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# Living Conditions, Socio-Economic Risks, Inequality and Health. Establishing New Theoretical Foundations and Closer Empirical Linkages

*ABSTRACT: The article presents new theoretical as well as empirical perspectives which strongly contradict the conventional wisdom on the inter-relationships between living conditions, socio-economic risks, social inequalities and the state of health within and across contemporary societies.*

*KEY WORDS: Living conditions, Socio-Economic risk, Social Inequality, Health*

Part I will summarize the "received views and will show that from a theoretical point of view the problem of linking living conditions, conceived in a diversified and multi-dimensional manner, inequality, socio-economic risks and health simultaneously has produced, so far, an empty set of conceptual solutions. Multi-dimensional approaches towards living conditions, running under the headings of life-styles, have lost their vertical inequality dimension, conceptions of contemporary risk societies have been constructed beyond the domains of socio-economic living conditions, viable research traditions on stratification and inequality bear no relations with health issues and current research on inequality and health uses a very narrow focus of economic inequality and income distribution only. From an empirical perspective though, the need for integrating socio-economic risks, living conditions, broadly understood, inequality and health is of only marginal relevance since the linkages between these different domains, expressed in statistical measures like correlation coefficients, are comparatively weak and, moreover, are undergoing a process of gradual dissolution.

Within Part II, a new evolutionary approach on socio-economic risks and on socio-economic risk groups will be introduced which embeds risks into objective as well as subjective dimensions of living conditions. Additionally, the new operationalization of socio-economic risks will be accompanied by the introduction of a complementary notion, namely by the concept of socio-economic life chances. Consequently, socio-economic risks and life chances will be used for the construction of a new vertical scale for societal inequalities and disparities, with risk-accumulation on the lower end of the scale and life chance accumulation on the upper end. Moreover, the new vertical scale on inequality will be able to capture the multi-dimensional and heterogeneous aspects of post-industrial or, alternatively, postmodern lives.

In Part III, it will be demonstrated that the new vertical scale based on risks and chances fulfills the essential empirical requirements for a measure of social inequality. Using the EUROMODULE-data from five countries (Switzerland, Germany, Spain, Slovenia, Hungary), it will be shown that socio-economic risk accumulation is accompanied by low income and by low degrees of education and qualifications and affects a significantly higher proportion of women whereas, towards the upper end of the scale, accumulated life chances are strongly linked with high income, high qualifications and a significantly higher share of the male population.

Part IV will extend the new platform on socio-economic risk-analysis and inequality to the health domain. In doing so, it will generate surprisingly strong and powerful linkages between the position on the new inequality scale and overall life satisfaction, on the one hand, and the state of health on the other hand. More concretely, the new approach towards risks and inequality will provide substantially new empirical evidence on the direct impact of unequal socio-economic living conditions on overall life satisfaction, on the state of health in general and on ailments, mental health or sicknesses in particular.

Towards the end of the paper, a short note on the neuro-physiological basis for these new patterns will be provided which should give additional justification to the new evolutionary perspective on multi-dimensional living conditions, socio-economic risks, inequality formations and the state of health.

The article will start with a summary of guiding assumptions and empirical hypotheses which capture the essence of the available knowledge base in the interface domain of living conditions, socio-economic risks, inequalities and health. As often, niche-buildings, disciplinary boundary formations and gate-keepings within the social sciences, social psychology and medical research have created as a largely un-intended side-effect a practically empty set of theoretical answers for the important questions on the inter-relationships between living conditions, inequalities and health on the one hand as well as a powerful empirical justification on the irrelevance of establishing such an interface-platform on the other hand.

## 1. The Conventional Wisdom on Socio-Economic Risks, Inequalities, Multi-Dimensional Living Conditions and Health

The conventional wisdom on the linkages between living conditions, inequality, risks and health can be captured in the following eight guiding assumptions, five of them theoretical, three empirical in content:

- First, multi-dimensional approaches on living conditions (see esp. Schulze 1992) have become, by and large, horizontally stratified, loosing their vertical dimensions in the course if widening the relevant socio-economic dimensions. Thus, current life-style frameworks, while focusing on a broad range of living conditions and socio-cultural practices, have become by and large unable to arrange the resulting life style formations into a vertical ordering.
- Second, with respect to Weberian or Neo-Weberian approaches (see e.g., Blau/

Duncan 1967, Giddens 1973, Hodge 1981), the main emphasis on social inequality goes hand in hand with substantial restrictions on the admissible set of socio-economic resources and living conditions. In sum, the actual space utilized for the Weberian status groups is only covering a small domain of the much broader range of post-industrial lives (Hage/Powers 1992).

- Third, current class-approaches with multi-dimensional scope and vertical stratification, especially the frameworks by Pierre Bourdieu (1982/1985) or Eric Olin Wright (1997), exhibit significant shortcomings to incorporate the domains of socio-economic risks and health conditions and are in all probability ill-suited to be able to integrate these field into their research program.
- Fourth, the concept of risks and risk-societies has been developed, especially within the German sociological tradition, in a highly specialized manner, restricting the notion of risks to contemporary technological advances within a post-industrial societal development stage (Beck 1986) or to decisions under conditions of uncertainty and accountability (Luhmann 1991). Thus, within current societal risk-research, no pattern between risk-societies and social inequalities or health has been established.
- Fifth, recent advances in linking health with socio-economic conditions (especially Wilkinson 1996), have been concentrated on a small set of economic variables only and have, thus, neglected the multi-dimensionality of contemporary living conditions. Besides, the wide arena of socio-economic risks, apart from monetary risks, has not been incorporated within the fifth theoretical tradition.

In effect, a trade-off has been produced between a new emphasis on postmodern living conditions and a new wave towards individualization on the one hand and vertical stratification on the other hand. Interestingly though, this trade-off can be substantially reduced in its cognitive impact since three essential empirical findings have been identified on the relatively weak or marginal linkages between multi-dimensional living conditions, socio-economic risks, inequality and health.

- Sixth, the linkages and correlations between essential dimensions of living conditions, traditionally associated with social inequality like qualifications or income, and subjective general performance assessments like overall life satisfaction turn out to be significant, though rather weak.[1]
- Seventh, significant, but moderate and weak linkages only can be identified between the key indicators of vertical inequality like income and education with the general state of health.
- Eighth, for highly advanced societies the links between core-inequality indicators like income or education with subjective self-assessments are considerably weaker than in the transformation societies of Central and Eastern Europe or for advancing societies in general. Similarly for the health domain, the correlations between inequality indicators and health become weaker still in the case of highly advanced nations.

Thus, the course of modernization or post-modernization produces apparently a pattern of growing independence between overall self-assessments, health and the cognitive-emotional organization of actors on the one hand and their socio-economic resources and

living conditions on the other hand. Within the first section, these eight guiding assumptions will be discussed in greater detail and with the help of empirical data as well.

### 1.1 The Failures of Incorporating Inequality and Risks into Multi-Dimensional Approaches of Living Conditions

The first path within the current theory space along the dimensions of multi-dimensional living conditions, risks, inequality and health starts with a broad view on living conditions, synthesizes and clusters these multiple dimensions into different "life styles" and looses in the course of clustering the vertical dimensions of inequality or socio-economic risks for that matter.

