

Testing Social Disorganization Theory On Alcohol Consumption and Homicide Rates in Former Soviet Bloc Countries

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This paper examined a modification of social disorganization theory to examine how political disorganization relates to alcohol consumption and homicide rates in Russia, Romania, Bulgaria and Poland around the time of the collapse of communism. It is generally accepted that alcohol, crime, and social disorganization are all related, which is the causal mechanism? Does increased social disorganization lead to increased drinking and therefore increased crime, or does social disorganization impact crime rates and alcohol consumption rates independently? Does political disorganization lead to social disorganization? This paper examines homicide and alcohol consumption rates in Russia, Romania, Bulgaria and Poland from 1980 – 2005 in order to examine whether the collapse of the central governments led people to consume more alcohol, thereby altering the homicide rates in those countries or whether homicide and alcohol consumption rates were unrelated. After regressing homicide and alcohol consumption rates while controlling for a number of salient variables it appears that political disorganization did not drive their citizens to drink although it did apparently cause people to commit more homicides. So, although higher drinking rates are associated with higher homicide rates, government disorganization was not the cause of higher drinking rates.

Introduction

Although social disorganization theory has been tested extensively in the United States and Western Europe in regards to homicide rates, it has not been used as much in Eastern Europe. For most of the twentieth century, the former Soviet Bloc countries were nations where very little information flowed across the borders that was not in some way controlled by the central government. In the late 1980s, however, that changed as a result of the dissolution of the Soviet Union. As the Iron Curtain rose, more information has become available, providing a wealth of previously unexamined data. In this paper I will examine a modification of social disorganization theory as political disorganization and how it relates to alcohol consumption and homicide rates in Russia, Romania, Bulgaria and Poland both before and after the fall of the Soviet Empire.

Background

Social disorganization theory was first proposed by Shaw and McKay (1942), who suggested that as disorganization within the family and community increases, so too will antisocial behavior such as criminal victimization and offending. “As communities lose control of behavior within their boundaries and a clear consensus on approved conduct dissolves, crime increases” (Lanier and Huff-Corzine 2006, 183). Essentially that social cohesion acts as a protective force against crime; but what happens when social cohesion and political cohesion break down as it did so abruptly in the former Eastern Bloc countries at the end of the 1980s? When tested in the United States, social disorganization is typically measured with certain structural correlates such as poverty, population mobility, ethnic heterogeneity, and family disorganization. Although alcohol, crime, and social disorganization appear to be related, which is the causal mechanism? Does increased social disorganization lead to increased drinking and increased crime, or does increased drinking and crime within a community lead to overall increased social disorganization? Does political disorganization lead to social disorganization? In this paper I examine how political disorganization in Eastern Europe impacted both alcohol consumption rates and homicide rates from 1980 to 2005. Since it is nonsensical to claim that increased drinking caused the collapse of the socialist governments of Eastern Europe, it is safe to assume in this regard, that social disorganization was caused by government disorganization (the collapse). Assuming a certain level of disorganization followed the collapse of the communist governments in Russia, Romania, Bulgaria and Poland, I am examining whether governmental collapse led people to consume more alcohol, thereby increasing homicide rates or if homicide rates change independently of alcohol consumption rates.

Literature Review

Research has shown a significant positive correlation between alcohol use and availability, social disorganization and crime rates within a community (Gyimah-Brempong, 2001; and Reid et al.

2003) This correlation remained with various types of crime (violent, non-violent, personal and property) (Nielsen et al. 2005; Freisthler 2004) as well as within various ethnic groups (white, black, Hispanic) (Moriarty 1994). Bye (2008) found that alcohol consumption has an effect on homicide rates in Eastern Europe, but this effect varies with drinking patterns.

Homicide rates are generally used as a measure of the overall violent crime rate in a nation (Wilson 2002). According to the FBI, homicide rates in the United States have generally hovered between 5 and 10 per 100,000 people from 1970 until the present. During much of the twentieth century, the United States was believed to have the highest crime rate among developed nations (Wilson 2002), but during this same time, crime statistics from behind the Iron Curtain were unavailable. Once that crime data became available, researchers discovered that the Russian homicide rate has been comparable to the US homicide rate for the last 35 years, and the current Russian homicide rate is about three times that of the United States; thereby supplanting the United States in having the highest crime rate in the industrial world (Pridemore 2001). This is of particular interest due to the generally held belief that whatever the faults of the socialist totalitarian régime in the former Soviet Bloc, one benefit of such a repressive political structure was the relatively low crime rate.

