17, 1980.

Michigan Licensed Beverage Association. "Critical Review of Effect of Age of Majority on Michigan Traffic Statistics." Correspondence to Chairperson, Governor's Task Force on Drinking Driver Problems. July 2, 1973.

Michigan State Legislature. Age of Majority Act of 1971. Michigan Public Acts of 1971, number 79. Lansing: State of Michigan, 1971.

_____. Michigan's Deposit Law: First Year, An Interim Report of the Special Joint Committee to Study the Impact of the Beverage Container Deposit Law, Senator Stephen Monsma, Chairperson. Lansing: State of Michigan, 1979.

Mosher, J. F. "The History of Youthful-Drinking Laws: Implications for Current Policy. Pp. 11-38 in H. Wechsler (ed.), Minimum Drinking Age Laws. Lexington, Massachusetts: D. C. Heath and Co., 1980.

Nelson, C. R. Applied Time Series Analysis for Managerial Forecasting. San Francisco: Holden-Day, 1973.

Noar, E. M. and R. D. Nashold. "Teenage Driver Fatalities Following Reduction in the Legal Drinking Age." Journal of Safety Research, 7(2):74-79, June, 1975.

National Clearinghouse for Alcohol Information. "Minimum Drinking Age." Alcohol Topics in Brief, Volume 1, number 4, May, 1976.

_____. "Minimum Drinking Age." Alcohol Topics in Brief, November, 1978.

National CSS, Incorporated. SPX/Time User's Guide. Norwalk, Connecticut, 1974

National Institute on Alcohol Abuse and Alcoholism. Third Special Report to the U. S. Congress on Alcohol and Health. Washington, D. C.: United States Government Printing Office, 1978.

National Safety Council. Accident Facts, 1979 Edition. Chicago: 1979.

O'Day, J., D. J. Minahan, and D. Golcomb. The Effects of the Energy Crisis and 55 MPH Speed Limit in Michigan. Ann Arbor: The University of Michigan, Highway Safety Research Institute, 1975.

Organization for Economic Cooperation and Development. Young Driver Accidents. Paris, France, 1975.

Parker, D. A. and M. S. Harman. "The Distribution of Consumption Model of Prevention of Alcohol Problems: A Critical Assessment." Journal of Studies on Alcohol, 39:377-399, 1978.

Pelz, D. C. and S. H. Schuman. "Motivational Factors in Crashes and Violations of Young Drivers." Presented at the American Public Health Association Annual Meeting, Minneapolis, Minnesota, October 13, 1971.

Perrine, M. W., J. A. Waller, and L. S. Harris. Alcohol and Highway Safety: Behavioral and Medical Aspects. Burlington: University of Vermont, 1971.

Plaut, T. Alcohol Problems: A Report to the Nation by the Cooperative Commission in the Study of Alcoholism. New York: Oxford University Press, 1967.

Popham, R. E., W. Schmidt, and J. deLint. "The Effects of Legal Restraint on Drinking." Pp. 579-626 in B. Kissin and H. Begleiter (eds.), The Biology of Alcoholism, Volume 4: Social Aspects of Alcoholism. New York: Plenum Press, 1976.

_____. "Government Control Measures to Prevent Hazardous Drinking." Pp. 239-266 in J. A. Ewing and B. A. Rouse (eds.), Drinking: Alcohol in American Society--Issues and Current Research. Chicago: Nelson-Hall, 1978.

Preusser, F. F., J. F. Oates, Jr., and M. S. Orban. Identification of Countermeasures for the Youth Crash Problem Related to Alcohol: Review of Existing Literature and Preliminary Hypotheses. Darrien, Connecticut: Dunlap and Associates, 1973.

Publicom, Incorportated. "Summary of the Report of the Committee to Study the Effects of Proposal D in Michigan." Lansing, Michigan, November, 1979.

Road Safety and Traffic Authority. The Effect of the Absolute Speed Limit of 100 km/h on Accidents in Victoria, Summary Report. Prepared fo the Office of Road Safety, Commonwealth Department of Transport, Victorica, Australia, 1978.

Room, R. "Evaluating the Effect of Drinking Laws on Drinking." Pp. 267-306 in J. A. Ewing and B. A. Rouse (eds.), Drinking: Alcohol in American Society--Issues and Current Research. Chicago: Nelson-Hall, 1973.

Rooney, J. F. and S. M. Schwartz. "The Effects of Minimum Drinking Age Laws Upon Adolescent Alcohol Use and Problems." Contemporary Drug Problems, 6:569-583, Winter, 1977.

Rouse, B. A. and J. A. Ewing. "An Overview of Drinking Behaviors and Social Policies." Pp. 339-482 in J. A. Ewing and B. A. Rouse (eds.), Drinking: Alcohol in American Society--Issues and Current Research. Chicago: Nelson-Hall, 1978.

Roy, M. B. and E. Greenblatt. "Driving Under the Influence of Liquor: Followup Study of Age, Sex, and Simultaneous Offenses." Boston: Commonwealth of Massachusetts, Office of Commissioner of Probation, November 27, 1979.

Schmidt, W. and A. Kornaczewski. "The Effect of Lowering the Legal Drinking Age in Ontario on Alcohol-related Motor Vehicle Accidents. Pp. 763-770 in Alcohol, Drugs, and Traffic Safety, Proceedings of the Sixth International Conference on Alcohol, Drugs, and Traffic Safety, Toronto, September 8-13, 1974. Toronto: Addiction Research Foundation, 1975.

Schmidt, W. and R. E. Popham. "The Single Distribution Theory of Alcohol Consumption: A Rejoinder to the Critique of Parker and Harman." Journal of Studies on Alcohol, 39:400-419, 1978.

Scott, P. P. and A. J. Barton. The Effects on Road Accident Rates of the Fuel Shortage of November 1973 and Consequent Legislation. Crowthorne, Berkshire, United Kingdom: Transport and Road Research Laboratory, Safety Department, Accident Investigation Division, 1976.

Seila, A. F., M. A. Entsminger, and C. Z. Silva. An Examination of the Effects of the Lowered Maximum Speed Limit and Fuel Shortages in North Carolina. Chapel Hill: University of North Carolina, Highway Safety Research Center, 1977.

Shattuck, D. and P. C. Whitehead. "Lowering the Drinking Age in Saskatchewan: The Effect on Collisions Among Young Drivers." Saskatchewan Department of Health, May, 1976.

Skog, O-J. "A Note on the Distribution of Alcohol Consumption: Gamma vs. Lognormal Distributions--A Reply to Guttorp and Song." Drinking and Drug Practices Surveyor, 14:3-6, 1979a.

