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Social status differentiation of leisure activities variation over the weekend – Approaching the voraciousness thesis by a sequence complexity measure

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Abstract

Sullivan and Katz-Gerro (2007) as well as Katz-Gerro and Sullivan (2010) argues that engaging in a variety of leisure activities with high frequency is a distinct feature of omnivorous cultural consumption. And like omnivorousness it bears a status-distinctive characteristic. The authors reported, that high status social categories show a more voracious leisure time-use pattern, i.e. engage in a greater number of activities with higher frequency over the period of one week. In this paper we are examining the voraciousness thesis by utilizing a newly proposed measure of activities variety, namely the sequence complexity index, which is developed by Gabadinho et al., 2011. Using data from German Time Use Survey (2000/2001) we focus on cultural leisure activities reported for the weekend. Our results show that complexity as a measure of time-related variety captures significant social differentiation of leisure activities over the weekend. But our complexity-based findings do not support that, that voraciousness understood as high levels of time used for varied leisure activities is also significant at weekend. Beyond that the results support the assumption, that there is social structural framing of a Saturday, where gender, age and marital statues effects on leisure variation come into effect.

JEL-Codes: D13, D19, J17, Z1, Z13

Keywords: Time use, leisure, social inequality, complexity, time pressure, Germany

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1 Introduction

Twentieth century faced a substantial growth in the average amount of leisure time in post-industrial societies. Comprehensive analyses by Gershuny (2011) show that the time of paid work in the developed countries has declined on average by 27% net over the four decades from 1961 to 2001. Over that time, working patterns have also changed substantially and – it seems – irreversibly.

It seems obvious, that this social change in time use affects social status differentiation and distinction patterns. Most prominent Katz-Gerro and Sullivan (2010) and Sullivan and Katz-Gerro (2007) extend the argument, that in the context of egalitarian consumption resources a social differentiation pattern is characterized by cultural omnivorousness (see Peterson and Kern (1996)). Accordingly cultural omnivores are *"an upper class that experiences and appreciates a variety of cultural tastes: highbrow, middlebrow, and lowbrow."* (see Katz-Gerro und Sullivan (2007, p. 124)).

As the trend of acceleration encompasses all areas of human life, the increased temporal fragmentation is not expected to be restricted to professional realm only. The efficiency-maximizing attitude might make people willing to use their leisure time 'to the fullest', tempted also by the multiple time-spending options available in the market. The possibility to benefit from them depends, naturally, also on the financial and cultural resources, which correlates with social status. People with more socio-cultural and economic resource will engage in a greater number and variety of activities, not only because they are more able to, but also because they need an additional line of status distinction. As Sullivan and Katz-Gerro write: *'In a setting characterized by fluctuations and discontinuities, individuals assert a personality by adopting habits, styles, and fashions that make them stand out'* (see Katz-Gerro and Sullivan (2010, p.125)). Compression and intensification of experiences becomes thus not only a way to keep up with the accelerated pace of life but also a means to ascertain one's social position.

From this background Katz-Gerro and Sullivan (2007) proposed an extension of the omnivorousness thesis by introducing the concept of voraciousness as a theoretical variation of omnivorousness (see Katz-Gerro und Sullivan (2007, p.123f.)). While cultural omnivorousness (as defined by Peterson and Kern (1996)) distinguishes between highbrow and lowbrow tastes in assessing the range of consumers' tastes, the concept of voracious cultural consumption is based on the *extent of participation* in various out-of-home leisure activities, and relates both to the range of those activities (reflecting the diversity of an individual's cultural repertoire) and the frequency of participation in them (characterizing the turnover rate, or 'pace') (see Sullivan and Katz-Gerro (2010, p.193)).

As Katz-Gerro and Sullivan (2010) contend, voraciousness, like omnivorousness, is associated with being better educated, being located in an upper-class position, and having a higher

income (Peterson and Kern (1996); Warde et al. (1999); Van Eijck, (2001); López-Sintas and Garcia-Álvarez (2002)). In particular, the voracious consumer has high social status in terms of human capital, economic capital, and cultural capital. Moreover, voraciousness, like omnivorousness, is also particularly characteristic of adults living alone or younger couples without children. In other words, it seems that omnivorousness and voraciousness represent two related dimensions of the consumption of leisure and tastes in contemporary western societies.

We see several shortcomings in the empirical corroboration of the concept of voraciousness as social status differentiating behavior as being claimed by Katz-Gerro and Sullivan (2010) and Sullivan and Katz-Gerro (2007).