The subsequent discussion will have its focus mainly on Gerhard Schulze's book on „Erlebnisgesellschaft" (1992). Here, a representative sample of roughly 1000 persons from the city of Nuremberg has been selected and a large number of questions on cultural practices or on daily routines of information gathering have been asked. In the theoretical core of Schulze`s work lies a universal social grammar (Ibid 243pp.) which, at least according to Schulze, is capable to detect and identify hidden homologies between inhomogeneous and seemingly contradictory or incoherent domains. At various places, Schulze speaks of a latent pattern which connects diverse surface appearances or of a universal pattern in the relation between actors and their environment or worlds (Schulze 1992:36).

Essentially, Schulze uses age and education as the basic socio-demographic dimensions in order to differentiate between five different milieus or lifestyles, namely between an entertainment-milieu (age low, education low), a harmonious milieu (age high, education low), a self-realization-milieu (age low, education high), an integrative milieu (age high, education medium) and a distinctive high-level milieu (age high, education high). Each of these five milieus is characterized by specific recombinations between dominant forms of style which are summarized under the headings of high culture, trivial culture or excitement/event culture.

Within the present context, the most important critical finding lies in the fact that the new life-style typologies which have been able to integrate large proportions of everyday routines and cultural practices, widely conceived, have lost the vertical dimension of inequalities almost completely. While these five life-styles can be arranged within a two-dimensional field, consisting of degrees of education on the one hand and age on the other hand, vertical distances and vertical inequalities have been largely reduced and replaced by horizontal disparities of self-contained clusters of socio-cultural practices. Additionally, classical problems of upward and downward mobility are substituted by new rites of passage, with age being a key determinant to change from one lifestyle-cluster to the next. Furthermore, problems of inter-generational inequality and mobility seem to have been reduced to marginal issues since the universal grammar sub specie Schulze reproduces these different clusters in the way it is supposed to reproduce them, namely universally. Finally, the potential space for socio-economic policies has been greatly reduced, too, since these self-sufficient clusters do not lend themselves easily to intervention or compensation.

Apparently, Schulze's analysis and many other life-style studies[2] are subject to a critical trade-off which can be summarized in the following manner. Relying on a a small number of objective inequality indicators like income, education or status looses its linkages with overall self-assessments rapidly since many aspects and dimensions of cultural and everyday practices have not been included. Taking the diversified set of habits and routines in areas like information, housing, arts and culture, media or fashion into account, the resulting life styles have lost their connections with vertical dimensions and inequalities almost completely.

### 1.2 The Failures of Incorporating Risks and Health into Multi-Dimensional Approaches of Status-Groups

Second, within Weberian or Neo-Weberian approaches[3], two clearly vertical stratification perspectives are opened up by distinguishing, on the one hand, classes and the economic order from status groups and the world of the social order. Classes are defined on the basis of the position and of the interests within capitalist markets which determine, to use a central Weberian term, the life-chances of large groups of individuals. Status-groups, on the other hand, are conceptualized as specific communities, sometimes of an amorphous kind, where the distinctive elements are determined on the basis of a specific social estimation of honor and on particular life-styles which have has become another core Weberian notion. Classes and status groups, the economic and the social order, are performing, according to Max Weber, any type of societal dance, sometimes very intimately linked, probably more often than not, opposed to each other and at times in aggressive disharmony.

While the conceptual differentiation within Weber's own work still can be considered as remarkably complex and multi-dimensional, the subsequent empirical research trajectories along Weberian lines suffer from the peculiar fact of being too highly reduced in their conceptual complexities. The wide design spaces for Weberian classes and status groups have been severely under-utilized so far since the index constructions leading to status scales are either based on occupational ratings or on small sub-sets of a considerably wider group of socio-economic indicators on living conditions or life-styles.

Thus, the Weberian and Post-Weberian traditions have retained their emphasis on vertical stratification, but apparently at the expense of restricting the multi-dimensionality of life styles and the social order to a small number of key variables only. Consequently, the available Weberian or Post-Weberian platforms simply have become too narrow for linking them with additional notions like risks and health-conditions. This situation is unfortunate since it would have been relatively easy to introduce risks within the context of life chances and of exclusion processes. Nevertheless, it would become far too risky to base socio-economic risks on a small number of empirical key variables only.

### 1.3 The Failures of Incorporating Risks and Health into Multi-Dimensional Approaches of Class-Analysis

The third integration attempt starts with current frameworks on class formation and vertical stratification and tries to integrate multi-dimensional living conditions within

its overall framework. However, the traditional or post-traditional perspectives in this domain (for a most comprehensive summary, see Grusky 1994) share a fundamental shortcoming due to the clearly under-complex conceptual frameworks for reducing the complexities of current living conditions.[4] Basically, three types of arguments can be put forward to support the assessment of a failure strategy.

Referring to contemporary class-analyses as advanced by Pierre Bourdieu (1982, 1985) or by Eric Olin Wright (1997), the main argument rests basically on too little diversity in the underlying class-concepts, including Bourdieu's habitus formations. In essence, two main-dimensions in the case of Wright (relations to means of production (including power relations) and qualifications (expert/skilled/non-skilled)) or the three Bourdieu dimensions with economic, social and cultural capital do not reach the requisite dimensional variety necessary for mastering the highly heterogeneous life-courses of individuals or households. Taking, for example, Ulrich Beck's phenomenology of life-styles and life-courses within his framework of contemporary risk-societies seriously[5], one needs highly diversified multi-dimensional instruments in order to be able to identify vertical differences and social inequalities between individuals or households across different regions, age groups, gender-groups and the like. This argument of an under-critical conceptual core can be put in the format of a *reductio ad absurdum* .

Suppose there is the desired Bourdieu/Wright reference set of few class variables, taken from relations of productions (Wright) or from a more diversified three-dimensional capital space (Bourdieu), then this reference set has to be classified as exogenous in a very strong sense, being capable to explain empirical processes of attitude formations or living conditions – and being itself unexplainable by any of these factors. The reference set must act or function as a singular generator and effector for the empirically accessible diversity of life styles and attitudes. The main problem for such a restricted variable set arises from the multiplicity of different domains with different velocities in their adjustment processes and pattern formations. The realm of living conditions, political attitudes or civil practices is characterized by a high heterogeneity from very rapid to extremely slow process velocities so that any small set of key determinants or core factors is confronted with an insurmountable problem, namely with the lack of "requisite variety" (W. Ross Ashby) in the underlying conceptual apparatus. The small set of exogeneous key factors lacks, by necessity, a sufficient amount of requisite variety in order to accommodate for the extremely wide and diversified range of process velocities and pattern formations which have become characteristic for contemporary societies. In other words, an instrument capable of explaining very heterogeneous domains alike must be itself very heterogeneous and diversified, too. Thus, any small set of key factors cannot achieve the necessary requisite variety and cannot cope, thus, with the heterogeneity of living conditions, life courses or attitude changes.

Due to the under-critical conceptual apparatus, multi-dimensional living conditions would have to be included into a class-analysis framework as additional components. However, such a strategy runs counter to the conceptual core of class-analysis, especially in the case of Pierre Bourdieu. But for Eric Olin Wright too, the problem of integrating living conditions into class analysis means for him to study the effects of class formations

on living conditions in a peculiar way for which Wright uses a seemingly compelling analogy from medical research.

Class analysis is based on the conviction that class is a pervasive social cause and thus it is worth exploring its ramifications for many social phenomena ... Understood in this way, class analysis is what might be called an 'independent variable' specialty. It is a discipline like endocrinology in medicine. If you are an endocrinologist you are allowed to study a vast array of problems – sexuality, personality, growth, disease processes, etc. – in addition to the internal functioning of the endocrine system ... Endocrinology is monogamous in its explanatory variable – the hormone system – but promiscuous in its dependent variables. (Wright 1997:1)

Though considerably weaker, this version has the distinctive disadvantage that a large amount of "independent variable specialties" are available, in principle. Take age groups, cohorts, gender, regional differentiations or life-styles, to mention just a few, then one could justify their relevance for socio-economic analysis in Wright's own terms, namely "that age (cohort, gender, life style, region) is a pervasive social cause and thus it is worth exploring its ramifications for many social phenomena." In the end, the socio-economic endocrine system turns out to be itself highly "promiscuous".