_____, "The Distribution of Alcohol Consumption: A Further Reply to Guttorp and Song." Drinking and Drug Practices Surveyor, 15:23-34, 1979b.

Smart, R. G. "Changes in Alcoholic Beverage Sales After Reductions in the Legal Drinking Age." American Journal of Drug and Alcohol Abuse, 4(1):101-108, 1977.

_____, "Priorities in Minimizing Alcohol Problems Among Young People." Pp. 229-262 in H. T. Blane and M. E. Chafetz (eds.), Youth, Alcohol, and Social Policy. New York: Plenum Press, 1979.

Smart, R. G. and W. Schmidt. "Drinking and Problems From Drinking After a Reduction in the Minimum Drinking Age. British Journal of Addiction, 70(4):347-358, December, 1975.

Smart, R. G. and M. S. Goodstadt. "Effects of Reducing the Legal Alcohol-Purchasing Age on Drinking and Drinking Problems: A Review of Empirical Studies." Journal of Studies on Alcohol, 38(7):1313-1323, July, 1977.

Snyder, C. R. Alcohol and the Jews. New Brunswick, New Jersey: Rutgers Center of Alcohol Studies, 1958.

_____. "Culture and Jewish Sobriety: The Ingroup-outgroup Factor." Pp. 188-225 in D. J. Pittman and C. R. Snyder (eds.), Society, Culture, and Drinking Patterns. Carbondale, Illinois: Southern Illinois University Press, 1962.

Tofany, V. L. "Factors Contributing to the Reduction of Motor Vehicle Fatalities in 1974." Journal of Safety Research, 7(3):100-103, 1975.

Toomoth, J. B. The 50 M.P.H. Speed Limit. Wellington, New Zealand: Ministry of Transport, Road Transport Division, Traffic Research Section, 1975.

Treat, J. R. "Tri-level Study of Causes of Traffic Accidents: An Overview of Final Results." Pp. 391-403 in D. F. Huelke (ed.), Proceedings of the American Association for Automotive Medicine. Vancouver, British Columbia, September 15-17, 1977.

Ullman, A. D. "Sociocultural Backgrounds of Alcoholism." The Annals of the American Academy of Political and Social Science, 135:48-54, 1958.

United States Department of Transportation, National Highway Traffic Safety Administration, National Center for Statistics and Analysis. Fatal Accident Reporting System, 1977 Annual Report. Washington, D. C., 1977.

United States Department of Transportation, National Highway Traffic Safety Administration, Office of Driver and Pedestrian Programs, Enforcement and Emergency Services Division. 55 MPH Fact Book. Washington, D. C., 1976.

Vigderhous, G. "Forecasting Sociological Phenomena: Application of Box-Jenkins Methodology to Suicide Rates." Pp. 20-51 in K. F. Schuessler (ed.), Sociological Methodology 1978. San Francisco: Jossey-Bass, 1977.

Warren, R. A., H. M. Simpson, L. Page-Valin, and D. Collard. Point Zero Eight and the Change in Drinking Age: One Step Forward and Two Steps Backward? Ottawa, Ontario: Traffic Injury Research Foundation of Canada, 1977.

Wechsler, H. "Patterns of Alcohol Consumption Among the Young: High School, College, and General Population Studies." Pp. 39-58 in

H. T. Blane and M. E. Chafetz (eds.), Youth, Alcohol, and Social Policy. New York: Plenum Press, 1979.

Whitehead, P. C. Alcohol and Young Drivers: Impact and Implications of Lowering the Drinking Age. Ottawa, Ontario: Department of National Health and Welfare, Health Protection Branch, Non-medical Use of Drugs Directorate, Research Bureau, 1977.

Whitehead, P. C., J. Craig, N. Langford, C. MacArthur, B. Stanton, and R. G. Ferrence. "Collision Behavior of Young Drivers: Impact of the Change in the Age of Majority." Journal of Studies on Alcohol, 36(9):1208-1223, September 1975.

Wilkinson, R. The Prevention of Drinking Problems: Alcohol control and Cultural Influences. New York: Oxford University Press, 1970.

Williams, A. F., R. F. Rich, P. L. Zador, and L. S. Robertson. The Legal Minimum Drinking Age and Fatal Motor Vehicle Crashes. Washington, D. C.: Insurance Institute for Highway Safety, 1974.

Wiorkowski, J. J. and R. F. Heckard. "The Use of Time Series Analysis and Intervention Analysis to Assess the Effects of External Factors on Traffic Indices: A Case Study of the Effects of the Speed Limit Reduction and Energy Crisis in the State of Texas." Accident Analysis and Prevention, 9(4):229-247, December, 1977.

Wolfe, A. C. "Characteristics of Alcohol-impaired Drivers." Presented at the Society of Automotive Engineers, Automobile Engineering Meeting, Detroit, Michigan, October 13-17, 1975.

Wolfe, A. C. and M. M. Chapman. 1971 and 1972 ASAP Surveys: Washtenaw County High School Students. Ann Arbor: The University of Michigan, Highway Safety Research Institute, 1973a.

_____. "High School Student Drinking and Driving Behavior." Hit Lab Reports, 4(4):6-13. Ann Arbor: The University of Michigan, Highway Safety Research Institute, 1973b.

Works, D. A. "Statement on 18 Year Old Drinking." Journal of Alcohol and Drug Education, 18(3):14, 1973.

Zylman, R. "Age is More Important than Alcohol in the Collision Involvement of Young and Old Drivers." Journal of Traffic Safety, 20(1): 7-8, 34, 1972.

_____. "When it is Legal to Drink at 18: What Should We Expect?" Journal of Traffic Safety Education, 20(4):9-10, June, 1973.

_____. "Fatal Crashes Among Michigan Youth Following Reduction of Legal Drinking Age." Quarterly Journal of Studies on Alcohol,

35:283-286, 1974a.

_____. "A Critical Evaluation of the Literature on 'Alcohol Involvement' in Highway Deaths." Accident Analysis and Prevention, 6:163-204, February, 1974b.

_____. "When it Became Legal to Drink at 18 in Michigan: What Happened?" Journal of Traffic Safety Education, 21(3):15-16, April, 1974c.

_____. "Drinking and Driving After its Legal to Drink at 18: Is the Problem Real?" Journal of Alcohol and Drug Eduction, 20(1):48-52, Fall, 1974d.