The comparison between Russia and the United States helps provide a frame of reference for American criminologists, but since the two nations are so dissimilar, it is better to compare Russian homicide rates against other Eastern European nations that share more similarities, which is why I examined Russia alongside Romania, Bulgaria and Poland. Since 1980, homicide in Russia has tripled (see graph 1) but this is not the case for the other three former Soviet Bloc countries. Why is the rate in Russia so much higher? My proposed theory is that as the socialist governments collapsed, the disorganization of the government drove citizens to increase their alcohol consumption, leading to a higher homicide rate.

A study exploring crime and crime control in the Soviet Union and Poland in 1988 found that crime there may be even more violent than Western nations. The oft repeated Soviet claim that there is less crime in communist than in capitalist nations does not appear to be well founded. (Los 1988) This was attributed to anomie theory, which claims that poverty and stagnation breed alienation, hopelessness, and fear, leading people to commit significantly more property crimes, as well as more violent crimes. Anomie theory and social disorganization theory are similar in that they both measure cultural and economic factors that often contribute to crime. The difference is that social disorganization theory focuses on the community and community social control mechanisms imposed on individuals, whereas anomie theory rests squarely upon the actions of the individual and does not focus on community structures. Another study conducted in 1994 found an association between suicide and domestic social integration in Poland, France, and Yugoslavia for the period 1955-85, but discovered little support for an association between homicide and domestic social integration (Lester 1994).

Age is a standard indicator for violent crime. In the United States, most homicides are perpetrated by men in their late teens and early twenties; in Russia, the average homicide offender is a male between the ages of 35 and 54 (Wilson, 2002; Pridemore 2003 *Demographic*; Williams and Serrins, 1995; Il'iashenko, 2004). The older age group in Russia is associated not only with elevated rates of homicide offenses, but also with heavy drinking. Pridemore found that men between the ages of 25 to 54 have the highest level of alcohol consumption (2002). As previously stated, researchers have found a strong positive association between alcohol consumption and crime rate (Greenfeld 1998). Official police data also indicate that about 75% of individuals arrested for homicide in Russia were under the influence of alcohol at the time of the murder (Pridemore 2002; Williams and Serrins 1995; and Il'iashenko, 2004). So a surge in the population of middle aged men typically brings with it both increased alcohol consumption and violent crime rates.

Two final indicators of violent crime rates are income level and education, which are also measures of governmental disorganization. Typically the wealthier and more educated the population, the lower the levels of crime in a particular nation. With many of the former Soviet-bloc nations attaining literacy levels of nearly 100%, homicide rates may not be as closely tied to education level as in Western nations. Pridemore and Kim (2006) found that homicide rates increased when regional economic status decreased; and Stickley and Pridemore (2007) found homicide victimization decreased with increased education.

Predictions

Table 1 - Expected Regression Outcomes re: **Homicide Rates**

ROMANIA		Homicide Rate	Decreases
BULGARIA		Homicide Rate	Decreases
POLAND		Homicide Rate	Decreases
GOVDISORG	Collapses	Homicide Rate	Increases
AGE	Increases	Homicide Rate	Increases
DRINK	Increases	Homicide Rate	Increases
URBAN	Increases	Homicide Rate	Decreases
GNP	Increases	Homicide Rate	Decreases
LITRATE	Increases	Homicide Rate	Decreases
POPDEN	Increases	Homicide Rate	Increases
UNEMP	Increases	Homicide Rate	Increases
POLSTAB	Increases	Homicide Rate	Decreases
RULELAW	Increases	Homicide Rate	Decreases