To conclude, the two most advanced class approaches by Pierre Bourdieu and Erik Olin Wright are by their very structural organization unable to integrate multi-dimensional aspects of current living conditions, including, above all, the aspects of attitudes and self-assessments. Thus, it would be ill-founded to link socio- economic risks with second-best approaches.

### 1.4 The Failures of Integrating Inequality and Multi-Dimensional Living Conditions into Frameworks of Societal Risks

As a fourth trajectory in theory space, the two most prominent sociological perspectives on risk and risk formations[6] in contemporary societies have been presented within a relatively short period during the late 1980ies, namely in Ulrich Beck's "Risikogesellschaft" (Beck 1986) and in Niklas Luhmann's views, culminating in a book on risk five years later (Luhmann 1991).[7] In his national Post-Chernobyl bestseller, Ulrich Beck uses the pattern of a phase transition between two stages in modernity as a general platform in which the notion of risks receives its proper attention. The initial stage is characterized, not surprisingly, as industrial or traditional capitalism. Driven by inner or endogeneous necessities, industrial capitalism is superseded, however, by a new phase which has been labeled as risk society. Put briefly, risk societies have become the current stage in the capitalist evolution and a generalized logic of risk-production, in contrast to the logic of wealth production of the industrial phase, stands at its center. But despite a phase transition towards risk societies, socio-economic risks and inequalities have not found their way into Beck's framework. Rather, for Beck the question of social inequality seems to undergo a transformation itself, namely a secular change from vertical to horizontal forms. At various points, Beck gives the impression that social inequalities belong basically to the domain in which they originated in the first place, namely to the phase of industrial capitalism. Thus, combining Beck's framework

with vertical social inequality runs the serious risk of contradicting the main structure of his transformation argument.

Niklas Luhmann, on the other hand, stresses the formation of risk production within the context of highly differentiated and highly complex social systems. In order to comprehend the bottom line of the argument, it is important to emphasize that Niklas Luhmann distinguishes, on the one hand, risks from dangers and, on the other hand, risks from damages or accidents. For Luhmann, risks are always conceived as ex ante and under the auspices of accountability whereas dangers like a potential earthquake, while likewise ex ante, are introduced under the conditions of non-accountability. Damages and accidents, on the other hand, are always occurrences ex post and can be viewed either as accountable – the effects of an actual high-technology accident - or as non-accountable like in the case of the impact of an actual earth-quake. Another important distinction for Luhmann lies in the differentiation between risk-actions and risk-systems. The latter are to be considered as any organized societal ensemble, ranging from marriages up to very large scale transnational enterprises. Due to the increasingly internal as well as external complexities, decisions within large scale risk systems have to be undertaken in view of growing uncertainties and in view of non zero probabilities for massive failures or large-scale accidents. Niklas Luhmann goes on to provide a fascina-ting array of examples which demonstrate various strategies of risk aversion or, above all, risk transfer from the inner side of complex risk-systems into their environment. Despite several illuminating insights, the overall framework is too weak a foundation for being able to incorporate social inequalities into its research agenda. Core domains of socio-economic risks like poor qualifications, hazardous working conditions or weak coping capabilities cannot enter into Luhmann's decision-based framework which, like Beck's approach, does not lead even near the domains of social inequality.

### 1.5 The Failures of Incorporating Risks and Multi-Dimensional Living Conditions into Analyses of Inequality and Health

As a fifth major theoretical integration failure, current approaches linking, health with social inequality suffer from the fact that they are centered on a small segment of available living conditions only, namely on income, financial poverty and income distribution. Highlighted, above all, by Richard Wilkinson's "Unhealthy Societies" (1996), a set of compelling arguments has been established on the close and direct linkages between income inequalities and the state of health.[8]

First, Wilkinson was able to stress the importance of the shape of income distribution as the key economic factor for the overall state of health. As an essential consequence for social and health policies, Wilkinson demonstrates convincingly that improving the absolute levels of income or living standards plays a clearly secondary or marginal role when compared to changes in the income distribution towards a more egalitarian shape. Second, in his book Wilkinson was able to show (*Ibid*., 113 – 172) how a wide class of ailments, sicknesses or mental disorders is relatively closely linked with a more general phenomenon which has been characterized by him as social cohesion. Once again, social cohesion varies significantly with different shapes of the income distribution,

being high for egalitarian societies and low for very unequal societal formations.

Third, Wilkinson produces a substantial amount of cross-country evidence on the heterogeneity and of the high variety in national mortality rates as well as on their links with socio-economic positions. France, for example, exhibits large inequalities in alcohol-related causes of death but shows relatively insignificant linkages between socio-economic positions and death from heart diseases. Sweden and England, on the other hand, exemplify relatively small connections between socioeconomic strata and cancer mortality but strong links between death from heart diseases and low socio-economic positions. Adding the example of death from violence with a strong socioeconomic component in the United States it becomes relatively easy to generalize that both mortality and morbidity rates across various regions or nations are dependent to a significant extent to particular life-styles within these regions and nations.

Fourth, Wilkinson puts forward a powerful conjecture on a new globalization pattern whereby local, regional or national socio-economic groups across the world at the upper end of the socioeconomic scale become increasingly homogeneous whereas the local, regional or national sections of society at the lower side of the vertical scale are subject to particular spatial clusters of morbidity and mortality.

The way of life of the upper socioeconomic groups in each country is more internationalized and so more homogeneous across countries. In contrast, lower socioeconomic groups are perhaps more likely to show the cultural characteristics particular to each country. (Wilkinson 1996:153)

Impressive as it stands, Wilkinson's book fails, however, to integrate a wider class of living conditions, both of the economic and, above all, of the social variety. While Wilkinson has put a renewed emphasis on the close linkages between income, income distribution and health-issues, he fails to create a sufficiently wider socioeconomic framework which would account for essential living conditions outside the narrow confines of incomes or income distributions.

### 1.6 The Weak Links between Subjective General Self-assessments and Objective Dimensions of Social Inequality

With the present section, a shift from theoretical frameworks to empirical results has been undertaken. Within this paper, a large comparative data-set has been used and analyzed which has been compiled under the auspices of Wolfgang Zapf at the Science Center Berlin and which, under the heading of EUROMODULE[9], provides a comprehensive picture of living conditions both in their objective as well as in their subjective dimensions in five countries, namely in Switzerland, Germany, Spain, Slovenia and Hungary.[10]

From Diagram 1, two general conclusions can be drawn.

First, general self-assessments like overall life-satisfaction are significantly, though relatively weakly linked with a core class of socio-economic indicators which reflect, on the one hand, essential attributes of actors and are strongly associated, on the other hand, with social inequality. Thus, the degree of education as well as the total household income have been selected from the data-set and a correlation analysis has been

performed with overall-life-satisfaction. In Diagram 1, one clearly recognizes that these correlations are situated in the range between zero and 0.3 and are to be qualified in most instances as significant, though rather weak or of medium significance only.