_____, "Drinking and Driving After its Legal to Drink at 18." Police Chief, 41(11):18, 20-21, November, 1974e.

_____. "When it Became Legal to Drink at 18 in Massachusetts and Maine: What Happended?" Police Chief, 43(1):56-59, January, 1976a.

_____. "Collision Behavior of Young Drivers: Comment on the Study by Whitehead et al." Journal of Studies on Alcohol, 37(3):393-401, March, 1976b.

_____. "The Consequences of Lower Legal Drinking Ages on Alcohol-related Crash Involvement of Young People. Rebuttal to Dr. Richard Douglass." Journal of Traffic Safety Eduction, 24(2):13-15, January, 1977.

Zylman, R. and S. D. Bacon. "Police Records and Accidents Involving Alcohol." Quarterly Journal of Studies on Alcohol Supplement, 4:178-211, May, 1968.

COMMITTEE REPORT

HOUSE

FURTHER: JUDICIARY

2/4/81

(5)

Date: _____

Mr. Speaker:

The Committee on HEALTH, EDUCATION & SOCIAL SERVICES has had HB 113

"An Act authorizing marriages of limited duration."

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

[ ] do pass [ ] do not pass

[ ] do pass with attached amendments(s)

[ ] replace with CS for _____ [ ] same title [ ] new title

and recommends _____

[ ] AND attaches a "Letter of Intent" [ ] New Fiscal Note fiscal impact attached

[ ] reports it back without recommendation

[ ] referred to the _____ Committee

MEMBERS SIGNING
DO PASS

MEMBERS HAVING
OTHER RECOMMENDATIONS:

H Malone – No Rec

CHAIRMAN

H 60 (Rev. 12/78)

Testimony for

HB 113

~~Att~~ Brian Caldwell

Herl Berkowitz

John Reese

Surrogate

STAR

Mary Wheelock

Shirtalee Have

Hendel

Sherwyn

Morris

Beth Hazen
SRA Box 2095-B
99507

HB 113

9-9-81

Sent CC of HB 113, position paper news paper articles etc.

CM

Alaska State Legislature

House of Representatives

Committee on

Health, Education & Social Services

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811

March 23, 1982

AGENDA

HB 113	Marriages of limited duration
HB 497	Relating to bearing and adoption of children
HB 498	Relating to bearing children and the parent child relationship.
CSSB 89(R1)am	Amending the child protection laws.

Witnesses:

HB 113	Joan Brooks, Vital Statistics
HB 497/498	Joan Brooks
CSSB 89	John Pugh, Div. of Family & Youth Services
	Victor Krumm, Dept. of Law

Official Business

Alaska State Legislature

House of Representatives

Committee on

Health, Education & Social Services

Pouch V
State Capitol
Juneau, Alaska 99811

SECTIONAL ANALYSIS

House Bill 113: An Act authorizing marriages of limited duration.

Section 1 Findings and Purpose.
The traditional marriage has not met the needs or aspirations of many Alaskans and as a result many are living together out of wedlock. However, marriage imbues a man-woman relationship with special significance in the minds and hearts of most Alaskans. This bill allows persons who wish to deepen their commitment, but who are unable or unwilling to make a life-time commitment, to enter into a legally recognized relationship. In the event of nonrenewal of the marriage, the ugly consequences of divorce may be minimized. The Act does not intend to affect the validity of marriages of unlimited duration nor undermine their moral, social,or religious foundations.

Section 2 Marriage of Limited Duration.
A marriage entered into under this bill expires when agreed upon unless renewed. (25.05.372)

Agreement and Filing.
Parties to either a prospective or existing marriage may seek to provide for the expiration of their marriage. The agreement shall provide when the marriage expires and shall agree upon a method for property division. A license fee of $100 shall be collected. (25.05.373)

Renewal of Marriage.
The marriage of limited duration may be renewed by filing notice with the local registrar of vital statistics. (25.05.374).

Removal of Limitation
Parties to the marriage may remove the time limitation on the marriage by filing notice.

Section 3
The marriage expiration contract shall be filed with the certificate of marriage.

Section 4
The official issuing the marriage license shall attach to it any agreement subjecting the marriage to expiration.

Section 5
The marriage expiration agreement shall be filed with the local registrar together with the certificate of marriage.

Official Business

Alaska State Legislature

House of Representatives

Committee on

Health, Education & Social Services

Pouch V
State Capitol
Juneau, Alaska 99811

Sectional Analysis (cont'd)
HB 113

Section 6

Application for License.
Parties to a prospective marriage shall file the marriage expiration agreement with the marriage licensing officer together with the premarital certificate. (25.05.091).

Section 7

Custody of the Child.
Dispute over custody of children born of marriages of limited duration shall be resolved by the same procedures as those children born of marriages of unlimited duration (25.20.060).

Section 8

Marriages of limited duration are accorded the same status as other domestic relationships in relation to court orders pertaining to the "duty of support".

Number of unmarried couples living together way up since '70

By BRYCE NELSON
The Los Angeles Times

WASHINGTON — The number of unmarried couples living together tripled during the 1970s and the great majority of them were under 35, the Census Bureau reported Sunday.

The bureau's report, "Marital Status and Living Arrangements: March 1980," painted a picture of rapid and substantial change in the life styles of Americans during the 1970s.

It said a nationwide survey of 65,000 households last year also showed that:

• The number of children under 18 living with only one parent has increased sharply, from 11.9 percent of the nation's children in 1970 to 19.7 percent in 1980, mainly because of higher rates of divorce, separation and illegitimacy;

• The number of single-person households increased by 64 percent from 10.9 million in 1970 to 17.8 million in 1980. About 23 percent of U.S. households now consist of just one person;

• Much of the increase in such households is because three times as many persons under 35 lived alone in 1980 as in 1970;

• The age at which people marry continues to rise — the median age at first marriage for women rose from 20.8 years to 22.1 years during the 1970s, while the age for men rose from 23.2 to 24.6. The marriage age is now almost identical to what it was more than a half-century ago;

• Divorce continues to increase sharply. The ratio of divorced persons per 1,000 married persons living with spouses more than doubled — from 47 per 1,000 in 1970 to 100 per 1,000 in 1980;

• The divorce rate was much higher among blacks than among whites and Latinos. The ratio of divorced blacks to married blacks was 203 per 1,000, compared to 92 for whites and 94 for Latinos.

As for the growing tendency toward one-person households and toward unmarried couples living together, Arlene F. Saluter, a bureau demographic statistician and chief author of the report, said: "It seems to be a matter of greater acceptance of

women who lived in such households were under 35. In 20 percent of the cases, both partners were under 25. About 27 percent of those unmarried households contained children.