First, it seems not meaningful to prefer self-reported data over time-use data, if one is interested in the actual activity patterns and their differentiation by social status. Katz-Gerro and Sullivan (2010) and Sullivan and Katz-Gerro (2007) used data from the first wave of 'Home OnLine'[2], a representative British national panel study of adult individuals in households, which was conducted in 1998.

Although the 'Home OnLine' data set provide face-to-face interviews were conducted with all adult members of the household. In addition, interviewed respondents were provided with a week-long diary in which to record what they were doing each day of that week every fifteen minutes of that day. A comparison of the diary and the questionnaire measures showed similar means and distributions (see Sullivan and Katz-Gerro (2007, p.128) for further details) indicating that, from this data, the diary and questionnaire responses show a good fit for the weekly frequency with which people participate in particular activities. The advantage of the questionnaire measure is that, as is usually found, a larger number of respondents answer the survey questions than complete their diaries.

By using self-report data one cannot exclude their mixing self-presentation expressions and actual behavioural patterns. Therefore it seems more adequate for examine actual cultural consumption to rely on time-use data instead of self-report data, even the sample size is lower of time-use data then for self-report data. In that case, a smaller sample provides a conservative empirical test of assumed group differences.

Second, we see a significant shortcoming by using the number of different out-of-home activities, which are practiced at least once a week. Actually this measure does not take the core aspect of voracious behaviour into account, namely the amount of time which is invested in different activities. By focusing on people, which are doing the leisure activities at least once a week, they exclude those groups with less activity frequencies. So they limited the range of variation by pre-selection. Further, they do not take into account that in characterizing variety of activities, time consumption is also significant. It blurs substantial differences in variety, if for example one treats these two patterns a) and b) of three different activities with the same class of variety: in pattern a) one of the three activities would occupy 80 percent and the other

two 10 percent each of the time budget, while in pattern b) for all three activities the same amount of the time budget would be used.

In sum, the empirical indicators of frequency of different activities do not adequately operationalize their conceptual features of voraciousness of high time variation in leisure activities.

Third, it seems necessary to take social organization of leisure time into account for social status differentiation of leisure time activities.

Increase in the amount of time free from work has certainly owed much to the popularization of the two-day weekend. What now might be taken as an axiom in the developed economies is a relatively recent development. Previously, the traditional one day of rest stemmed from religious norms and was meant to enable people to engage in religious celebrations.

In the 20th century consumer society, a single day of rest turned out to be insufficient. When new (secular) needs came into play, a change in social time use patterns was needed. Greater amount of leisure time became an economic and social necessity – the growing number of goods required time to be sold. Leisure – previously regarded as idle and futile – has eventually come to be seen as economically productive. Another day off work was in line with the expectations of the consumer market, policy makers and social actors calling for greater consideration for the working population.

Since working hours differ greatly even across the working/ learning population, leisure time available within the week may be a subject to high variance. However, weekend is a relatively long period of theoretically undisturbed leisure that is time, when most of the population does not perform any paid work (see Gershuny (2011)). At weekend there is high prevalence of participation in discretionary activities over the weekends (see Lockwood et al. (2005)), as well as much more joint activity participation on weekend days relative to weekdays (see Srinivasan and Bhat (2006)).

So from this background weekend days seem to be the social time arena, where manifestation of social status differentiation by leisure activities could be expressed most significantly. We deliberately decided to concentrate on the usual weekend activities and not to claim representativeness for usual activities over the whole week.

So our study is aimed at examining the voraciousness thesis by overcoming the shortfalls of the Sullivan/Katz-Gerro approach, namely by a) using time-use data on main activities, b) focusing the analysis to leisure activities over the weekend, and c) applying an index of variety, namely the complexity index proposed by Gabadinho et al. (2011), which takes time consumption variation into account.

2 Data and methods

We used the 2001-2002 dataset of the German Time Use Survey (GTUS), a study carried out on the representative quota sample of private households in Germany (including also

foreigners' households) [1]. Social categories excluded from the research were persons without permanent home, and persons living in collective dwellings or institutions. In total, it covered the sample of 5 400 households, whose members aged 10 years or older filled in a diary for three week days. It covered two consecutive days and one day of the weekend (Saturday or Sunday). To avoid seasonal distortion it was carried out over the year – split into four samples covering four different periods. This led up to a sample size of 12 600 persons and about and 37 700 diaries.