**Diagram 1: The Weak Correlation between Income and Education with Life Satisfaction and Health**

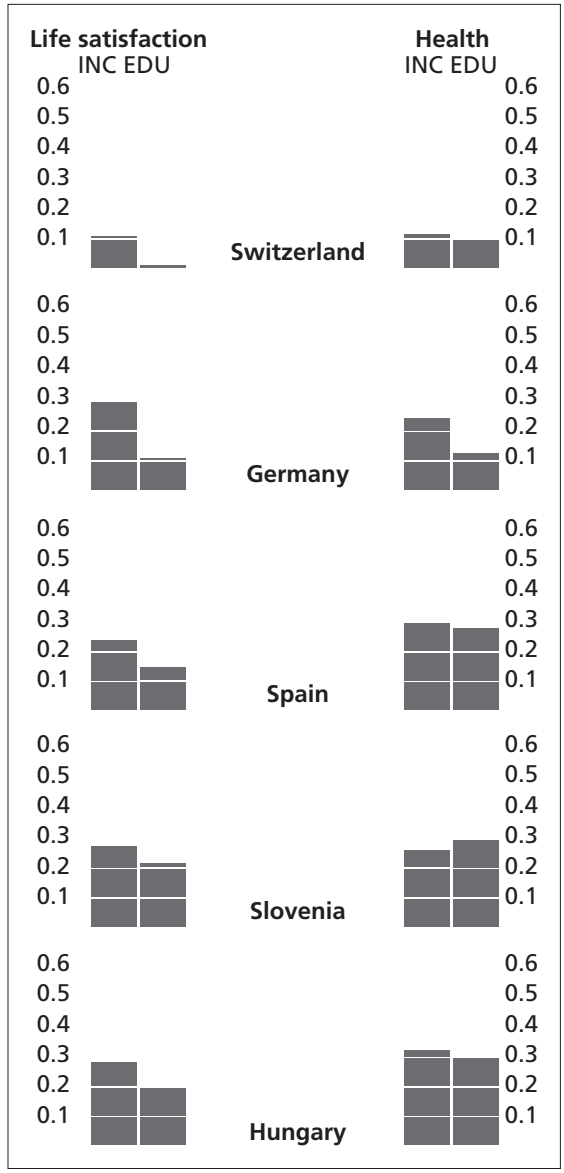
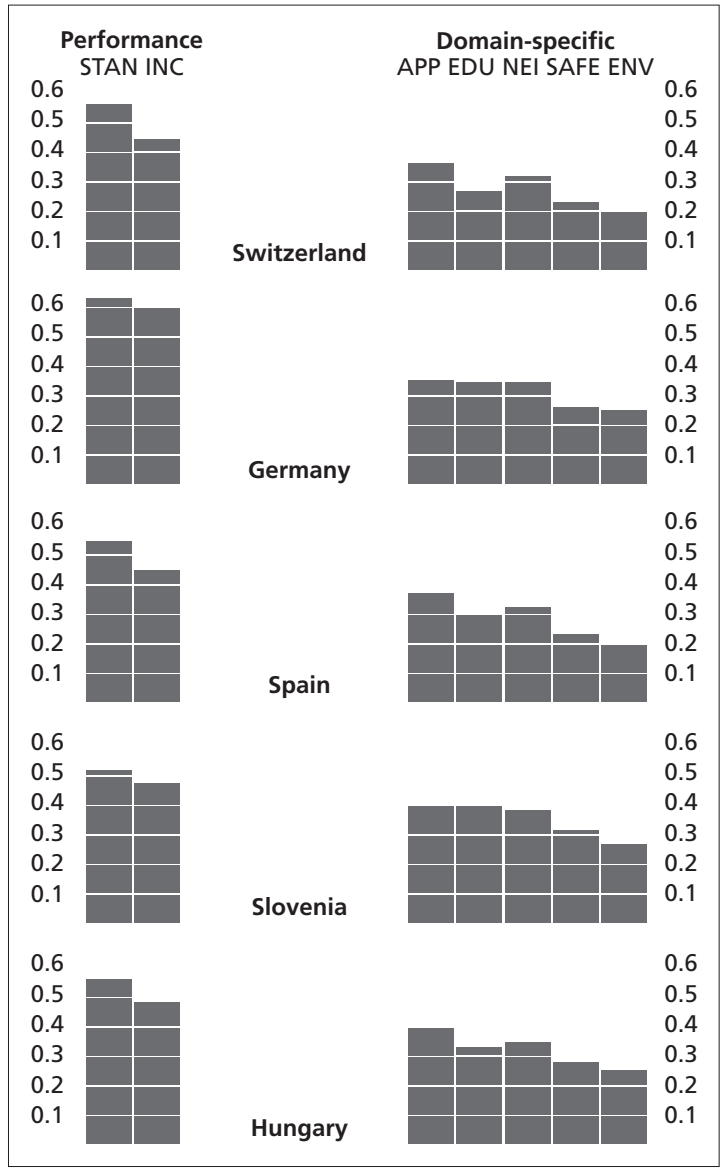


**Diagram 2: The Strong Correlations between Different Forms of Overall Self-Assessments and the Relatively Weak Correlations between Overall and Specific Evaluation Domains**




Second, household income and qualifications differ rather substantially with respect to their correlation patterns with overall life satisfaction since in all instances one can observe higher degrees of correlation between household income and life satisfaction than between educational degrees and life satisfaction.

### 1.7 The Weak Links between Social Inequality and Health

Similarly, the links between the main inequality indicators like income or education with the general state of health can be assumed to be rather weak only. The right hand side of Diagram 1 captures the relevant empirical evidence and strongly supports the seventh guiding hypothesis, presented at the outset of the article. Looking at all five countries within the EURO-MODULE set, one detects a slightly more heterogeneous picture since one does not observe the same uniform rank-ordering across all countries between income and health on the one hand and educational degrees and health on the other hand. In one country (Slovenia), the educational degree is higher correlated with health than the income-health linkage whereas in the other four countries the same type of rank ordering persists that has been already found in the case of overall life satisfaction.

### 1.8 The Weakening Patterns between Societal Developmental Levels, Social Inequality and Overall Life Satisfaction

In contrast to the weak linkages between general subjective assessments and health on the one hand with social inequality on the other hand, Diagram 2 points to the fact of strong correlations between three different indicators assessing general subjective performances, namely between overall life-satisfaction, satisfaction with standards of living and, finally, income satisfaction. These high correlations must be emphasized especially in view of the fact that the auto-correlation of overall life-satisfaction with itself turns out to be roughly of the same numerical size than the correlation between life satisfaction and standards of living.[11] Thus, the three indicators of overall life satisfaction, satisfaction with living standards or income satisfaction should be seen as highly similar performance measures, assessing and evaluating the general state or position of an individual actor.

Additionally, Diagram 2 makes it rather obvious that assessment questions are not strongly correlated with each other simply by their virtue of being self-assessments. Taking more specific assessment indicators like satisfaction with one's home (APP), with the educational level (EDU), the neighborhood (NEI), public safety (SAFE) or the state of the environment (ENV), one can immediately recognize a marked discrepancy between general performance assessments on the one hand and specific domain assessments like the environment and public safety on the other hand.

Thus, in view of Diagrams 1 and 2, a strong final guiding assumption can be put forward which assumes weaker linkages between social inequality and subjective well-being in the course of societal complexification and diversification. Using performance measures for societal development levels or, alternatively, for societal complexity like GDP per capita, highly complex modern or postmodern societies like Switzerland and Germany exhibit lesser and weaker linkages between social inequality and subjective well-being than societies in Central and Eastern Europe like Slovenia and Hungary, while Spain, quite consistently, occupies a middle position. In this sense, the problem of the linkages between social inequality, living conditions, risks and health has lost its urgent and immediately relevant aspects since it belongs to the class of self-eliminating problems only, disappearing in the course of further societal development and evolution altogether.