As outlined in the above table, I expect certain outcomes regarding homicide rates. It is documented that Russia has extremely high homicide rates, so I expect Romania, Bulgaria and Poland will have lower homicide rates than in Russia. As the socialist government in each country collapses, I expect homicide rates to increase because of the instability of the country and the relative lack of governmental and social control mechanisms (i.e. paid police officers). As the percentage of the population between the ages of 15 and 64 increases, I expect homicide rates to

increase since most homicides are committed by people in this very wide age range. As alcohol consumption increases, homicide rates will increase. This is due to the well-documented link between alcohol consumption and violence. As the percentage of people dwelling in urban areas increases, homicide rates will decrease. This is opposite of US outcomes, but it is a remnant of the Soviet area when convicted criminals were banished to rural areas.¹ As a result, violence in Russia occurs more frequently in rural areas, rather than in cities. As GNP, and the measurable wealth of the nation increases, homicide rates are expected to decrease. Since poverty is linked to violence, relative financial solvency is associated with a relative decline in violent behavior. As a measure of the education of the population, as literacy rate increases, homicide rates are expected to decrease. More educated people succumb less often to violence to solve their disputes than do those with less education. As the population density increases and people are in greater proximity to one another the homicide rate will increase because there is a greater chance for tempers to flare and violence to occur. As unemployment increases, homicide rates will also increase. Unemployment is a measure of personal wealth and also a measure of free time. Those out of work typically have less money and more unstructured free time, so they are more likely to engage in the types of behaviors that lead to violence. And finally, as political stability and the rule of law increases, the homicide rate should decrease – demonstrating the governmental and social mechanisms that inhibit individuals' behavior are in place and working as intended.

Table 2- Expected Regression Outcomes re: **Alcohol Consumption Rates**

ROMANIA (2)		Drinking Rate	Decreases
BULGARIA (1)		Drinking Rate	Decreases
POLAND (1)		Drinking Rate	Decreases
GOVDISORG (1)	Collapses	Drinking Rate	Increases
AGE (1)	Increases	Drinking Rate	Increases
URBAN (2)	Increases	Drinking Rate	Decreases

¹ In some towns near large Soviet prisons, the percentage of people living in the town who had a criminal record was nearly 75%.

GNP (2)	Increases	Drinking Rate	Increases
LITRATE (3)	Increases	Drinking Rate	Decreases
POPDEN (3)	Increases	Drinking Rate	Increases
UNEMP (4)	Increases	Drinking Rate	Increases
POLSTAB (5)	Increases	Drinking Rate	Decreases
RULELAW (5)	Increases	Drinking Rate	Decreases

As outlined in the above table, I expect certain outcomes based upon the alcohol consumption rate. Russian culture is often cited as being associated with above average drinking rates, so I anticipate that Romania, Bulgaria, and Poland will have lower drinking rates than Russia. As the socialist government in each country collapses, I expect drinking rates to increase because people feel insecure and may turn to alcohol as a coping mechanism. As the percentage of the population between the ages of 15 and 64 increases, I expect drinking rates to increase, since this is the age bracket when people are most likely to drink. As the percentage of people dwelling in urban areas increases, drinking rates will decrease. This is because people in rural areas often have fewer avenues of entertainment, whereas urban dwellers have many more social options open to them besides drinking. As GNP and the measurable wealth of the nation increases, drinking rates are expected to increase. Economic theory states that if alcohol is a normal good, more money means more consumption. As the literacy rate increases, drinking rates are expected to decrease. More educated people are likely to be aware of the effects and dangers of alcohol, thus making them less likely to consume. As the overall population density increases, the market is more likely to provide alcohol and consumption would be expected to increase. As unemployment increases, drinking rates will also increase. Those out of work have more unstructured time available to them, which they may spend drinking with other unemployed friends. And finally, as political stability and the rule of

law increases, the drinking rate should decrease indicating that governmental and social mechanisms that inhibit individuals' behavior are in place and working as intended.²