Those unmarried couples still represent a distinct minority, however, making up only about 2 percent of all households. The nation's 48 million married couples outnumber the unmarried couples by more than 30 to 1.

Among the reasons for the growing number of one-person households, Saluter said, are the increased number of women in the work force, the delayed marriage age, a rise in Americans' affluence, and a reduced tendency for single, older persons to move in with their families.

The sharp increase in the number of unmarried couples living together — from 523,000 in 1970 to 1.56 million in 1980 — is mainly because of a change in behavior among the young, according to the report. About 63 percent of the men and

Candy-powered car competes in long rally

The Associated Press

IRVINE, Calif. — A pickup truck is powered by a wood-burning stove, a small compact runs on sunflower oil and other vehicles burn "snickerbol," an alcohol fuel distilled from waste candy bars.

They were among the 38 cars and trucks that left the Orange County International Raceway Saturday in a cross-country competition where speed doesn't matter but fuel efficiency does.

Entrants in the Alternative Fuels Rally hope to cover 3,300 miles and wind up in Rochester, N.Y., in seven days.

Each car carries a meter to monitor how well it conserves what it's using for fuel. Along the way pit stops will be made at wood piles or "snickerbol" tanks, which will be filled with a fuel made from stale and otherwise unwanted candy bars.

Other cars will fill up on ethanol made from avacado pits, sweet potatoes and corn.

And some won't have to refuel at all. They'll be recharging on solar power and electricity.

Race organizer Joe Shepard has said he hopes the publicity from the rally will break through public apathy, and what he sees as oil company reluctance to become involved in non-fossil fuel sources, by showing that alternative fuels are available and practical.

"I think we (Americans) could be the Saudi Arabia of ethanol. It's the most American thing we could do," he said.

Each of the entrants put up a $200 fee to cover costs. Shepard contributed $25,000 in prize money for the winner.

Beirne makes a splash Outside

by Dave Carpenter
Times Juneau Bureau

Juneau — Rep. Mike Beirne's plan for trial marriages isn't catching on too well in the Legislature, but media from outside Alaska are having all kinds of fun with it.

In a session punctuated by dollar signs, the Anchorage Republican has grabbed his headlines on an issue of love, not money. And now he is becoming almost a regular on the television talk-show circuit.

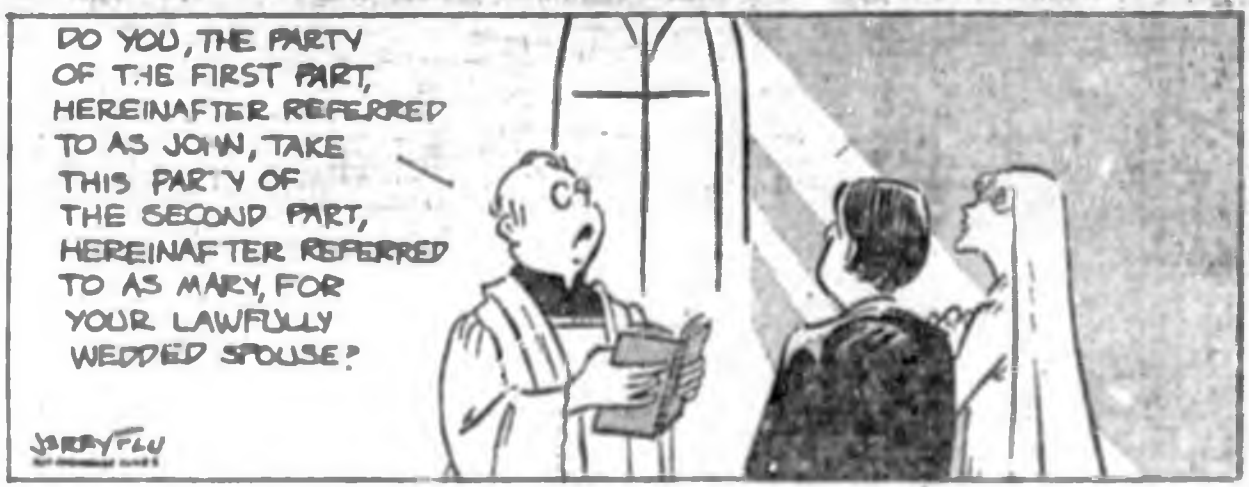
Beirne, who appeared on the Dinah Shore Show earlier this year, recently returned from a taping session in Chicago with Phil Donahue. There he went head-to-head with a Baptist minister on his proposal for limited-term marriages.

The segment is tentatively scheduled to be aired on Donahue's 10-minute program on the Today show Wednesday. The program, shown locally on Channel 2, begins at 7 a.m.

Mail and phone calls have flooded Beirne's office — from The Times of London, from a woman in New Jersey who claims she's been touting the idea for years, from religious groups who damn him as a sinner who will never get to heaven.

And other legislators report they've had dozens of letters on the subject, many of them from Fairbanks residents who for some reason are particulary opposed to it.

Beirne's idea is to make marriage a "continuous courtship" by having the partners sign a contract for a marriage of limited duration. At the end of the period — a minimum of one year — the couple could re-enlist for another hitch or go their separate ways.



The Anchorage legislator, who is separated from his wife, developed the idea after a conversation with friends a couple of years ago, questioning why marriage should bring courtship to an end.

He says the proposal is a first in legislative history anywhere. But there is a precedent for it, he says, in the Dead Sea Scrolls, which purportedly tell of the early Christian church sanctioning trial marriages for traveling workers.

Dead Sea Scrolls or no, the bill still sits in the House Judiciary Committee, where it was referred in early February. And it's not likely to surface until public hearings Beirne plans to hold in the interim.

"A lot of people think I'm doing this for fun and games, but people in my district had talked to me very seriously about the rising divorce rate in the nation," Beirne said.

When criticized for encouraging temporary marriages, as he was by his Baptist debate opponent, Beirne points out that a divorce rate approaching 50 percent means traditional marriage vows aren't exactly etched in cement either.

Besides, he says, it will not only strengthen the institution of marriage by providing extra incentives, it will lead to an increase in romance, and who's not for that?

"If you know the marriage is going to terminate a month from now, you're going to start bringing home flowers and start to work harder to make it work. Both sides are not going to postpone communications."

Trial marriage would be merely an option to the more traditional method of tying the knot.

If the Legislature ever passes Beirne's bill into law, there could be an interesting side effect. Lower 48 residents looking for a limited-term marriage might fly here in great numbers to proudly ink their new contracts, making Alaska, as Beirne puts it, the "marriage capital of the world."