Thus, the theoretical failure to integrate socio-economic risks, inequality, multi-dimensional living conditions and health is entirely compensated by the empirical evidence that an ever-weaker pattern connects these domains and will eventually vanish in the not too distant future.

## 2. Socio-Economic Risks and Life-Chances within an Evolutionary Context

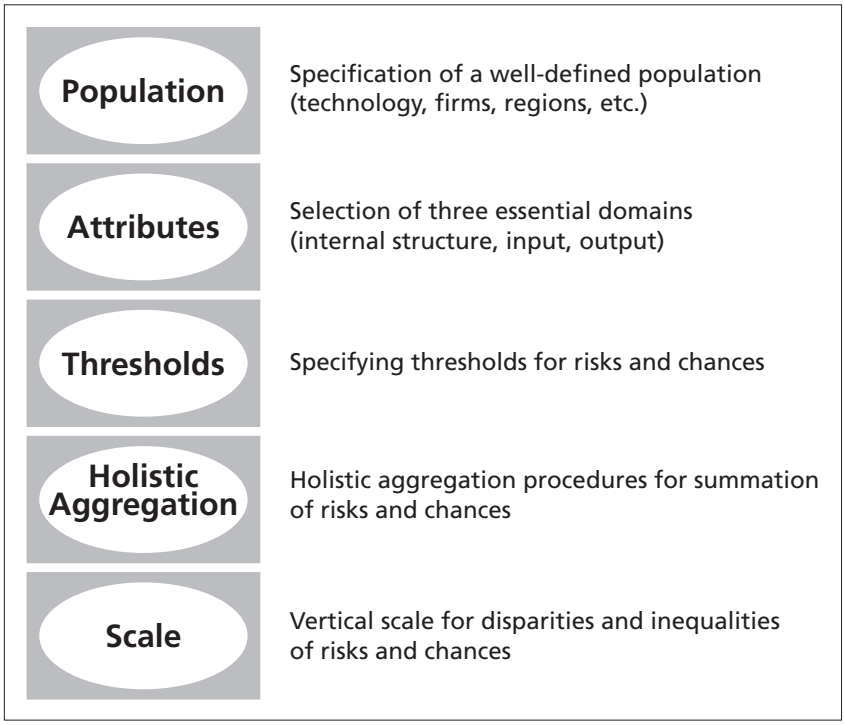
Despite the initial failure of combining existing frameworks on risks, inequalities, multi-dimensional living conditions and health and despite the empirical evidence on decreasing linkages between these arenas, four unusually strong hypotheses will be proposed, three of them empirical, one theoretical, which run counter to the previously established conventional wisdom.

- First, starting with the empirical side of socio-economic risks, living conditions, inequality and health, the linkages and correlations between multidimensional living conditions, newly aggregated, and subjective general performance assessments like overall life satisfaction turn out to be not only significant, but strongly significant.
- Second, significant and strong linkages can be identified between vertical inequality, newly conceived, and the general state of health.
- Third, for highly advanced societies the linkages between objective inequality indicators with subjective self-assessments are almost at the same levels than in the transformation societies of Central and Eastern Europe or in advancing societies in general. Similarly, the linkages between inequality indicators and health remain almost constant for highly advanced nations or for the advancing regions of Central and Eastern Europe. Thus, the course of modernization or post-modernization does not lead to a pattern of growing independence between overall subjective self-assessments or health on the one hand and their objective living conditions and inequality on the other hand.
- Fourth, in order to support these three counter-intuitive and, in view of Diagrams 1 and 2, seemingly risky assertions, a new approach will be built up which is able to combine and integrate multi-dimensional living conditions, socio-economic risks and inequality.

In order to provide strong empirical evidence for the three empirical claims, the comprehensive EUROMODULE-data-set with five different European countries, two of them EU-members (Germany, Spain), two of them accession countries (Hungary and Slovenia) as well as a highly advanced neutral country outside the EU (Switzerland) has been selected. In doing so, the three alternative hypotheses proposed above would have to be highly robust in nature since the economic, cultural or institutional differences between these five countries are even at first sight considerable.

Initially however, a unified framework on living conditions and risks has to be built up. In order to achieve this goal, five analytical steps must be performed which have been summarized by Diagram 3.

**Diagram 3: Five Steps towards Combining Multi-Dimensional Living Conditions, Socio-Economic Risks and Inequality**




Following Diagram 3, the first step, namely the specification of a well-defined population, has been accomplished already since five populations from five countries have been selected.

The second step requires the construction of a comprehensive set of indicators which capture multi-dimensional living conditions across a wide range of domains. Here, Table 4 gives a summary of the fourteen socio-economic dimensions chosen. From Table 4 one can see that the socio-economic dimensions have been clustered into two main groups, namely into a first set which reflects both available socio-economic resources (income, education) or living conditions (number of rooms, actual living standards) and into a second group which is focused on the internal domain of cognitive-emotional organization in general and on specific self-evaluations in particular.[12]

As third step along the PATHS-line, the concept of socio-economic risks has to be introduced and specific risk-thresholds have to be specified. This move has been accomplished basically in two stages which can be visualized with the help of Diagram 4.[14]

On the one hand, the fourteen essential socio-economic dimensions in Table 4 have been subdivided into three different segments, namely into a risk-segment, an intermediate segment and, finally, into a segment of life-chances. On the other hand, the lowest 25 to 33% of a population in a specific dimension have been defined as being at a socio-economic

risk, the upper 25 to 33% of a population as being in a life chance position, while the intermediate group has been characterized as being in an indifference position.

**Table 4: Fourteen Dimensions for Socio-Economic Risks and Chances in the EURO-MODULE[13]**

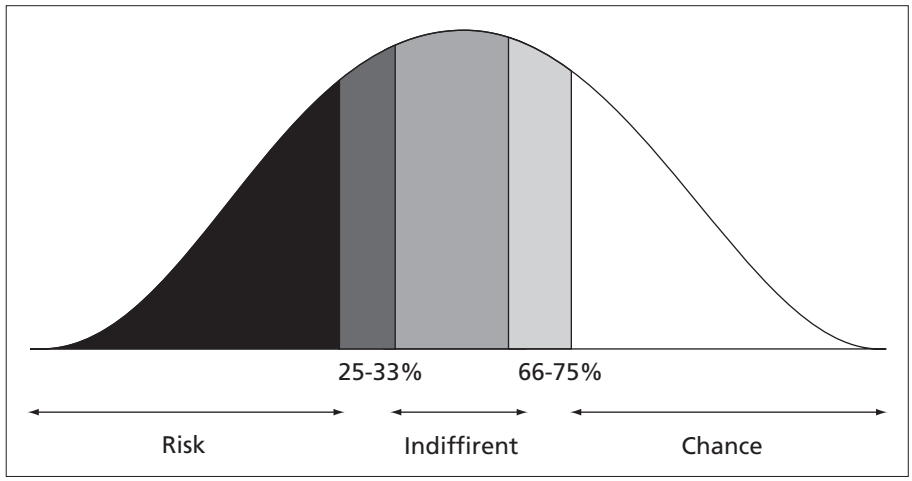
| Dimensions | Risk Domain | Indifference Domain | Chance Domain |
|---|---|---|---|
| Number of Rooms | Low | Medium | High |
| Social Networks | Low | Medium | High |
| Actual Living Standards | Low | Medium | High |
| Household Income | Low | Medium | High |
| Income Changes to Last Year | Low | Medium | High |
| Make Ends Meet | Low | Medium | High |
| Educational Degree | Low | Medium | High |
| Satisfaction with Apartment | Low | Medium | High |
| Satisfaction with Neighborhood | Low | Medium | High |
| Satisfaction with Public Safety | Low | Medium | High |
| Satisfaction with Environment | Low | Medium | High |
| Job Satisfaction | Low | Medium | High |
| No Influence (Anomia) | High | Medium | Low |

It should be added that these specific thresholds for socio-economic risks and life chances have been selected for each of the fourteen dimensions as well as for the five EUROMODULE-countries separately. Thus, the distribution of the Hungarian or German population in areas like income, education, or anomia determined the choice of the specific risk and chance thresholds in each country. In this way it has been guaranteed that different levels of risk-thresholds have been generated for each country which, in turn, can be compared separately and may give rise to a rather illuminating comparative study of being at socio-economic risk in specific socio-economic dimensions across various parts of Europe.

