

## Suicide and alcohol-related mortality in Hungary in the last two decades

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### Summary

**Objectives:** Suicide and alcohol-related mortality are often linked to each other in recent times, especially in the unfavourable mortality trends detected in Russia. Recent study has aimed to investigate suicide and alcohol-related mortality in Hungary between 1986 and 2005. This paper is based on the concept of social anomie and expects to find more favourable trends for both causes of death among those who were less exposed to unfavourable economic and social trends in the last two decades.

**Methods:** In a cross-sectional design sex, age- and education-specific mortality rates were calculated.

**Results:** We found falling suicide rates in all socio-demographic groups, except well-educated middle aged men. Suicide has fallen more among women than men, more among the elderly than the young and more among the more educated than the less educated. Alcohol-related mortality has risen by 5–10%, and its occurrence in different socio-demographic groups was found to be changing entirely proportionally.

**Conclusions:** Developments in suicide mortality are generally in accordance with the hypothesis based on the concept of social anomie while those of alcohol-related mortality showed no relation with this concept.

**Keywords:** Suicide – Alcohol-related mortality – Social anomie – Central-Eastern Europe.

In public health research, suicide and alcohol-related mortality are often linked. The recent growth of suicide and alcohol-related mortality in Russia reinforced the view that the two

problems have common roots and are of an entirely social nature. Alcohol-related and suicidal mortality, along with homicide are most frequently connected with recent short-term economic and political developments in Russia and the neighbouring countries.<sup>1 2</sup> Other recent findings, however, questioned the existence of the relationship.<sup>3 4 5</sup>

By large-scale international studies, suicide and alcohol consumption shows some correlation with each other both at the international and national level, but the nature of the relationship varies. The changes in the alcohol consumption levels have almost always a strong effect on cirrhosis mortality.<sup>6</sup> Alcohol consumption and suicide, on the other hand, has not been everywhere correlated with each other among the 14 European countries studied, for the period 1950–1995, and the relation was not uniform across age groups and cultures.<sup>7 8</sup> For the period 1950 and 1990 overall trends of Hungarian suicides and alcohol consumption were also strongly correlated. Changes in alcohol consumption had an almost immediate effect on suicide mortality: the later lagged behind the former only by one year.<sup>9</sup>

International studies on relation between alcoholism and suicide, such as the most popular view of the Russian mortality developments focuses on social disintegration and follows the footsteps of Durkheim.<sup>10 11</sup> In this view an anomic social environment explains the growth of the overall rates of suicide and alcohol-related death.

Another classic social theory on deviant behaviour is Merton's approach. In Merton's original view social anomie is a kind social situation in which social norms are contradictory or social goals (fixed by social norms) are unachievable using the given tools.<sup>12</sup> In his classification of deviant behaviour, socially unacceptable types of alcohol consumption and suicide are both similar responses to an anomic social environment ("retreatism"). In this case attitudes toward both cultural

goals and institutionalised means of achieving the goals are negative (“eliminating”). Merton’s approach, in its classic form – in line with the Durkheimian approach – would suggest that suicide and alcohol-related deaths would show the same trends.

The aim of the recent study is to examine the applicability of social theory based on a Mertonian approach on deviant behaviour to find an explanation for the trends of suicide and alcohol-related mortality under rapidly changing social conditions, demonstrated by Hungary following 1989, during the period of building of a new market economy.

Hungary in the 1980’s was the classic case of a highly anomic society. The special mixture of capitalism and socialism of those days, such as the market-oriented operation of the large state-owned companies and small enterprisers in a non-market oriented legal environment was the source of everyday stress. Social disparities were also in growth in harsh contradiction with the ruling ideology. Flourishing political and civil organization could operate only in the margin of legality. In 1989, in the time of the political transition it was generally hoped, that these social tensions would disappear. But the changes brought not only political freedom, but also economic crises and increasing unemployment.