The Anchorage Republican has been reluctant to make a lot of noise about his proposal in the Legislature this year, figuring it's an idea that has to cook for a couple of years before it's accepted.

He promises to be less quiet about it once the session ends, and in the meantime he's getting his share of attention for it Outside.

Beirne backs Moral Majority

Our Juneau bureau

JUNEAU — They may disagree with his pet bill on marriage, but Anchorage Rep. Mike Beirne says he's all behind the Moral Majority movement.

"In the long run, the Moral Majority people are going to strengthen the Republican Party," Beirne told a gathering of local GOP members Tuesday.

The Republican legislator conceded that recent in-roads the religious-oriented movement had made in Alaska Republican party caucuses resulted in the ousting of veteran party workers.

However, he said, "this new blood" would help attract more members to the party.

A bill Beirne has sponsored to allow marriages of limited duration provoked opposition from people who identified themselves as members of the Moral Majority movement, he said.

"But when I explained to some of them what the bill was about, they didn't think it was such a bad idea," Beirne said.

The legislation would give couples the option of ending their marriage on a certain date, or extending it, by contract. Although the bill has little or no chance of passing this year, it has gained Beirne national publicity.

Last week, he flew to Los Angeles for an appearance on the "Dinah Shore Show" to discuss the bill.

The syndicated show, which isn't seen in Alaska, is scheduled for national showing on April 1.

God and marriage

Editor:

Some people informed me that they read about a temporary marriage agreement proclaimed by Mike Beirne. I read the article, but received a different connotation. I received an announcement that a new God had made some new rules for the families of the future.

Sorry, I am too old (82) to change to a new God and my old one said, "What God hath joined together, let no man put asunder."

I pray that Rep. Beirne will find his place in life and it will not be in the government where he will have any influence upon young people. Were I to put forth such tragic statements concerning secret marriages, my knowledge of God's word would cause me to shake with fear.

Wayne Pasqoch
Wasilla

3-26-80

the Alaska Ear

QUESTIONS THAT NEED TO BE ASKED AT LEAST ONCE...Is it true that one Anchorage legislator has asked the legal staff in Juneau to research a bill that would allow a woman legally to carry and give birth to a child for a married couple? And does this have anything to do with the zany "contract marriage" idea suggested a month ago?...Is Ken Ott, former managing director of the Anchorage Performing Arts Center, now director of development for the Pasadena (Calif.) Playhouse? And what does a development director do for a playhouse?

Letters to the editor

Trial marriage bill

Dear Editor:

When the organization of the Moral Majority was announced and its purpose became known, there were some cries of protest, some even coming from the clergy of Anchorage, insinuating a violation of the separation of church and state on the church's part.

The violation is there all right, but as usual it is the state's. A prime example of the state meddling in church's affairs, is Rep. Mike Beirne's bill for trial marriages.

The precepts of marriage are found in the Holy Bible, not in the laws of the State of Alaska. Marriage is a Holy Sacrament and was instituted by God Almighty in the garden of Eden. Romans 7:2-3 declares that a marriage can be annulled by death only, not by the whim of some politicians. Jesus Christ said in Matthew 19:6, "What therefore God hath joined together, let no man put asunder."

I would think there is enough state business for Rep. Beirne to be involved with, without trying to legislate morality.

Gary Frackman
4913 Roger Drive

EDITORIAL PAGE

The Anchorage Times
Page A-6 Wednesday, March 5, 1980

What others say

From The Southeast Alaska Empire, Juneau

REP. MIKE Beirne's HB 678 is intended to strengthen the institution of marriage. We believe it has missed the mark. In fact, to continue in the sports vein, it missed the ballpark. Institutions are just that. They cannot and should not be changed by the stroke of a legislator's pen. And even if they could, marriage is about the last institution a legislature should meddle in.

We have every faith that the legislature will give HB 678 the inattention it deserves.

If trial marriages make proven industry, what the heck?

suzan nightingale

I've been thinking about Mike Beirne's trial marriage bill. Maybe I was too harsh.

After all, things are tight these days, and it could be just the shot in the arm our tired Alaska economy needs. A cottage, if not a chapel, industry.

From the first commitment to the final ceremony, it could open whole new vistas of employment.

Start with the invitations. It would be absolutely imperative for the guests to know exactly how long the cautious couple plans to stay together in order to choose appropriate wedding gifts. This means Alaska's printers would have to come up with some form of color coding, maybe with little stars in the corner, to illustrate the exact degree of emotional — and to the R.S.V.P.er, financial — involvement. Such enterprise could go a long way in preventing misguided guests from presenting silver tea set gifts to a Dixie Cup couple.

Then there is the wedding gown itself. Here, too, color coding could come into play, perhaps with tastefully-decorated disposable frocks for brides of less than one year. Maybe a rental agency is called for.

And then there's the pastry industry. You just can't have a little bride and groom on top of a wedding cake for a trial marriage. I mean, a little respect for tradition, PLEASE. But a little calendar, held open to the appropriate cancellation date by little sugar love birds, would be nice. Or maybe a little hour glass, sprinkling white sugar all over the top of the cake, would work.

But all this is small fish to fry when you look at the real potential of this trial marriage bill — tourism. We could make Reno look like a retirement community by comparison.

Imagine star-crossed (but cautious) lovers, jetting in from the Lower 48 to do their thing in The Church of What's Happenin' Now wedding chapel. With an amendment here and a loophole there, we could even make it so they have to come back to sign papers when it's all over, thus ensuring that return trade we're always hearing about.

No, I can see I was much too harsh on this piece of legislation. This trial marriage bill is a real sleeper, so to speak.

I mean, really, what newlywed could resist it? "Alaska, Wedding Capital of the World: Where The Nights Are Six Months Long!"

Anch Daily News
C-1
Feb 11-80

Beirne: Bill could 'strengthen' marriage

By LAURA ZAHN
Empire Staff Reporter

Anchorage Rep. Mike Beirne, who Tuesday introduced legislation to legalize "marriages of limited duration," said he thinks his bill will help strengthen the institution of marriage.

Under House Bill 678, couples could file a written agreement with their marriage license, stating the number of years for which they wish to be married. If the agreement is not renewed with the court, the marriage will automatically dissolve on the specified date.

The bill is designed to allow persons "who, for various reasons, are unwilling or unable to make a lifetime commitment" to enter into an alternative to traditional marriage.

"This will strengthen the institution of marriage because you have to make positive affirmation of the marriage on a periodic basis," Beirne said in an interview Tuesday.