Regression Techniques and Data Sources

In order to differentiate the effect of social disorganization on alcohol consumption separately from the effect on homicide rates, I ran a series of XTGLS regressions with varying amounts of data because complete datasets (1980 – 2005) were not available for all variables. Variables were added to the regression as the data became available. The dependent variable was the rate of homicide in Russia per 100,000 of population regressed against the following independent variables: Romanian homicide rates, Bulgarian homicide rates, Polish homicide rates, a government disorganization dummy variable (GOVDISORG), a year variable to detrend the data (YEAR), the percentage of population between the ages of 15 and 64 years old (AGE), the number of liters of alcohol consumed per capita (DRINK), the percentage of the population living in urban areas (URBAN), the Gross National Product per capita (GNP) measured in 2000 US Dollars, the literacy rate (LITRATE), population density (POPDEN), the unemployment rate (UNEMP) measured as a percentage of the population out of work and, finally, the World Governance indicator score for political stability (POLSTAB) and rule of law (RULELAW). The GOVDISORG dummy variable is a 1 for when each nation still fell under socialist rule and a 0 afterwards³ and served as the main measure for government stability.

With the exception of the rule of law and political stability measures, which came from the World Bank's World Governance Indicator, all other data came from the World Health Organization (WHO), European Health for All Database, updated November 2007. Sporadic holes

² The results of these regressions may be very different than predicted because alcohol production was under State control during the Soviet era.² Therefore as the socialist governments collapsed, it is likely that alcohol production was impeded, at least for a time, while the alcohol industry reestablished itself under non-state control. However, if my theory holds true, then the overall consumption of alcohol will increase after the collapse of the socialist governmental structure.

³ The former Soviet Bloc nations became "democracies" on the following dates: Russia – 1 Jan 1992, Romania – 1 Jan 1990, Bulgaria – 1 Feb 1990, Poland – 1 Jan 1989.

in the data were filled with a five-year moving average; however any data hole greater than two years was left unfilled. WHO provided the percentage of the population that was between the ages of 0-15 and 65+, so the two percentages were added together and the total subtracted from 100% to get the percentage of the population between 15 and 64 years old.

Since complete data sets were not available for all the independent variables (i.e. there was no unemployment and no measurement for GNP per capita during the Soviet era), the homicide rates were run through five separate regressions, adding variables each time. Homicide rates in Russia were regressed first against Bulgarian and Polish homicide rates, GOVDISORG, AGE, and DRINK, because those were the only variables where data for the full time period (1980 – 2005) were available. Romanian homicide rates, URBAN and GNP were added next, for which data were available from 1989 – 2005. LITRATE and POPDEN were added in 1990, UNEMPLOYMENT in 1992 and finally POLSTAB and RULELAW were assessed by the World Bank in 1996. (See Table 3 for results) However, since all the countries were “democratic” by 1992, GOVDISORG was dropped from the last two regressions (#4 and #5) because there was no variance in the GOVDISORG variable – it was zero. STATA recognized this as being collinear, but in fact a regression against zero is nothing.⁴

Then, to examine the impact of political disorganization on drinking, the same regressions were run excluding homicide rates and substituting the Russian alcohol consumption rate as the dependent variable. (See Table 4 for results)

⁴ See the discussion section for a possible solution to the collinearity issue re: GOVDISORG variable.

Table 3 - Homicide Regressions, based on data available for that year

Dependent Variable	(1) 1980	(2) 1989	(3) 1990	(4) 1992	(5) 1996
Romania	--	-17.63** (2.81)	-14.00 (13.59)	-10.79 (8.25)	-4.11 (15.38)
Bulgaria	-9.64* (4.22)	-19.99** (1.69)	-16.41 (10.68)	-14.73* (6.50)	-7.72 (11.73)
Poland	-10.92** (4.22)	-19.91** (2.13)	-12.93 (17.71)	-9.01 (10.64)	3.30 (20.12)
Govdisorg	1.29** (0.34)	2.16** (0.77)	2.39* (1.11)	dropped	dropped
Year	-0.00 (0.05)	0.03 (0.09)	-0.03 (0.18)	-0.15 (0.11)	-0.19 (0.15)
Age	-0.24 (0.24)	-0.19 (0.35)	-0.15 (0.49)	0.13 (0.32)	0.42 (0.33)
Drink	0.14 (0.13)	0.53* (0.22)	0.45* (0.22)	0.34** (0.12)	0.13 (0.18)
Urban	--	0.13 (0.12)	0.03 (0.13)	0.08 (0.08)	0.06 (0.09)
GNP	--	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00** (0.00)
Litrate	--	--	-0.89 (0.46)	-0.05 (0.26)	0.14 (0.17)
Popden	--	--	-0.76 (0.15)	-0.12 (0.09)	-0.17 (0.17)
Unemp	--	--	--	0.03 (0.03)	-0.09* (0.04)
Polstab	--	--	--	--	-0.46 (0.49)
Rulelaw	--	--	--	--	-3.07* (1.48)
Wald chi2	27.02	261.29	276.33	527.38	2009.85
Observations	95	68	65	61	40

Regressed against Russian homicide rates, which is why homicide rate in Russia is not reported.