Time-use diaries provide information on the authentic 24-hours routines disaggregated in 10-minutes time slots. The data was collected using open questions and the records are episode-based, hence avoiding numerous biases being a problem in survey-based time accounts. For each time slot, GTUS time use diary recorded main activity, secondary activity, persons present, location and means of transport (if applicable).

While the study design allows for household context effects by capturing multiple members of a household, we selected randomly one person of each household to be included in our data set, because the theoretical approach we are dealing with is focused on individual voracious behavior.

Further, we restricted the age distribution of the data set to be analyzed in this paper, because GTUS 2000/2001 covers the sample of people aged 10 and older. From the background of the voraciousness concept, which is focused on life patterns mainly organized by full time labor market or educational activities, it seemed reasonably to analyze leisure time patterns of only respondents older than 16 and below or equal 65 years.

Leisure activities

In relation to leisure activities we follow Sullivan and Katz-Gerro by selecting five activities to be examined according their time-related variety, namely:

- going to the cinema/concert/theatre or other live performance
- eating/drinking out in a restaurant, café or pub
- playing sport/keeping fit/walking
- watching live sport
- participating leisure activity groups.

The GTUS, like other The HETUS[2]-type studies, recorded up to two activities for each time slot, yet, for the simplicity of analysis we decided to take into account only the primary activity. Secondary activity is regarded as one that accompanies the primary one (they are conducted simultaneously within the same time slot), however, it is the primary activity that mostly

[1] The Survey was carried out by the Federal Statistical Office, on behalf of the Federal Ministry of Family Affairs, Senior Citizens, Women and Youth.

[2] HETUS: Harmonized European Time Use Survey carried out in the EU countries and coordinated by the Eurostat.

determines the character of particular time slot and sets it within a particular context (in this case: leisure/ non-leisure). Moreover, the practice of recording primary activities only has been widely used, e.g. in the American Time Use Surveys. Excluding secondary activity, however, has numerous drawbacks that we are aware of, and they become problematic in case of more complex studies incorporating the elements of interference between the prime and secondary activities. Nevertheless, primary activity record is sufficient for our analysis at its present stage, namely describing time sequences of primary activity over the weekend in terms of their time and category and variability of activities, which amounts to the general leisure complexity.

Measuring time-related variety in activities

We found the complexity index by Gabadinho et al. (2011) fitting best to the conceptual definition of voraciousness as it is designed to grasp both the variation of activities within a sequence of activities as well as the amount of time, which is consumed for each kind of activity. The following equation was proposed by Gabadinho et al.,

$$C = \sqrt{\left(q/q_{\max}\right)^2 \Big/ \left(h/h_{\max}\right)^2} \tag{1}$$

where q means the transition rate of change between spells of activities over one individual activities sequence and $q_{\max}$ is the maximum transition rate in sequence. $q_{\max}$ actually captures the time length of activities sequence. Further, h denotes the entropy of a sequence of activities and $h_{\max}$ denotes the maximum entropy of a sequence built by a specific set of different activities. It might support the understanding of the complexity index by going into the meaning of the different parts of the C equation.

The first sub-indicator $q/q_{\max}$ captures the time variation of activities over some period of time, by counting the number of the actual number of transitions in the sequence q, and normalizing them to the maximum number of possible transitions in one sequence $q_{\max}$. Transitions are changes of activity type from one moment to next moment. As the used data of GTUS recorded activities on a 10 minute time scale, transitions are changes of activities from one 10 minute interval to the next 10 minute interval. Actually the maximum number of transitions denotes the total length of the observation time period (minus 1). So by dividing the actual overall number of activity changes by the maximum possible number of change, the individually differing total measurement time (which is the waking time) is taken into account. It is a kind of normalizing the individual variety in time use. The larger this sub-index, the more people change their activities over the day.

The second sub-indicator $h/h_{\max}$ is aimed at grasping the variety of activities itself. Gabadinho et al. utilize the entropy concept to get an adequate measure of type of activity variation. Similar to the first sub-indicator, the actual entropy of activities in a sequence is normalized by dividing it by the maximum possible entropy, which is determined by the size of the set of leisure activities.

To get more insight into this feature it might be helpful to explicate the meaning and calculus of entropy. Gabadihno et al. use the concept of Shannon entropy.

Accordingly entropy denotes the distribution of informational states in a sequence of states. If the different possible states (which are given by a specific set of states, or "alphabet") are distributed evenly over the whole sequence of observed states, the entropy has its maximum score, which means that the probability of observing a specific state is independent of the timing in the sequence of activities. So, given an alphabet of 2 distinct states, very high entropy is reached if at every moment of the sequence both distinct states of the alphabet are observed. A very low level of entropy is given, if there is only one distinct state is observed over the whole sequence. In this the case the probability of observing this state would be 1, which means no variation.