As a fourth step along the PATHS-Diagram, all risks and life chances must be aggregated which has been accomplished in a holistic mode[15] of summation and subtraction. More specifically, for each survey-respondent, the total number of risks has been subtracted from the total number of life-chances. In the case of a large sum of life chances, subtracting a comparatively small number of risks generates a relatively high positive value. Otherwise, a large total of socio-economic risks, subtracted from a small sum of life-chances, must result in a negative value. In this manner, a new risk/

chance-based indicator has been calculated for each survey respondent in each of the five countries of the EUROMODULE-data set.

**Diagram 4: The Specification of Socio-Economic Risks and Life Chances**




Finally, a new risk-chance based scale has been introduced which depends crucially on the total number of socio-economic dimensions selected as essential actor attributes. In general, N different socio-economic dimensions lead to a new risk/chance based scale which has its lower end-point at –N (maximum number of risks, no single life chance) and its upper end-point at +N (maximum value of life chances, no single risk). In the case of the EUROMODULE-data, the scale goes from –14 (maximum number of socio-economic risks) to +14 (maximum number of socio-economic life chances).[16]

For the subsequent empirical analysis, two large societal segments have been selected, one group of multiple risks with an accumulated risk value of –4 and lower and one group of multiple life-chances with an accumulated value of life chances of +4 and higher.

## 3. The Socio-Demographic Profile of Multiple Risk Groups and Groups with Multiple Life Chances: Establishing a New Basis for Multi-Dimensional Living Conditions, Socio-Economic Risks and Inequality

The first major point which has to be established lies in the successful integration between multi-dimensional living conditions and socio-economic risks and life-chances with inequality. Put in a brief fashion, does the new risk/chance-based scale measure social inequality at all? In order to answer this question, the new scale should be able to fulfill four basic requirements.

- First, the risk/chance-based scale should exhibit a significantly positive correlation with qualifications. Low degrees of education should be reflected in a high accumulation of multiple risks and high degrees of education in high concentrations of multiple life chances.
- Second, the risk/chance-based scale has to be significantly related with income. Low income levels should exhibit high multiple risk values and high income standards high values of multiple life chances.
- Third, the risk/chance-based scale should show a clear gender asymmetry. In short, the female population should be over-represented in the multiple risk segment and under-represented in the groups of multiple life-chances.
- Fourth, age should not be related with the distribution of multiple risk-groups in a strong positive manner. The main reason for this requirement has to do with the inclusion of health conditions. Since the state of health is very powerfully linked with increasing age, it would, thus, reduce the cognitive value of a high correlation between the new risk/chance scale and health substantially.

Given this short list of four essential inequality requirements for the new risk/chance-based scale, the following series of Diagrams (Diagram 7 to 10) provides clear graphical answers to each of these conditions.

First, Diagram 7 shows that the new vertical scale fulfils the conventional criteria for identifying inequality in the domain of education. Risk-accumulation is directly related with low degrees of education whereas a high concentration of life chances is to be found within the highly qualified societal strata only.

Second, individuals with lower incomes or insufficient qualifications are, as can be seen in Diagram 8, highly concentrated among the multiple risk groups. Across all five countries, income seems to be linearly related with risk and life chances, with positive slopes for the relation between income and life chances and with negative slopes for the income-risk relationship.

Third, the gender distribution along the scale of multiple risk and multiple life chances reconfirms older as well as recent studies which emphasize a deep-seated gender divide within contemporary societies. More specifically, the investigations conducted so far indicate a significantly higher concentration for women at the lower end of the scale and a somewhat weaker predominance of men on the upper end of the scale. In numbers, the ten to twenty percent of a population with the highest degree of multiple risks exhibits in general a gender distribution of 2:1. In other words, two thirds of a population with the highest accumulation of unspecific risks is female. (See also Diagram 9)