Standard error is in parenthesis (xx). XTGLS regression used to deal with heteroskedacity and autocorrelation.

-- indicates data was not available for that variable for that year

* indicates statistically significant at the 5% level

** indicates statistically significant at the 1% level

Table 4 – Alcohol Consumption Regressions, based on data available for that year

Dependent Variable	(1) 1980	(2) 1989	(3) 1990	(4) 1992	(5) 1996
Romania	0.16 (1.02)	-2.74 (1.46)	-24.39** (7.98)	-14.70 (7.61)	-13.19 (12.10)
Bulgaria	-0.06 (0.99)	-0.58 (0.69)	-17.39** (6.11)	-11.01* (5.79)	-9.39 (9.32)
Poland	-0.78 (0.92)	-1.69 (0.96)	-28.42** (10.41)	-17.88 (9.86)	-14.51 (15.76)
Govdisorg	-0.21 (0.28)	-0.24 (0.41)	-0.22 (0.52)	dropped	dropped
Year	-0.09** (0.03)	-0.09 (0.06)	0.08 (0.09)	-0.01 (0.09)	0.00 (0.15)
Age	0.22 (0.12)	0.37 (0.22)	0.28 (0.25)	0.45 (0.24)	0.29 (0.26)
Urban	--	-0.13 (0.07)	-0.14 (0.09)	0.00 (0.08)	-0.04 0.11
GNP	--	-0.00 (0.00)	-0.00** (0.00)	-0.00* (0.00)	-0.00 (0.00)
Litrates	--	--	-0.49 (0.26)	-0.29 (0.23)	-0.13 (0.36)
Popden	--	--	0.23** (0.09)	0.15 (0.08)	0.15 (0.14)
Unemp	--	--	--	-0.04 (0.03)	-0.06 (0.03)
Polstab	--	--	--	--	-0.58 (0.44)
Rulelaw	--	--	--	--	-1.87* (0.87)
Wald chi2	24.68	14.46	50.56	50.41	381.96
Observations	104	68	65	61	40

Regressed against Russian homicide rates, which is why homicide rate in Russia is not reported.

Standard error is in parenthesis (xx). XTGLS regression used to deal with heteroskedacity and autocorrelation.

-- indicates data was not available for that variable for that year

* indicates statistically significant at the 5% level

** indicates statistically significant at the 1% level

Results

For the homicide regressions, the only variables that were statistically significant were government disorganization, alcohol consumption, and for the fifth and final regression, unemployment and rule of law. As expected, Romania, Bulgaria and Poland all had much lower homicide rates than Russia. (See table 5 for an overview of expected versus realized results.) The collapse of the socialist governments is significantly positively associated with higher homicide rates (significant at a 0.01 level), but the government disorganization variable was dropped from the fourth and fifth regressions due to multicollinearity (according to STATA) when unemployment, political stability and rule of law were added in respectively. Despite the collinearity, I decided to report the results of all five regressions. Since the rule of law and political stability measurements were not available until 1996, the addition of these variables significantly reduced the observations in the regression (from 61 to 40), and since they are both indicators of government “goodness,” I put more weight on the results of the fourth regression than the fifth. In the fourth regression, collinearity between government disorganization and unemployment was a problem as well, but since both are important aspects of understanding homicide rates, both measures were left in the regression. Contrary to expectations, AGE was not significant in any of the regressions. However, since age is so important in the literature, it was retained. It is possible that the age measurement is simply too gross a number. Since other research has indicated that homicide perpetrators in Russia are largely between the ages of 35 and 54, grouping that age bracket with others from age 15 to 64 simply does not provide the fidelity necessary to observe a trend in the data. DRINK was only sporadically significant (regressions 2, 3 and 4, but not 1 or 5), although the results still indicate a positive association between homicide rates and drinking rates. Additional discussion on alcohol consumption can be found below, in the results section of the separate alcohol consumption regression.