Consequently, it would be hard to determine, that the “total amount of social anomie” are in decrease or in increase in the Hungarian society since 1989. But it is reasonable to assume that for some social groups social environment become markedly more favourable leaving more burden for others. These social groups can be easily identified by a Mertonian approach.

In searching for groups having special susceptibility to deviant behaviour in general, three dimensions have received special attention in the Western countries. In terms of suicide economic material deprivation was found to a serious risk factor in some Western societies<sup>13</sup>. Unemployment is also often examined,<sup>14,15</sup> although a more close examination showed it is not so much unemployment as it is but its negative perception, which can be considered as a risk factor of suicide.<sup>16</sup> Strong family ties are considered the single most important source of social integration, and their positive effect has been proved concerning frequency of deviant behaviour, although their influence was stronger among men than women.<sup>17</sup>

Considering the impact of these factors in the post 1989 Hungary, first income conditions should be mentioned. The GDP had been fallen till 1994 reaching 84% level compared to 1989, and reached the level of 1989 only by 2000. Income inequalities grew dramatically in the first part of the nineties parallel with the economic recession.

For the losers it meant sinking into poverty – something, which had been neither experienced earlier, nor expected

from the new market economy.<sup>18</sup> To some extent, losers can be defined demographically, since the purchasing power of the old-age pension decreased less than that of the salaries. Consequently, it was not the older age groups, which were expected to experience major social anomie, but the younger age groups. Income has been differentiated by and large by educational attainment: in the new economic order: only the better educated were able to maintain their economic positions and later to improve it. As to the middle aged and the younger age groups we may assume that poverty is far more common for the less educated than to their better-educated counterparts.

Unemployment or insecurity of employment – again a rare phenomenon earlier – started to increase and hit primarily those with a low education. Although unemployment is high among the young as well, the perceived burden of unemployment is assumed to be heavier among the middle-aged, who had already gained experience from an era when work stood in high esteem. Anomie caused by unemployment is rather regarded as a phenomenon where men are concerned, not because women’s claim for jobs is ignored but because of the nature of structural changes in the country’s economy. Heavy industry and similar areas offering jobs mostly for men have decreased in importance, while the emerging service sector provided more opportunities for women. Hence social anomie “induced” by unemployment is expected to be pronounced among middle-aged men of low education.

The supportive nature of interpersonal relationships, most importantly family relation also influences social anomie. In the late 1980’s the attitudes toward the role of women were rather conservative in Hungarian society. The attitudes were in harsh contradiction with the facts of real life: by the mid-eighties women’s activity rate has reached a level close to the potential maximum. By the early 2000’s the tension between the norms and actual practices has eased. Although the tendency of becoming more liberal toward modern women’s role was more pronounced among men and women with higher education, it appeared among all educational groups, and both among men and women.<sup>19</sup> Other changes in family structure also seem to favor women<sup>20</sup>. The overall balance of the changes in the area of families and gender roles can be judged as positive for women, especially for those with higher education.

## Methods

In order to see the possible relationship between phases of social transformation and mortality in the different social groups, we calculated both suicide and alcohol-related mor-

**Table 1.** Number of death and person-years by four-year intervals between 1986 and 2008.

Time intervals	[Number of deaths]				[Person-years]	
	Suicide		Alcohol-related mortality		Males	Females
	Males	Females	Males	Females		
1986–89	11 421	5 042	14 257	4 976	11 427 155	13 364 538
1990–93	10 227	3 997	20 968	7 247	11 338 446	13 379 607
1994–97	9 034	3 313	25 224	8 003	11 207 496	13 402 182
1998–01	8 691	2 852	21 580	7 072	11 250 616	13 556 764
2002–05	7 588	2 375	16 804	5 607	11 405 707	13 772 905