"I think this would conform very nicely with what churches have been preaching for years — reassessment of the marriage and renewing of vows."

While Beirne said he is being accused of "trying to legalize the weekend tryst," he claims his bill will, instead, provide a way out of morally objectionable situations.

"It's encouraged as an alternative to 'living in sin' to marry," he said. Cohabitation, already legal in the state, is practiced by "a substantial percentage (of Alaskans) and growing."

Because of the changing population and young age of the majority, "this is the best state in the union to try this idea out." It is also the only state to consider doing so, he said.

"It will strengthen a weakening institution by legally weakening it but making it spiritually stronger," Beirne said.

The key, he claims, is the written agreement, which costs $100 to be filed with the marriage license. No attorney is necessary to help fill out the form provided by the state.

In the agreement, the couple would specify the number of years they wished to be married, and who would get what income and articles should the marriage not be renewed.

Child custody could be stipulated in the agreement, but if a dispute arises, it must be settled by the court, as in divorce.

Beirne said his idea puts a "burden of proof" on the couple who wants to stay together, forcing them to take action to keep the marriage in existence — literally. Without action, it would expire.

"Always before, you had to fight your way out," he said. "There are lots of people who are living together who don't want to be," but they do so because of the "until death do us part" beliefs or because of the "hassle" of divorce.

An expirable marriage would force couples to think about terms of the agreement.

How will future treat marriage?

ABOUT MARRIAGE

by Lee W. Stratman

I recall back in my junior high school days running through my neighborhood and Mrs. Blatt, the mayor's wife, hailing me from her back porch. "Come here," she said. "I have a little miracle for you."

When I approached my queen-sized neighbor she had in her hand a paper napkin wrapped around an ice cube. It was the first home refrigerator ice cube I had ever seen. I was familiar with the 10-, 25- and 50-pound blocks which the iceman brought over his shoulder. But an ice cube manufactured in your own kitchen — that was different.

I was ushered into the Blatts' kitchen and there was a large white chest with a kind of bird cage on top. Mrs. Blatt showed me the ice cube trays and even suggested that ice cream could also be made therein.

Mrs. Blatt used the occasion to act as a prophetess. The time would come, she said, when all homes would have a refrigerator and ice cubes and even frozen food.

I don't prophesy about ice cubes or frozen foods, but I sometimes like to lie back in my chair and think about marriages of the future — say about the year 2000.

I hope the future brings formal education for marriage, with courses not only about sexual relationships but also about conducting family business, communication, roles of spouses, child care, and other such important things.

I hope that in the future a license to marry will require more than vital statistics and a blood test for syphilis. I hope there will be, as technology proceeds, a complete screening for genetic difficulties and possible birth defects. I hope there will also be a real physical examination of parts involved in child bearing.

If the world keeps a-crowding, there may also be a license to have a child or children. Most sociologists see more governmental control coming. The good breeding stock will be licensed to multiply and replenish the few available spots on the earth. Who will determine who is the best breeding stock will have to be decided. Chances are good it will be a committee and its deliberations will take years, judging by the way bureaucracy is going in this era.

In the future, more couples will elect not to have children, as we see even now. I believe it is a good trend because it means that only those who wish to work with children will have them. Those who do choose children should have extensive parent education. High school or college classes should equip persons to make decisions about breast or bottle feeding, how to discipline the little nippers and how to furnish them with an ethical sense.

In the future it will also be more acceptable for persons to remain single and not marry. Back in the bygone days of 1940 I remember how Aunt Laura was a curiosity because she never married. People suggested that there was something wrong with her disposition and referred to her as an Old Maid. There was an idea in that time that marriage was natural and the single life unnatural; thank heavens we have gotten over that myth.

I suspect that priorities of married couples in the future will also be different. It appears that the one family dwelling — usually a first acquisition — may not be accessible to the rank and file. The apartment, the condominium and perhaps some new housing unit may be the way to go as prices for individual homes skyrocket.

If persons remain as mobile as they are and pleasure trips continue to increase in price with escalating oil costs, some substitute is going to have to be found for the extended family. Grandpas and Grandmas are too far away to care for skinned knees and education in chess or checkers. I have always felt the church ought to provide surrogate aunts, uncles, grandmothers and grandfathers for our children when they are young.

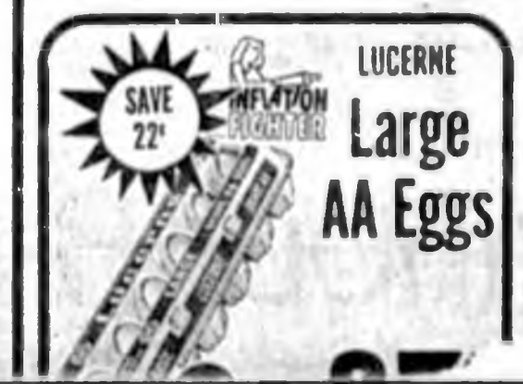
Will marriage continue to exist in 2000? I firmly believe it will, although it will continue to change.

I believe people will want more intimate marriages with partners who will communicate and offer emotional support. The strong silent husband will be as extinct as the Dodo bird by the year the new millennium begins.

Some authorities believe there will be a 3- to 5-year trial marriage in the future. I find it hard to conceive that a temporary relationship can prepare one for a permanent one but there would be some merit in knowing each other well before consummating marriage.

To you who are now being born and will be marrying in the first decade that comes after the year 2,000: may you find marriage, in whatever form, as rich and satisfying as some of us did in the olden days when more was left to chance, love and romance.

Lee W. Stratman is a pastoral counselor who has been working with marriages and families in Alaska for more than 20 years. Readers may write to him at The Anchorage Times, P.O. Box 40, Anchorage 99510.



Temporizing on marriage

Reprinted from The Seattle Times

ALASKA REPUBLICAN State Representative Mike Beirne may be serious when he suggests that trial marriages might make couples look at that institution more realistically. But the venerable institution seems to be having a hard enough time surviving without further temporizing about it.

Beirne suggests that Alaska couples be allowed to enter a marriage contract which has an expiration date. When the contract expires, the couple may go their separate ways or renew.

Part of the problem is figuring out how long the contract should last. For some couples, a day together may be too long. Others, committed to making a marriage work, may need several years.

HOW DOES BEIRNE intend to prevent temporary marriage from becoming a useful tool to thwart the tax collector, or circumvent alien quotas?