GNP was statistically significant in the fifth regression, but it essentially had no impact (coefficient < 0.00). LITRATE was not significant, and was correlated in the expected direction until the fifth regression, when the relationship flipped and associated a higher literacy rate with increased homicide rates. POPDEN was also not significant, but in the opposite direction from expected. UNEMP was only statistically significant in the fifth regression, after GOVDISORG was dropped and POLSTAB and RULELAW were added, but it was also in the opposite direction than expected. The World Bank measure of political stability was not significant, although rule of law was. The small N and the collinearity problem for the fifth regression does call the results of that regression in to question, however.

Table 5 – Homicide Rate Regression Results.

ROMANIA (2)		Homicide Rate	Decreases	Significant 2 nd regression only
BULGARIA (1)		Homicide Rate	Decreases	Significant, 1, 2, 4 regressions
POLAND (1)		Homicide Rate	Decreases	Significant 1 st & 2 nd regressions
GOVDISORG (1)	Collapses	Homicide Rate	Increases	Significant, but dropped in 4 th and 5 th regressions
AGE (1)	Increases	Homicide Rate	<i>Decreases</i>	Not significant
DRINK (1)	Increases	Homicide Rate	Increases	Significant 2 nd , 3 rd & 4 th regressions
URBAN (2)	Increases	Homicide Rate	<i>Increases</i>	Not significant
GNP (2)	Increases	Homicide Rate	<i>No Impact</i>	Not significant
LITRATE (3)	Increases	Homicide Rate	Decreases	Not significant
POPDEN (3)	Increases	Homicide Rate	<i>Decreases</i>	Not significant
UNEMP (4)	Increases	Homicide Rate	Increases → <i>decreases</i>	Significant 5 th regression only
POLSTAB (5)	Increases	Homicide Rate	Decreases	Not significant
RULELAW (5)	Increases	Homicide Rate	Decreases	Significant

Italics indicate an unexpected result.

Finally, and most surprisingly, unemployment was only significant in the fifth and final regression, and it was significantly *negatively* associated with homicide rates, meaning that as

unemployment increases, homicide rates decrease. The difficulty with unemployment rates in former Eastern Bloc countries is that unemployment was artificially nonexistent during the Soviet era. Citizens were essentially guaranteed a job in accordance with the 19xx Soviet constitution. Governmental policies such as administratively assigning new college graduates to their first job, and “modifying” work weeks from 40-hours to 20-hours (so two individuals would be employed instead of one) ensured the minimum level of unemployment possible. Also, individuals who voluntarily left their job and refused, for whatever reason, to accept another were not considered “unemployed” since they violated their contract with the State. Gregory and Collier, in their paper *Unemployment in the Soviet Union*, estimate that even during the Soviet era approximately 1.1% of the population could be considered “unemployed” by Western standards (1988). As a result of this artificiality, it may have taken some time for the former Soviet satellite governments to establish an appropriate method for *measuring* unemployment, let alone dealing with the issue itself. Unemployment rates increased after the fall of the socialist governments until about 1998, and they have been mostly declining ever since. This inverse relationship between homicide rates and unemployment is contrary expectations, so the most likely explanation is a problem with data collection. It will be interesting to see in another ten or twenty years if this inverse relationship continues, or if the trend returns to the expected positive relationship.

Overall, the VIF for the complete homicide regression was 3132 (see table 6) indicating serious problems with multicollinearity. It appears that (in order) Poland, population density, Romania and Bulgaria were the worst offenders, although they are not actually collinear. STATA interprets the results as collinear since all three countries do have similar homicide rates (see graph 1). While nearly all the variables have higher VIF than one would like, each of the variables are individually theoretically relevant; as a result, they were maintained for the time being.