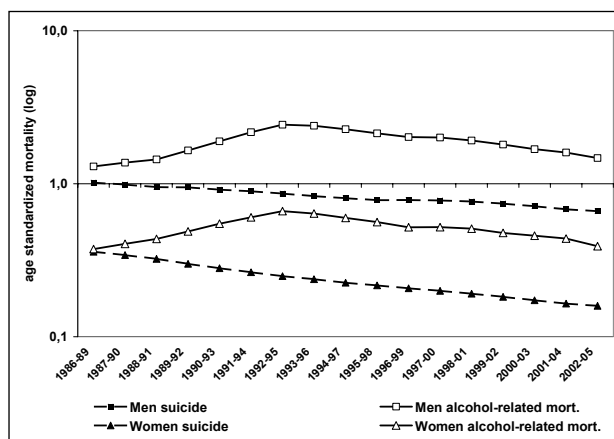
tality rates year-by-year, although only four-year moving averages for selected time periods will be presented.

The source of the (unlinked, cross-sectional) mortality data is the mortality register of the Hungarian Central Statistical Office. This register is based on a continuous data collection process on vital statistics. The sources for the population data are different, namely the censuses from 1980, 1990 and 2001. We obtained yearly estimates on population by estimation for the years between the censuses and by forecasting for the years following 2001.

As for causes of alcohol-related death, we examined only those directly linked with alcohol consumption, since the aim of the study is not to give an estimation on the magnitude of alcohol-related deaths but rather to follow the changes in its social pattern. That is why an alcohol-related mortality indicator was constructed from the following causes: alcoholic cirrhosis of liver and pancreas (ICD 9 codes: 571.0–571.3, 577.0–577.1, ICD 10 codes: K70, K85, K86.0), accidental poisoning by alcohol (ICD 9 codes: E860, ICD 10 codes: X45), alcoholic cardiomyopathy (ICD 9 codes: 425.5, ICD 10 codes: I42.6), and alcoholic psychosis, dependence and abuse (ICD 9 codes: 291, 303, 305.0, ICD 10 codes: F10). Only underlying causes were considered.

Socio-economic position will be characterised by educational attainment. We distinguish only two major educational groups: one with elementary education at most, including also those who did not finish elementary education, or, do not have any completed classes, and another one with higher (secondary or tertiary) education. Due to the specificities of the available database we had to incorporate into the first group also those who completed vocational training but had no maturation.

In this paper age specific mortality rates and standardized ratios by education will be presented for the age groups older than 30 (whose educational attainment is not expected to change at a large scale in later phases of their life), and for the time period between 1986 and 2005. The method of standardization was direct, and the European Standard Population was chosen as standard population.



**Figure 1.** The dynamic of suicide and alcohol-related mortality in Hungary between 1986 and 2005: age-standardized mortality rates, men and women.

## Results

Overall mortality due to suicide has been continuously falling during the last two decades in Hungary. The former, exceedingly high rates that often placed Hungary at the top of the European list decreased in the last two decades to such an extent, that now Hungary can be found among the European countries with a middle to high suicide rate. In 1986 3 024 men and 1 303 women committed suicide, the corresponding figures for 2005 were 1 835 and 557. The reduction of suicide is not as a consequence of the changing age-composition of the population: the age-standardized rates have fallen to the same extent as the absolute numbers (Fig 1). The decrease in suicide was permanent both among men and women, although greater for women.

In details, male suicide has fallen significantly in each educational and age group, except the better educated 40–54 year-old. The reduction is the most significant in the youngest age group and among those older than 60 with at least secondary education. Among those with elementary education at most,

**Table 2.** Male suicide rates by age and educational attainment and their changes between 1986–89 and 2002–05 (1/1000 person–years).