**Diagram 7: The New Risk/Chance-Scale and Degrees of Education**

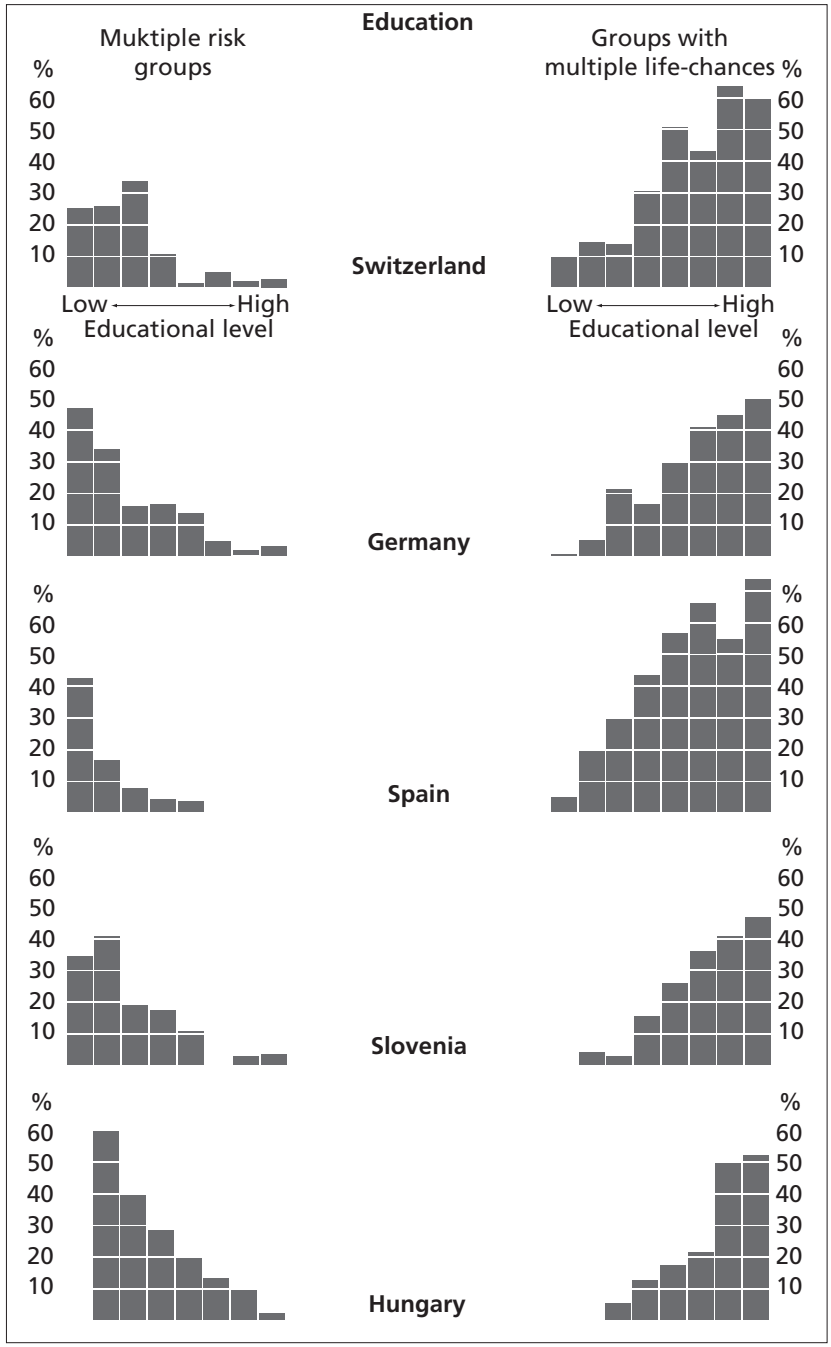


**Diagram 8: The New Risk/Chance-Scale and Household Income**

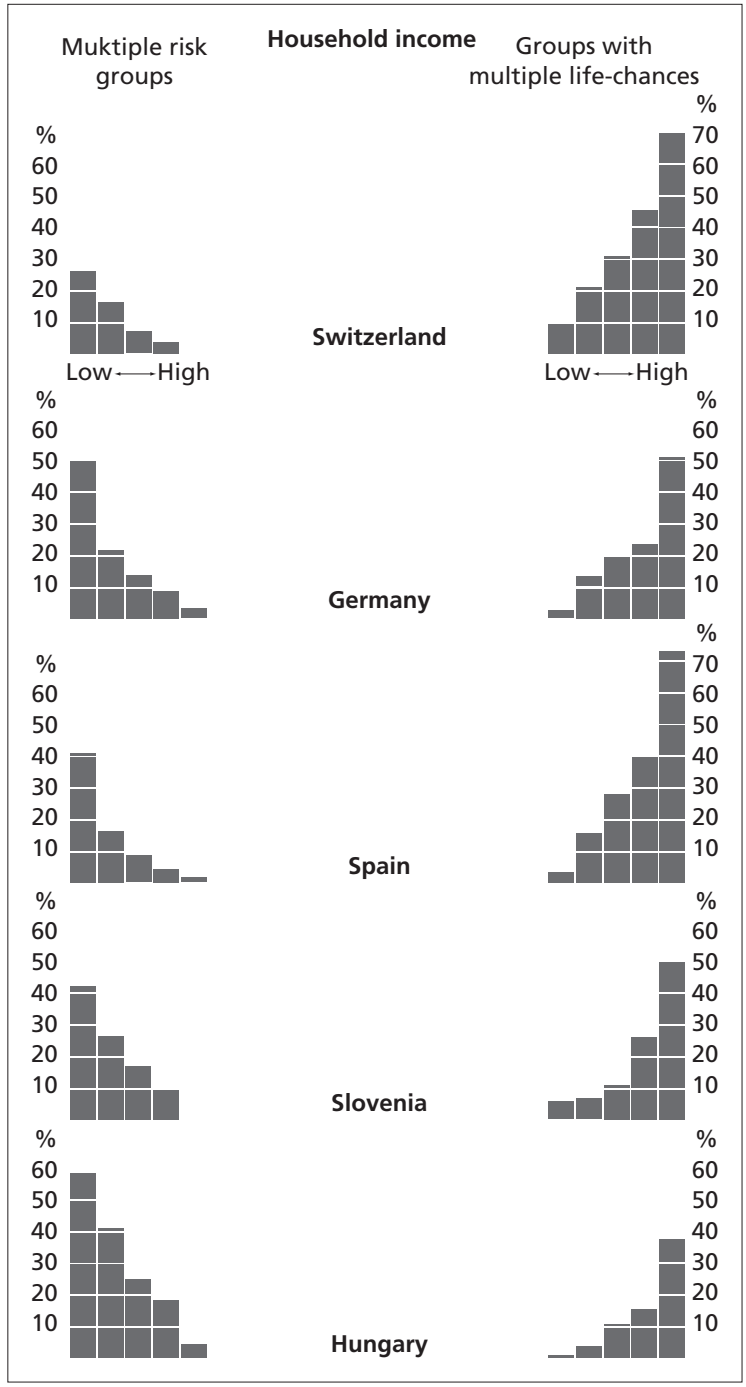


**Diagram 9: The New Risk/Chance-Scale and Gender-Asymmetries**

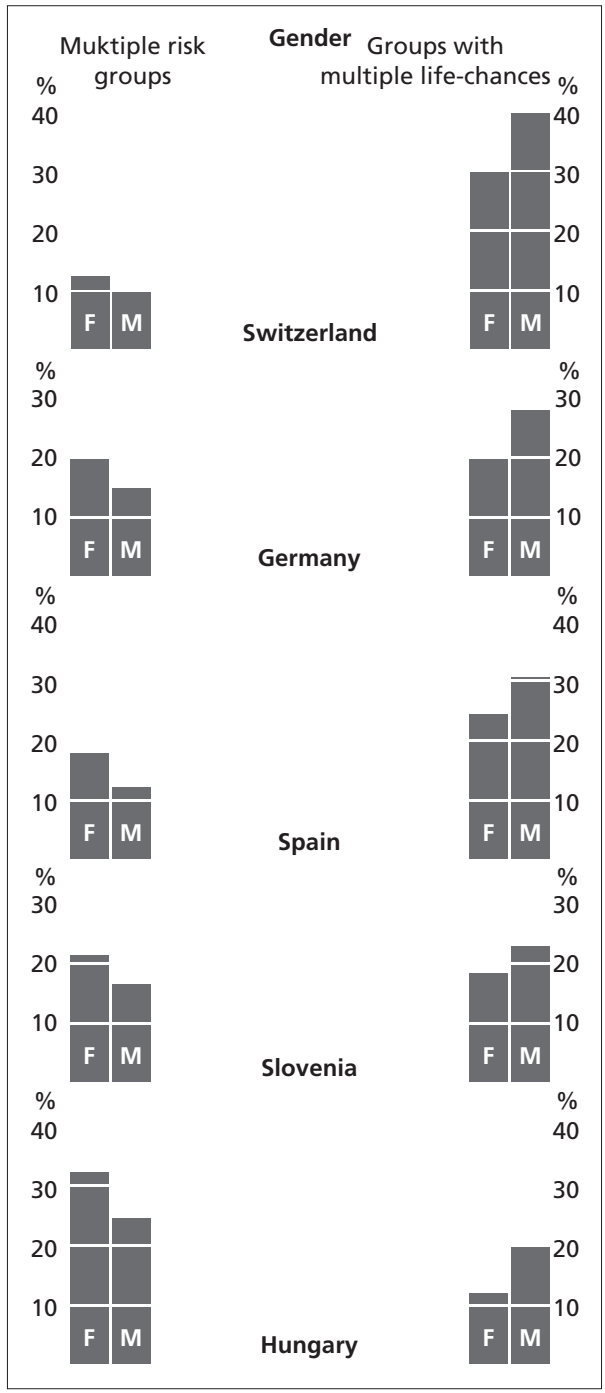
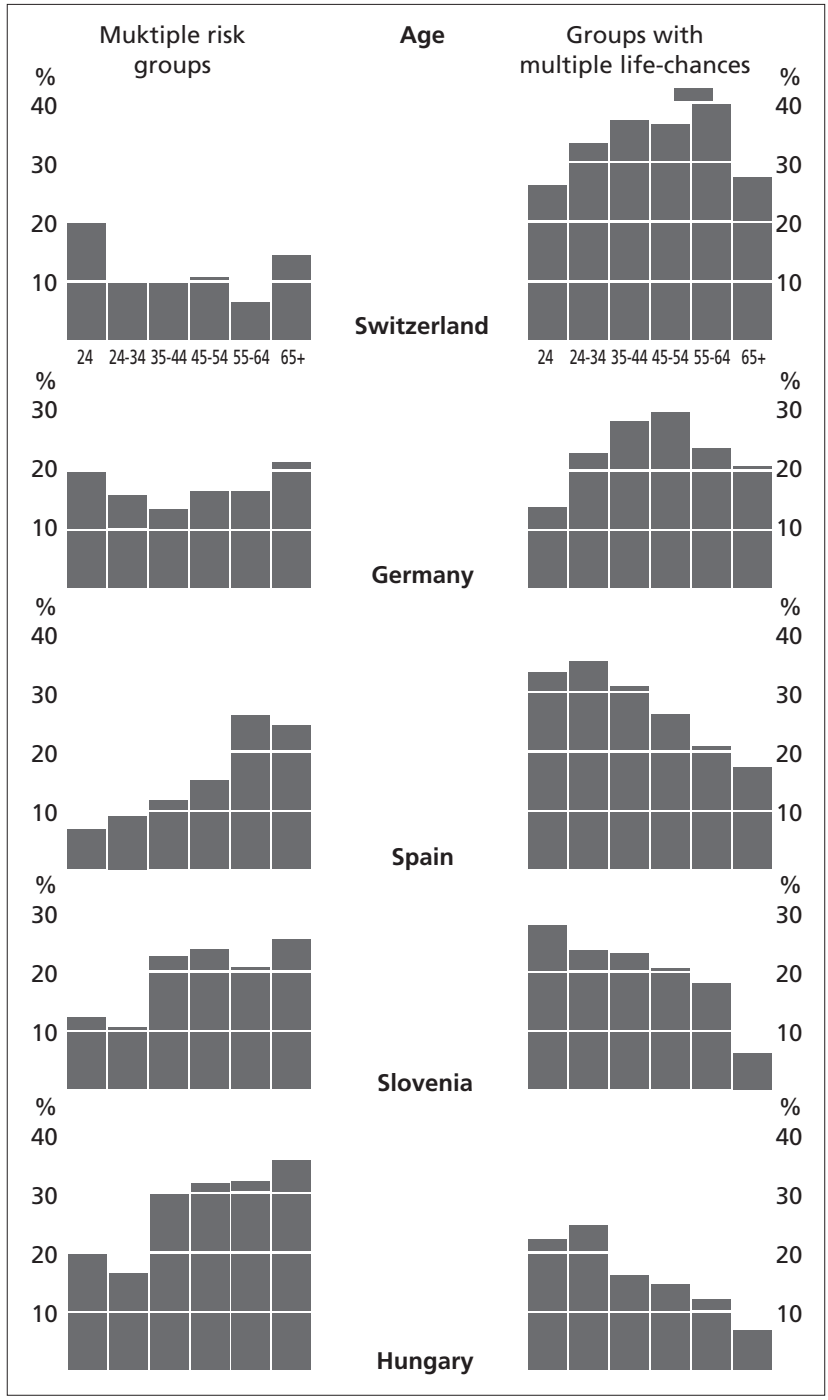


**Diagram 10: The New Risk/Chance-Scale and Age-Distributions**



Fourth, the age distribution of the population of multiple risks and multiple chances may seem surprising at first sight since, according to Diagram 10, there is a marked tendency for weak linkages between multiple risk-formations and younger age cohorts in Switzerland and Germany and a converse pattern, namely a linkage between multiple-risk accumulation and older cohorts in Spain, Slovenia and Hungary.

In sum, the new risk/chance-based scale fulfills all four essential requirements for an appropriate measure of societal inequality which have been laid out at the beginning of Part III.

## 4. The New Links between Multi-Dimensional Living Conditions, Socio-Economic Risks, Inequality, Life Satisfaction and Health

With the new platform on multi-dimensional living conditions, socio-economic risks and inequality it remains still open and undecided at this stage whether the last of the eight guiding assumptions introduced at the beginning can be refuted and replaced. The eighth assumption has stated, once again, that the course of (post)modernization produces a pattern of growing independence between overall self-assessments, health and the cognitive-emotional organization of actors on the one hand and their multi-dimensional living conditions on the other hand. After all, this guiding assumption could be supported, in principle, with large quantities of contemporary research on values, happiness or subjective well-being as well. (See, for example, Zapf 1994)

Fortunately, the new risk-approach offers a high "value added" by establishing much closer links between overall life satisfaction or health on the one hand and the position on the risk/chance scale on the other hand. Figure 10 highlights this result by showing that the correlations between the new vertical risk/chance measure and the personal status of health, expressed in the ten point scale of satisfaction with health, are considerably higher than the conventional picture of Diagram 1. Apparently, the new perspective on evolutionary risks opens up new and surprisingly dense linkages with the status of personal health as well irrespective of the increasing complexities of post-industrial or, alternatively, of postmodern lives. Moreover, Diagram 11 exhibits surprisingly strong linkages between the new risk/chance based scale and overall life satisfaction.