Table 6 – Variance Inflation Factor

Variable	VIF	1/VIF
-----+-----		
poland	15176.62	0.000066
popden	10778.45	0.000093
romania	8958.03	0.000112
bulgaria	5374.77	0.000186
urban	174.89	0.005718
rulelaw	101.83	0.009820
year	48.93	0.020438
litrage	33.41	0.029929
age	23.50	0.042557
gnp	21.18	0.047216
polstab	20.26	0.049368
drink	7.80	0.128230
unemp	4.95	0.202030
-----+-----		
Mean VIF	3132.66	

The results of the alcohol consumption regression were different from the homicide regressions in that even fewer variables were statistically significant (see table 7 for an overview). There were no variables that were consistently significant across the five regressions. Alcohol consumption in Romania, Bulgaria and Poland, while much lower than Russia, was not statistically significant except for the third and fourth regressions. GOVDIORG was *negatively associated* with alcohol consumption, but not significant. AGE followed the expected sign, but was not significant, as was for URBAN, LITRATE and POLSTAB. GNP was statistically significant, but it had no impact (coefficient < 0.00). Population density followed the expected sign, but was significant only for regression #3, but not #4 or #5. Unemployment, like the homicide regression results, had the opposite sign expected, but was not significant. Rule of law was the only significant variable in regression 5, but this is after GOVDIORG had been dropped from the equation because of collinearity.

Table 7 – Alcohol Consumption Rate Regression Results.

ROMANIA (2)		Drinking Rate	Decreases	Significant 3 rd regression only
BULGARIA (1)		Drinking Rate	Decreases	Significant 3 rd & 4 th regressions
POLAND (1)		Drinking Rate	Decreases	Significant 3 rd regression only
GOVDISORG (1)	Collapses	Drinking Rate	<i>Decreases</i>	Not significant, dropped from 4 th and 5 th regressions
AGE (1)	Increases	Drinking Rate	Increases	Not significant
URBAN (2)	Increases	Drinking Rate	Decreases	Not significant
GNP (2)	Increases	Drinking Rate	<i>No Impact</i>	
LITRATE (3)	Increases	Drinking Rate	Decreases	Not significant
POPDEN (3)	Increases	Drinking Rate	Increases	Significant, 1 st regression only
UNEMP (4)	Increases	Drinking Rate	<i>Decreases</i>	Not significant
POLSTAB (5)	Increases	Drinking Rate	Decreases	Not significant
RULELAW (5)	Increases	Drinking Rate	Decreases	Significant

Italics indicate an unexpected result.

To summarize the findings of the above two sets of regressions, it appears that government disorganization and the collapse of the socialist governments in former Soviet Bloc nations did not drive their citizens to drink although those factors did apparently cause people to commit more homicides, especially in Russia. So, although higher drinking rates are associated with higher homicide rates, according to these findings, government disorganization was not the cause of higher drinking rates.

Discussion

Analyzing the alcohol consumption and homicide rates from four different countries provided greater explanatory power to the analysis as well as increased the overall number of observations; the results of this study were still limited by the relatively small sample size (N=104, 68, 65, 61 & 40 for each regression, respectively). A larger sample size will normally reduce the variance of the estimated coefficients and will therefore allow for a more accurate estimate (Studmund 2006). I hoped to include data on the former Peoples' Republic of Czechoslovakia and

the former East Germany, however since Czechoslovakia split into two countries and East Germany merged with West Germany, untangling the data proved insurmountable for the time available. Hungarian data is available and I will add it for any future attempts at analysis, hopefully providing another 26 years' worth of data. This paper used the XTGLS technique in order to deal with panel, time series data.

The aggregate nature of the data contributes to another omission in the analysis: the difference gender plays in homicide rates. The gender variable is impossible to collect when the unit of analysis is a country. One cannot have an independent variable at the individual level when the dependent variable is aggregated to the country level. This is unfortunate because by simply looking at the available data, the homicide rates for males were three to four times higher than the homicide rates for females, so including a measure for male or female would have been enlightening. It is also likely that a difference would be noted between males and females in regards to alcohol consumption rates. Since this variable was omitted, it is likely the omission biased several of the other coefficients, though it is difficult to say in which direction or by how much. The higher rate at which males are murdered would be offset somewhat at the lower rate at which females are murdered, but determining the weight of each measure is difficult. This is an important additional variable for future study.