Educational level	[Elementary at most]				[Secondary at least]				[Males all together]			
	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (2) – (1) (a)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (2) – (1) (a)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (2) – (1) (a)	Rate ratio (2)/(1)
30–34	0,898	0,400	–0,498***	0,44	0,341	0,186	–0,156***	0,54	0,722	0,319	–0,403***	0,44
35–39	1,064	0,637	–0,427***	0,59	0,398	0,253	–0,144***	0,63	0,834	0,487	–0,347***	0,58
40–44	1,274	0,906	–0,368***	0,71	0,385	0,417	0,032	1,08	0,966	0,724	–0,242***	0,75
45–49	1,315	0,923	–0,392***	0,70	0,501	0,441	–0,060	0,88	1,084	0,754	–0,329***	0,69
50–54	1,278	0,971	–0,307***	0,76	0,461	0,422	–0,039	0,91	1,081	0,758	–0,322***	0,70
55–59	1,079	0,917	–0,162***	0,84	0,390	0,274	–0,116***	0,70	0,914	0,652	–0,262***	0,71
60–64	1,065	0,805	–0,260***	0,75	0,471	0,243	–0,229***	0,51	0,941	0,607	–0,334***	0,64
65–69	1,154	0,766	–0,388***	0,66	0,513	0,275	–0,238***	0,53	1,032	0,619	–0,413***	0,59
70+	1,680	1,271	–0,409**	0,75	0,750	0,289	–0,461***	0,38	1,559	0,999	–0,561***	0,64

A standard two sample t–test, \*\*\* p < 0,001; \*\* p < 0,01; \* p < 0,05.

**Table 3.** Female suicide rates by age and educational attainment and their changes between 1986–89 and 2002–05 (1/1000 person–years).

Educational level	[Elementary at most]				[Secondary at least]				[Females all together]			
	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (2) – (1) (a)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (2) – (1) (a)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (2) – (1) (a)	Rate ratio (2)/(1)
30–34	0,258	0,080	–0,178***	0,31	0,142	0,045	–0,097***	0,31	0,206	0,061	–0,144***	0,30
35–39	0,311	0,115	–0,197***	0,36	0,189	0,100	–0,089***	0,53	0,256	0,107	–0,149***	0,42
40–44	0,318	0,181	–0,137***	0,56	0,249	0,103	–0,146***	0,41	0,291	0,140	–0,150***	0,48
45–49	0,344	0,219	–0,126***	0,63	0,290	0,147	–0,143***	0,51	0,329	0,183	–0,146***	0,56
50–54	0,359	0,228	–0,131***	0,63	0,305	0,148	–0,156***	0,49	0,348	0,189	–0,160***	0,54
55–59	0,325	0,202	–0,122***	0,62	0,378	0,098	–0,280***	0,26	0,332	0,155	–0,177***	0,46
60–64	0,349	0,190	–0,159***	0,54	0,432	0,101	–0,331***	0,23	0,357	0,162	–0,195***	0,45
65–69	0,476	0,179	–0,297***	0,37	0,595	0,084	–0,511***	0,14	0,485	0,157	–0,328***	0,32
70+	0,679	0,308	–0,372***	0,45	0,758	0,067	–0,691**	0,09	0,684	0,277	–0,407**	0,41

A standard two sample t–test; \*\*\* p < 0,001; \*\* p < 0,01; \* p < 0,05.

the fall of suicide is rather proportional in all age groups, except the two younger groups. Among the better educated, there was no decrease among the middle aged, but there was a significant decrease among the older men (Tab. 2).

The reduction of the female suicide rates is significant in all age and educational groups. Suicide, however, has fallen more among the better educated than the poorly educated, and more among the young and old age groups than among the middle aged. As a result, suicide almost disappeared among the young women with at least secondary level of education. The reduction was also massive among better-educated women aged 65+ (Tab. 3).

Unlike suicide, alcohol-related mortality was growing dynamically until 1992–95 then started to decline but in 2002–05 it was still higher by 5–10% than in 1986–89. The tendency is the same for males and females.