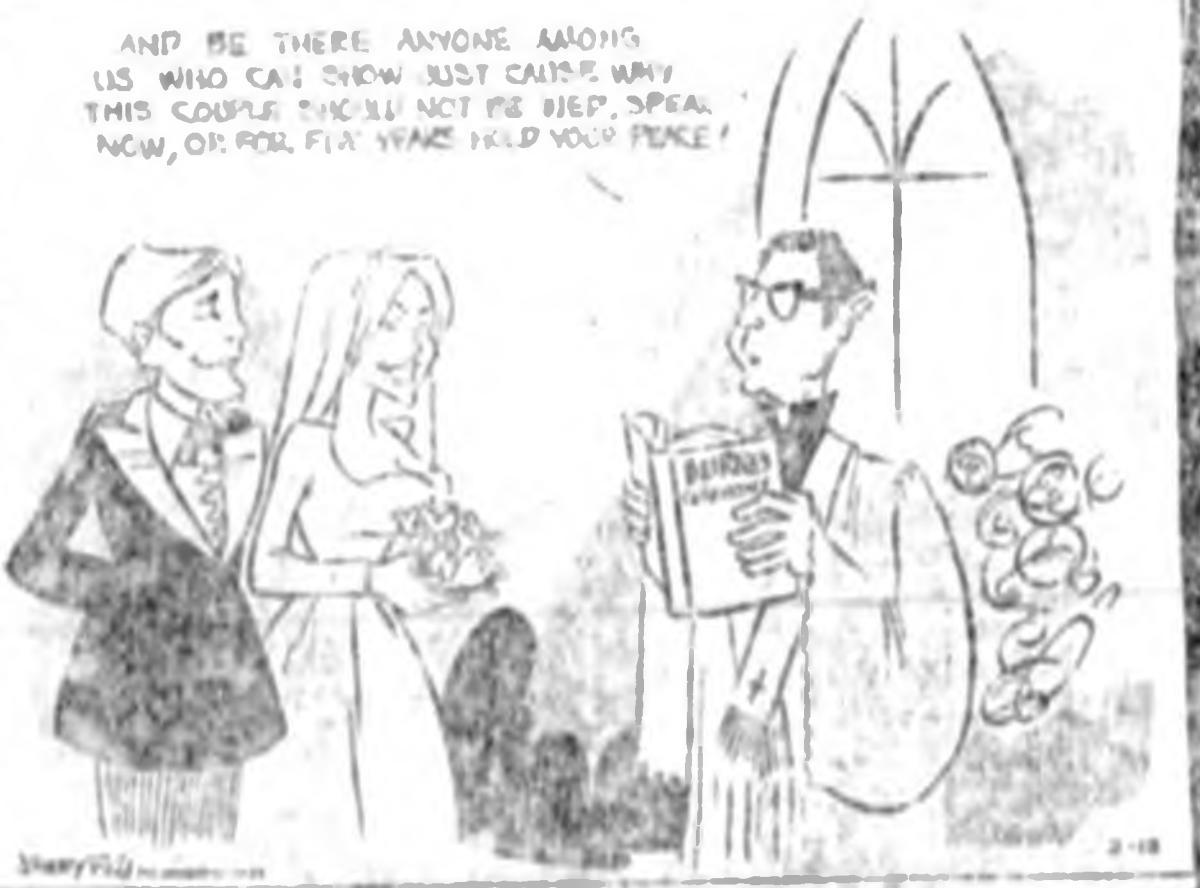
Beirne says it's his intention to get people to take marriage seriously. Couples would agree before marriage on how to divide children and assets acquired during the union.

CAN HE REALLY mean that? Does Beirne truly believe valid life choices can be made for unborn, unknown children?

The way in which they are acquired and the amount of a couple's assets may drastically change their thinking about how those assets should be divided.

No contract can anticipate the future. But that is what Beirne plan would attempt to do. It presumes that people don't change, that lives can be meticulously charted. Any divorced person can tell Beirne how mistaken he is.

ALASKA FEVER



WEEK IN REVIEW

JERRY FLAY

MIKE BEIRNE HASN'T LOST HIS SENSE OF HUMOR! HE'S KEEPING 'EM IN STITCHES WITH HIS 'CONTRACT MARRIAGE' BILL!

DEAREST... WILL YOU MARRY ME FOR FIVE YEARS?

MAKE IT TEN YEARS WITH AN OPTION TO RENEW AND IT'S A DEAL!

DO YOU, THE PARTY OF THE FIRST PART, HEREINAFTER REFERRED TO AS JOHN, TAKE THIS PARTY OF THE SECOND PART, HEREINAFTER REFERRED TO AS MARY, FOR YOUR LAWFULLY WEDDED SPOUSE?

DO YOU REALIZE I'VE ONLY GOT TWO YEARS LEFT TO GO ON MY MARRIAGE CONTRACT?

YOU'RE ONLY DOING FIVE YEARS? I'M IN FOR LIFE!

'Marriage tax' encourages divorce, discourages wedlock

By CAROL KRUCOFF
The Washington Post

WASHINGTON — It's been called everything from a "sin subsidy" to a "divorce bonus" to a "marriage penalty." But by any name, "even the unprintable ones," says Washington postman Roscoe Barnes, "the tax structure still seems just plain unfair."

The Barneses are one of an estimated 20 million couples affected by the so-called "marriage tax" — which results in married couples with two incomes paying more tax than they would if they were single. With a combined income of roughly $39,000, the Barneses will pay about $1,400 more income tax than two single people with the same income.

"It's such a contradiction that a government says it's against immorality, yet penalizes you for being married," he says. "I've known people who wanted to get married, but lived together because it was cheaper.

"My wife and I discussed th , but we really wanted to be married in spite of the tax. I call it the price of love."

This "love price" wasn't always so dear. "The tax system was devised years ago when most families had just one wage earner," says an aide to Sen. Charles Mathias, R-Md., who has introduced a bill that would allow married couples the option of filing separately using the rate schedule for single people.

"At that time married couples who filed jointly had a great advantage over single people. To remedy that, in 1969 Congress enacted a special rate schedule for singles. This created a 'marriage tax penalty' when single people with two incomes married."

The "penalty" has two sources. One is that, in effect, the second earner is taxed at a higher rate — since the first dollar of the second earner's income is taxed at the same rate as the last dollar made by the first earner. Also, married couples filing jointly are permitted a $3,400 zero bracket amount (standard deduction), while singles get more than half that amount, $2,300. (A married person filing separately is permitted $1,700.)

Back when most families had just one earner, the "marriage tax" wasn't viewed as a large problem. But as increasing numbers of women join the workforce, more and more couples are affected.