A significant improvement in the analysis regarding government disorganization could be conducted with the current data set. After contemplating the results of this paper, it became apparent that a different measure for government disorganization would probably improve the results. The GOVDISORG variable is currently structured as a binary variable: 1 indicating the socialist government was in place, 0 indicating the socialist government collapsed. This implies that the nation was completely organized until the time of collapse, and then completely disorganized afterwards, which is illogical. What is more likely is that the government was organized and became

more disorganized as it neared collapse. During the year of collapse the government was completely disorganized and then became more organized as more time elapsed. An improved construct for this variable would be to assign the year of government collapse for each country the value of 0, then the value of 1 at the time one year before and after the collapse, then 2 for two years before and after collapse, etc. (See graph 3) This construct makes more sense intuitively, it would provide greater variation in the GOVDISORG variable, and it could reduce some of the multicollinearity issues in the regressions.

Finally, the rule of law and political stability variables need to be examined more closely. It is likely, with the change in the GOVDISORG variable suggested above, that one or the other, or both, of these other two measures of government stability are redundant and should be dropped from the regression. Since their inclusion also significantly restricts the dataset (from 1996 – 2005), dropping them from future regressions would probably add more than it subtracts.

Conclusion

This paper, while struggling with some difficulties with multicollinearity and omitted variables, does, in some small measure, reinforce that social (political) disorganization theory holds in former socialist countries in regards to homicide rates, but not for alcohol consumption rates. It is evident from graph 1 that around the time of government collapse, the homicide rates in all four nations increased dramatically⁵ So, government and, by extension, social disorganization had a significant impact on the homicide rates of all four nations around their time of transition from socialism to democracy, but Romania, Bulgaria and Poland managed to reorganize and return their homicide rates to pre-1991 levels by 2005, while Russia apparently has not, judging by the continually elevated homicide rates.

⁵ In Russia, from 15.25 homicides per 1000,000 of population in 1991 to 32.91 in 1993, and increase of 115%. In Romania, from 4.04 in 1989 to 5.51 in 1990, a 36% increase. In Bulgaria from 2.51 in 1989 to 4.64 in 1992, an 85% increase. In Poland, from 1.85 in 1988 to 3.07 in 1990, a 66% increase.

While governmental and social disorganization had an impact on homicide rates, they did not appear to have as much of an impact on alcohol consumption rates. Looking at graph 2, it appears that the overall alcohol consumption rates in Romania, Bulgaria and Poland are on a downward trend, even during the time of collapse. Russia's consumption fell around the time of Gorbachev's anti-alcohol campaign (1985-1987), but rebounded and has stayed higher than the other three nations since 1997. In attempting to find a reason to account for the difference in homicide rates between the four nations, it appears that one must search for a solution other than alcohol consumption rates.

What this paper does not explore is the likely relationship between the homicide rate and the prevalence of organized crime in Russia. After the collapse of the Soviet Union, organized crime emerged "rapidly" and "forcefully" (Galeotti 2004) in Russia and likely still contributes to the high homicide rate. Organized crime is rampant in Russia, and many media reports suggest that the Russian government itself pays to have political enemies and outspoken journalists murdered (Specter 2007). While this makes for sensational newspaper articles, it could prove to be very difficult, not to mention potentially dangerous, to attempt to test that theory empirically. The prevalence of organized crime in Russia does require consideration when examining homicide rates, as the contribution of organized crimes to the homicide rate should not necessarily be considered social disorganization.

While the results of this study indicate that social disorganization did not lead to higher alcohol consumption rates in Russia, Romania, Bulgaria and Poland, it does indicate that social disorganizations leads to higher homicide rates. As Bulgaria, Romania and Poland became less disorganized, their homicide rates dropped. Russia's did not. This paper is one of the few in the literature that expands and tests standard Western homicide theory in Eastern European nations. As Russia reverts back to a more totalitarian regime, it will be interesting to see changes in the future

homicide rate. It would also be illuminating to examine earlier data (pre-1980), as well as to analyze Russian homicide rates as compared to other (non Eastern European) nations suffering from an extended period of social disorganization. The additional data points, both forward and backward in time and cross nationally, would provide a larger sample size and increase the validity of the findings.

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