In more detail: comparing 2002–2005, the rates of mortality directly attributed to alcohol decreased only among the youngest (30–39 year-old). Among males, alcohol-related mortality increased in all age groups older than 40. The trend is the same for the less and the better educated, although the increase of rates is not significant for the age groups 40–44, 65–69 and 70+ among those with at least secondary educational level (Tab. 4).

**Table 4.** Male directly alcohol-related mortality rates by age and educational attainment and their changes between 1986–89 and 2002–05 (1/1000 person-years).

Educational level	[Elementary at most]				[Secondary at least]				[Males all together]			
	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (a) (2) – (1)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (a) (2) – (1)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (a) (2) – (1)	Rate ratio (2)/(1)
30–34	0,504	0,221	–0,283***	0,43	0,137	0,052	–0,085***	0,38	0,388	0,157	–0,231***	0,41
35–39	0,784	0,656	–0,127**	0,83	0,269	0,210	–0,059	0,78	0,606	0,481	–0,125***	0,79
40–44	1,305	1,447	0,141*	1,10	0,456	0,511	0,055	1,12	1,011	1,099	0,088*	1,09
45–49	1,761	2,252	0,491***	1,28	0,615	0,864	0,250***	1,41	1,435	1,766	0,331***	1,23
50–54	1,937	2,652	0,715***	1,37	0,790	1,105	0,315***	1,40	1,660	2,054	0,394***	1,24
55–59	2,188	3,044	0,856***	1,39	0,974	1,231	0,257***	1,26	1,897	2,298	0,401***	1,21
60–64	2,386	3,117	0,730***	1,31	0,902	1,365	0,463***	1,51	2,076	2,498	0,423***	1,20
65–69	2,103	2,587	0,484***	1,23	1,005	1,078	0,073	1,07	1,895	2,134	0,240***	1,13
70+	1,360	1,750	0,390***	1,29	0,644	0,696	0,051	1,08	1,268	1,457	0,190***	1,15

A standard two sample t-test; \*\*\* p < 0,001; \*\* p < 0,01; \* p < 0,05.

**Table 5.** Female directly alcohol-related mortality rates by age and educational attainment and the changes between 1986–89 and 2002–05 (1/1000 person-years).

Educational level	[Elementary at most]				[Secondary at least]				[Females all together]			
	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (a) (2) – (1)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (a) (2) – (1)	Rate ratio (2)/(1)	Rate in 1986–89 (1)	Rate in 2002–05 (2)	Rate diff. (a) (2) – (1)	Rate ratio (2)/(1)
30–34	0,161	0,052	–0,109***	0,32	0,046	0,017	–0,029**	0,37	0,109	0,033	–0,076***	0,31
35–39	0,295	0,193	–0,102***	0,66	0,092	0,052	–0,040**	0,56	0,203	0,116	–0,087***	0,57
40–44	0,405	0,414	0,009	1,02	0,153	0,152	–0,001	0,99	0,306	0,279	–0,027	0,91
45–49	0,480	0,632	0,152***	1,32	0,236	0,304	0,068*	1,29	0,413	0,471	0,058*	1,14
50–54	0,550	0,760	0,210***	1,38	0,265	0,409	0,144***	1,55	0,495	0,588	0,092***	1,19
55–59	0,629	0,834	0,205***	1,33	0,411	0,437	0,027	1,07	0,599	0,655	0,056	1,09
60–64	0,541	0,740	0,199***	1,37	0,239	0,383	0,144**	1,60	0,512	0,625	0,113***	1,22
65–69	0,477	0,586	0,109**	1,23	0,285	0,316	0,031	1,11	0,462	0,524	0,062*	1,13
70+	0,386	0,403	0,017	1,04	0,269	0,294	0,024	1,09	0,380	0,389	0,009	1,02

A standard two sample t-test; \*\*\* p < 0,001; \*\* p < 0,01; \* p < 0,05.

**Table 6.** Age standardized mortality rates (SMR, 1/1000 person-years) by educational attainment 1986–89 and 2002–05 and their ratios.