The entropy measure to indicate variety of activities has an important difference to the mere counting the number of different activities over some defined period of time, namely the time extension of one activity. The frequency of different activities does not take into account the time extension of an activity. For example, if someone does two different activities over his leisure time period of 10 time intervals, he gets the frequency score of 2, nevertheless if he uses 9 time units for one activity and 1 time unit for the other activity. A person dividing his time of 10 units equally two both activities (with 5 for the one activity and 5 for the other activity) would have also been assigned to them same variety score of 2. But his entropy score of variety would different, namely lower, because time is more varied distributed over the two activities or vice versa. It seems straightforward, that a person who follows two different activities with the same amount of time is characterized with more variety preference than a person, who actually focuses on one activity and marginally practices a second activity.

One might made objection against the complexity index, because of following methodological reasons. As complexity is assessed over waking time, whereby time spent on the five selected leisure activities can vary across individuals. Hence, the numerator of the first sub-indicator included in C is going to be increasing in the amount of time spent on those five activities, and the resulting indicator contaminated by a dimension of leisure (its quantity) whose relation to complexity is unknown. It seem reasonable, that amount of time spent for leisure activities overall is determined by the total amount of waking time. But the construction of the complexity index takes this methodological problem into account by normalizing the individual transition rate and entropy by the total transition rate, which actually is the waking time.

In sum, from our point of view, the complexity index seems to be the most adequate operationalization of the voraciousness concept.

Indicators of socio-economic status

Like the omnivorousness hypothesis the voraciousness hypothesis is linked to social class status differentiation. Katz-Gerro and Sullivan follow Bourdieuvian theory (Bourdieu (1984); Katz-Gerro (2004); Chan and Goldthorpe (2007)) in measuring social status by socio-

economic and cultural resources, namely educational status, occupational status and economic status as it is indicated by net household income. Additionally they use information on the kind of newspaper people are reading as indicator for cultural capital.

Given by the GTUS 2001 dataset, we could utilize highest general educational status, occupational status and net income status as indicators for cultural, social and economic capital. Data on newspaper reading preferences were not available.

To control confounding with age, gender, household size and family status, we included these variables as covariates in a multiple regression model.

Estimation method

The complexity index of diurnal cultural out-of-door activities by construction, ranges from 0 to 1, so it seems adequate to apply fractional regression approach to take into account ceiling and floor effects of the distribution (Papke and Wooldrigde (1996)). To accomplish this we used a generalized linear model (glm) with a logit link and the binomial family. We included the robust option in the glm model to obtain robust standard errors which will be particularly useful if we have miss-specified the distribution family.

Because in some cases participants filled in the time use diary for Saturday and Sunday, the data are inflated by repeated measurements, which cluster on the case id. To take this into account without a loss of data, and not to negate the need for independent observations, we used the STATA's VCE-approach, `which` requires only that from cluster to cluster the observations are independent.

3 Results

In a straightforward step of analysis we estimated complexity scores of higher socio-economic status groups with lower economic status groups in a multivariate fractional regression model, controlling for gender, age, household size and marital status.

With this model we did not find the expected net positive social status effects on the complexity, which means kind and time variation of leisure activity complexity over Saturday and Sunday.

Instead we find that middle educational groups show a less complexity score than low and high education status groups. For blue collar and white collar classes as indicators for lower and middle class status we do not find significant differences. Self-employed tentatively show a less varied leisure patterns on the weekend than people with blue collar occupations.

From the background of these unexpected results, and because there might be a differentiation to different social organization of Saturday and Sunday activities, we split the data set into activities done on Saturday vs. Sunday.

Table 1
Effects of education occupation and income status on complexity of leisure activities by weekend overall and day of weekend

Reference category predictor	Weekend overall	Complexity of leisure activities on Saturday	Complexity of leisure activities on Sunday
Education status			
High education status	-0.16	-0.88	-0.08
Middle education status	-0.14*	-0.07	-0.17*
No education status	-0.00	0.07	-0.03
Household net income	-0.02	-0.08	0.04
Household net income squared	0.00	0.01	-0.00
Occupational status			
Self-employed	-0.20*	-0.39**	-0.07
Official	0.04	0.03	0.04
White collar	0.03	0.06	0.03
Commercial. technical apprentice	-0.11	-0.26	0.12
Industrial apprentice	-0.47*	-0.58*	-0.38
Gender	-0.16**	-0.16*	-0.17*
Age	-0.07**	-0.10**	-0.04*
Age squared	0.0007**	0.001**	0.0005*
Household size	0.05*	0.08*	0.01
Marital status			
Single	0.16*	0.30*	-0.00
Divorced	0.23*	0.49**	-0.06
Widowed	-0.02	-0.08	0.09
Living apart	0.59**	0.85**	0.33
n	4177	2132	2127
Log pseudolikelihood	-1218.14	-492.45	-687.67