"More than half of all married women in the country are working," notes Rep. Millicent Fenwick, R-N.J., who has introduced a bill to eliminate the "marriage tax" each year since 1975.

"This means that more than half the nation's married taxpayers may be paying the 'marriage tax.' And experts estimate that anywhere from two-thirds to three-quarters of all married women under age 55 will be working by the end of the decade."

The biggest problem with the "tax on marriage," says Fenwick, "is that it encourages divorce and provides an incentive not to marry. I get letters from women who say, 'Hurry up and pass the bill. My husband's nagging me to get divorced to cut our taxes.'

"Marriages are already under considerable strain. The tax is socially damaging."

Public awareness of the problem has also increased, fanned by press reports about couples like David and Angela Boyter, who have divorced three times and remarried twice to avoid paying the "marriage penalty."

WORK ORDER REQUEST FORM

112- 0165

KEYWORDS: marriage

ASSIGNED TO Cochrie

REQUEST FOR: BILL ☐ RESOLUTION ☐ RESEARCH ☐ OTHER ☐

SUBJECT Marriages of Limited Duration

REQUESTED FOR Sen. Bates BY Helms EXT.

DELIVER TO Representative Bates TAKEN BY Barrier

INSTRUCTIONS, EXPLANATIONS Prepare for introduction SB 870 - 11th Legislature - authorizing marriages of limited duration.

OBTAIN

SPECIAL DRAFTING INSTRUCTIONS ATTACHED ☐

AUTHORIZED TO CONFER WITH

RETURN

TO REQUESTER

APPROVED: Director, Legal Services

REVIEWED

IN 1/25 DUE

TYPED - Draft DATE

Final DATE

PROOFED DELIVERED

SPECIAL INSTRUCTIONS TO TYPIST/PROOFREADER

DRAFT ☐ FINAL ☐

LA-L 10

ALASKA STATE LEGISLATURE - HOUSE OF REPRESENTATIVES

IN SESSION:

POUCH V
JUNEAU, ALASKA 99811
TELEPHONE: (907) 465-3777

P.O. BOX 4-1539
ANCHORAGE, ALASKA 99509
TELEPHONE (907) 277-6219

REP. M. F. "MIKE" BEIRNE

MEMBER OF:
FIFTH STATE LEGISLATURE
NINTH STATE LEGISLATURE
TENTH STATE LEGISLATURE
ELEVENTH STATE LEGISLATURE
TWELFTH STATE LEGISLATURE

COMMITTEES:
HEALTH, EDUCATION
AND SOCIAL SERVICES, CHAIRMAN
AND LEGISLATIVE COUNCIL

November 17, 1981

PRESS RELEASE

The House Health, Education and Social Services Committee, chaired by Representative Mike Beirne, will meet on Thursday, November 19th from 9am to 3pm and on Friday from 1-5pm and 7-9pm in the upstairs conference of the Anchorage Legislative Information Office, located at 1024 West 6th.

On Thursday, the committee will discuss 3 bills sponsored by Representative Beirne. The first two, House Bills 497 and 498, would legalize the concept known as surrogate parenting. Essentially they would allow a couple in which the wife is infertile, to contract with a "surrogate mother" for purposes of bearing that couple a child. The contract would stipulate that the "surrogate" would receive compensation for her time, services and related expenses.

A recent segment of "60 Minutes" dealt with the subject of surrogate parenting. They interviewed William Handel, a Los Angeles attorney who has formed the Surrogate Parenting Foundation. Mr. Handel has agreed to come to Alaska and speak at the hearing. In addition, Mr. and Mrs. Paul Morris, a Fairbanks couple, will also testify before the committee. Many of you may remember a recent newspaper article concerning the Morris' lack of success in adopting a child and their subsequent search for a surrogate mother.

The final bill on Thursday's agenda is HB 113, which would authorize marriages of limited duration.

On Friday, the committee will take testimony on House Bill 210 relating to joint custody of the children in a divorce. The intent of the legislation is to grant both parents equal opportunity to guide and nurture the children of the marriage.

The public is invited to participate in these hearings. We would however appreciate a call so we can add your name to the schedule. Please call Representative Beirne's office at 278-4912 or 277-5912.

-30-

LAW OFFICES
HOOD & LINDSEY
312 BEACON BUILDING
408 SOUTH BOULDER
TULSA, OKLAHOMA 74103

WM. W. HOOD, JR.
JIM L. LINDSEY

TELEPHONE
(918) 583-5833

March 25, 1980

The Honorable M. F. Beirne
House of Representatives
Box 4-1539
Anchorage, Alaska 99503

Dear Representative Beirne:

I would appreciate receiving a copy of your proposed legislation, H.B. 678, dealing with trial marriage. I am interested in your reasons for submitting this bill, what ramifications you view would arise from its enactment, what you determine to be the chance of passage, and any other information available on your bill.

Thanks for your consideration.

Sincerely,

Brad Griffith

BG/rla

RECEIVED JUL 23 1980

7-17-80

Dear Mr. Beirne,

I hope this letter gets to you. I had no idea as to the address of where to reach you.

I read in a local Portland newspaper that you helped get a bill passed which allowed people of you state to marry with a two year contract, which is renewable.

I would like to find out more avout this bill. Can people from other states come to Alaska and marry under this contract?

If you cannot pass along some information to me, will you please refer me to some one who can? Your time and information are greatly appreshiated.

Sincerly

Phyllis Winike
8405 NW Ogden
Portland, Oregon 97231

FLORIDA HOUSE OF REPRESENTATIVES
Tallahassee

Elaine Gordon
Representative 98th District

Reply to
☐ 11666 West Dixie Highway
Miami, Florida 33161
(305) 895-1066
(305) 451-8426 Suncom
☐ 324 The Capitol
Tallahassee, Florida 32304
(904) 488-7098

Committees:

House Administration, Chairperson
Appropriations
Rules & Calendar
Corrections, Probation & Parole
Health & Rehabilitative Services
Regulatory Reform

Joint Legislative Management, Chairperson
Joint Legislative Auditing

May 16, 1980

Dr. Michael Bierne
P. O. Box 1-1539
Anchorage, Alaska 99509

Dear Dr. Bierne:

Caught the Phil Donahue segment of the "Today" Show the other morning on which you were featured. I was most interested in the concept of Marriage of Limited Duration. I would greatly appreciate it if you would send me everything you have in print on this subject - articles, news clips etc..

Hoping to hear from you soon.

Yours Very Truly,

Elaine Gordon
State Representative

EG/ef