Cause of death	[Suicide]		[Alcohol-related mortality]	
	1986–89	2002–05	1986–89	2002–05
Males, with elementary education at most (a), SMR	1,18	0,84	1,53	1,88
Males with at least secondary education (b), SMR	0,47	0,31	0,61	0,74
Males elementary/ secondary ratio: (a) / (b)	<b>2,6</b>	<b>2,8</b>	<b>2,5</b>	<b>2,5</b>
Females with elementary education (c), SMR	0,38	0,19	0,43	0,50
Females with at least secondary education (d), SMR	0,36	0,10	0,21	0,26
Females, elementary/ secondary ratio: (c) / (d)	<b>1,1</b>	<b>1,9</b>	<b>2,0</b>	<b>2,0</b>

Women's mortality due to alcohol also decreased only in the youngest age groups, but increased in all middle aged groups, both among the less and more educated, although the difference between the rates is not significant for some age groups among those women having at least secondary education. The rates are rather similar in the beginning and at the end of our observation period in the oldest (70+) age group (Tab. 5).

Social disparities in suicide were large for males and almost non-existent for females. Age standardized suicide mortality was 2.6 times higher among poorly educated men in 1986–89. The extent of inequalities did not change until 2002–07 – it has grown only to 2.7. In contrast, among women social disparities grow significantly: by 2002–05 poorly educated women committed suicide 1.9 times more frequently, than women with at least a secondary school degree. Alcohol-related mortality already showed a considerable social pattern in 1986–89. Alcohol-related mortality was 2.5 times higher among males with elementary education than among those with a higher degree. The corresponding figure for women was 2.0. Surprisingly, none of the values regarding alcohol-related mortality had changed by 2002–05.

## Discussion

Based on the Mertonian approach the formulation of a hypothesis on changes of social anomie is far from unambiguous for the Hungarian society following 1989. Focusing on those domains, which have been the subject of research most frequently on suicide based on anomie, namely, income conditions, unemployment and family interconnections, it was reasonable to assume, that at least for some social groups (older people, women in general, and men and women with higher education) the social environment became less anomic during the last two decades. Based on Merton's classic approach we would expect that both suicide and alcohol-related mortality would decrease more clearly in these social groups than in others, even if the changes in alcohol-related death lagged behind that of in suicide.

The results do not exactly show the expected effects. Overall, age, education and sex-specific suicide trends seem to be more parallel with changes in the nature of interpersonal relationship, while overall alcohol-related mortality responded more sensitively to economic conditions.

The result might be influenced by the fact, that an unlinked design was used. In these cases the distortions caused that the source of mortality and population data are different (numerator-denominator bias) cannot be ruled out.

Before the detailed examination of the results, the question of the validity of suicide and alcohol-related mortality data

should also be addressed. Only one aspect of accuracy of data will be discussed, which might have particular importance in the recent Hungarian context. The possible influence of the success of suicide (secondary) prevention in connection with the mode of committing suicide has already been discovered in the British context.<sup>21</sup> In Hungary, the dominant mode of suicide is hanging – a way which is the least questionable from the point of view of accuracy of the diagnosis. But women and younger people often commit suicide by taking medications or other poisons. The proportion of suicides committed in this way decreased more during the study period than the overall reduction of suicides. This fall can be “artificial” if it is driven by “outside” factors, such as improving emergency services. Although the trend of performance indicators of the emergency services does not support these hypotheses, a closer examination of medication-poisoning suicides would need to rule out this factor completely.

Alcohol-related death, especially cirrhosis mortality is often considered in the literature to be outstandingly high in Hungary.<sup>22</sup> It can be assumed, that in autopsy practice cirrhosis is diagnosed too often as underlying cause of death, rather than as a secondary cause, taking into account the fact, that general practitioners tend to “over-diagnose” cirrhosis among living patients. On the other hand, there is no reason to assume that the practice has changed over time. For this study, we assume an accurate diagnostic practice, since only a detailed examination of underlying and secondary causes of death could prove the opposite.