Note: Reference categories: low education status; blue-collar worker; man; married.
** denotes p<.01. *p<.05. +p<.10. Weekend stands for Saturday and Sunday.
Control variables: Gender, age, family status and household size,
Method of estimating b-coefficients: Fractional Regression, ML.
Source: GTUS 2000/01, own calculation.

We find that the comparatively lower complexity of middle education status group is significant only for Sunday activities not for activities on Saturday.

Age, household size and marital status seem to be social structures which are related to leisure complexity only on Saturday activities. The well-established gender effect on leisure, with men showing more leisure activities than women (Katz-Gerro and Sullivan (2010, p.209)) could be also found for leisure complexity with women showing less leisure complexity than men, for Saturday and Sunday leisure activities.

In sum we find little support for the voraciousness thesis by using complexity as an indicator for time and type of activity variation on weekend days.

This result – together with the finding that the social structural indicators like age, sex, family status and household size are effective on Saturday only, underline the social setting of Saturday as weekday which offers opportunities and restrictions for leisure activities, by which social differentiation gets effective.

That social status by occupation does not find expression in leisure variation might be due to being social categories of blue collar and white collar, which are not valid and any more in 2000 because of increased heterogeneity.

Interestingly our results show that, low and high educational status groups show up similar higher complexity scores than middle educational status only for activities followed on Sunday. The reasons for this unexpected pattern of social inequality might be rooted in in similar needs for entertainment variety but different needs for entertainment quality with people in lower educational status have more entertainment variation interest and high education status groups more cultural variation interest. People of middle educational status could be understood as belonging to petty bourgeois. According Bourdieu (1979) a typical life style of petty bourgeois is characterized by temporarily relinquishment of consumption, aimed at distinction from lower classes and aspiration to climbing up to higher social class. So people with family oriented leisure patterns would focus more on in-home rather than out-of-home leisure activities.

4 Conclusion

Indicating variability of out of home time use of leisure activities at weekend by using the complexity index of Gabadinho et al. (2011) we could not replicate generally the results of Katz-Gerro and Sullivan (2007, 2010) about the social status thesis of voraciousness. Interestingly there is a hint to social class differentiation by our finding that middle educational status group has a leisure activity pattern with reduced complexity, which seems to be in line with petty bourgeois life style described by Bourdieu.

In general our scarce support of the social status hypothesis of voraciousness could be understood from several points of view: a) the complexity index of leisure activities does not capture social class differences, because time opportunities and time constraints at weekend produce similar time variations. On the other side we find differentiation by non-vertical social structural status. We further found horizontal differentiation by age and family and household life cycle on the time complexity of leisure activities over the weekend, especially by our result, that women have less complex leisure activity patterns on weekend, we could corroborate findings, that women relative to men show up less active, intensive, individual leisure time (see Mattingly and Bianchi (2003)); b) focusing on the weekend time use might be a too narrow time span for opportunities to express social status differences, as the amount leisure frequencies needs to pile up over longer time spans to get socially significant. On the other side, weekend by social organization provides most free time to be used for leisure activities;

c) as the data represent German population it might be, that social class differentiation of time and category variability is not that significant like in UK, where social status differentiation is more expressed in life style and d) it might be that the reason for no social differentiation of out of home activities is due to the fact, that activities like going to a restaurant or cinema, theatre or sport performance usually are embedded in organizational settings, where time fragmentation is heavily prevented.

Overall our findings support the assumption, that voraciousness measured by a complexity indicator of leisure activities variety is reflected also in weekend activities. Socio-structural conditions of restricted time budgets given by like family status, gender, age and household size seem to be more effective than hierarchical social status categories like economic or educational resources. Social status effects on leisure activity variations seemed to be more related on structural time budget restrictions as we found reduced leisure activity variety for self-employed, whose working time usually is not restricted by law and social regulation to reach into weekend. This result is in accord with findings of Merz and Rajthen (2011), who found that professionals and entrepreneurs are to be classified as time-poor compared to employees.

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