Discussing the results in more detail: the significant reduction of sex, age and education specific suicide rates generally happened in the expected direction. Suicide has fallen more among women than men, more among the elderly than among the middle aged, more among the better educated than among the less educated. The only unexpected result is that there was virtually no reduction of suicide among the well-educated men belonging to the age groups between 40 and 54.

Unlike suicide, alcohol-related mortality did not fall, but has risen, proportionally in each specific age and education group. Based on our hypothesis this is an unexpected result. Relatively, the rise was of mortality was above the average for middle aged, well-educated women.

The findings can be interpreted in at least three different and alternative ways. The first possible theoretical position is to maintain the applicability of the Mertonian (Durkheimian) theory for suicides and alcohol-related mortality by assuming the operation of a strong “underlying” factor for the latest. In Hungary, the perfect candidate for the position of this underlying factor is availability, which is virtually unrestricted since 1989, and the lack of any regulative policies (except drink-driving regulations) from that time. Changes in drink-

ing habits, and changes in treatment options, however also can act as strong modifiers of alcohol-related death. Patterns of alcohol consumption show that the consumption of the well off increased and that of the poorer decreased. Drinking patterns are, however, more favourable among the social classes with higher positions, tend to be a Mediterranean type of drinking, while among the less well-off low quality alcohol is more common.<sup>23</sup> Within this framework, the relative changes of the positions of the different socio-economic and demographic groups can be considered as parallel, except for the contradiction between suicide and alcohol-related deaths of highly educated middle-aged women. The latter fact, thus, remains unexplained under this explanatory framework.

The second type of interpretation partly withdraws alcoholism from the concept of deviant behaviour. Acknowledging that excessive alcohol consumption has a meaning of deviancy in Hungarian society, it is also known that alcohol consumption is a multi-faceted phenomenon. It can serve as “smoothing communication” under certain circumstances or it can be the price of status representation. These competing meanings can overshadow the deviant feature of drinking in certain social groups under certain circumstances. This explanatory framework would allow us to explain the divergence of trends of suicide and alcohol-related mortality.

The third alternative explanation would be based on a modified Mertonian approach, and today represents an entirely open field for social theory. In Harary’s approach, for instance, the relation to social values and means is not only negative or positive, but can be indifferent or ambivalent. Unlike Merton, Harary for example, makes a further distinction between simple negative perception of norms and the

innovative rejection of norm accompanied with a replacement of a new norm.<sup>24</sup> In this way altogether five different types of relation can be distinguished both regarding norms and means, resulting in a rather detailed classification for deviant behaviour. Assuming the complexity of norms regulating the life of an individual, it can also be assumed that a different set of norms and a corresponding set of means involve different components of an anomic social environment. In this approach, certain parts of our value system (and the accordance or non-accordance with the proper means) would provoke suicidal behaviour, while others would provoke alcohol consumption.

Although the theoretical foundation of a modified Mertonian approach is far beyond the scope of this article, the results of the empirical investigation demonstrated that forgotten attempts to improve Merton’s theory, just like Harary’s, might have a potential benefit for theoretical foundation of understanding recent developments of deviant behaviour, especially in rapidly changing societies, from which secular tendencies of suicide and alcohol-related death were reported.

Despite the limitations of our study, the results allow us to conclude that a profound and substantial change of the magnitude and patterning of suicide and a relative persistence of the magnitude and patterning of alcohol-related mortality could be witnessed in Hungary in the last two decades. From the practical point of view of public health preventative and treatment efforts, which are spent on self-destructive behaviour should be reorganized, favouring the alleviation of alcohol problems. Social inequalities in alcohol-related mortality should also be addressed, providing more targeted services for the socially less advantaged.

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