The results so far suggest that under the heading of evolutionary risk-research a new and powerful perspective on the strong links between living conditions, socio-economic risks, social inequality and health has been established. It should become a valuable strategy to apply the new research tool, on the one hand, to the large quantities of available social health survey data both for highly developed as well as for developing regions and nations across the globe and, on the other hand, to all socio-economic domains in which population of actors and their essential attributes become the key determinants for their overall evolution.[17]

Towards the end of the present article few brief hints will be given which will support the closer empirical linkages between multi-dimensional livin conditions, risks,

inequality and health from a medical and physiological point of view. In brief, it will be shown that one can find a common deep-level physiological language through which the domains of living condition, risks and health become connected in a direct and immediate fashion.

Turning to the language of stressors and, thus, to neuroimmunology, it turns out to be useful to start with a taxonomy of different types of stressors which have been catalogued within the relevant body of literature[18]. Here, one finds a heterogeneous set, comprised of sensory stressors (strong light, noise, sensory deprivation, etc.), block-stressors (preventing essential routines like eating, sleeping, social contacts, etc.), achievement stressors (tests, examinations, work-tasks, but also monotony at work, etc.), social stressors (large crowd of people, loneliness, isolation, etc.), environmental stressors (noise, pollution, toxic materials, etc.), decision-based stressors (goal conflicts, quick decisions, but also lack of decision-making, etc.) or future-based stressors (fear, anxiety of the future, etc.)

The important physiological point lies in the heterogeneity of stressors is accompanied by a heterogeneity of stress reactions which vary in time (minutes, hours, days, weeks …), in intensity or in the emotional clusters, associated with each different physiological stress reaction. Nevertheless, common to all these stress reactions is an attempt to reduce the discrepancy between the effects of stressors and internal target values. Moreover, all stress reactions involve the activation of the hypothalamus-pituitary-adrenal axis and produce comparatively high quantities of endocrine hormones, particularly corticosteroids with cortisol as the most important one and catecholamines. Likewise, all physiological reactions to stress manifest themselves in a broad range of measurable changes like in the higher production of stress hormones, already mentioned, but also in higher degrees of blood pressure, heart rate, respiration rate, galvanic skin responses or in larger amounts of free fat acids.

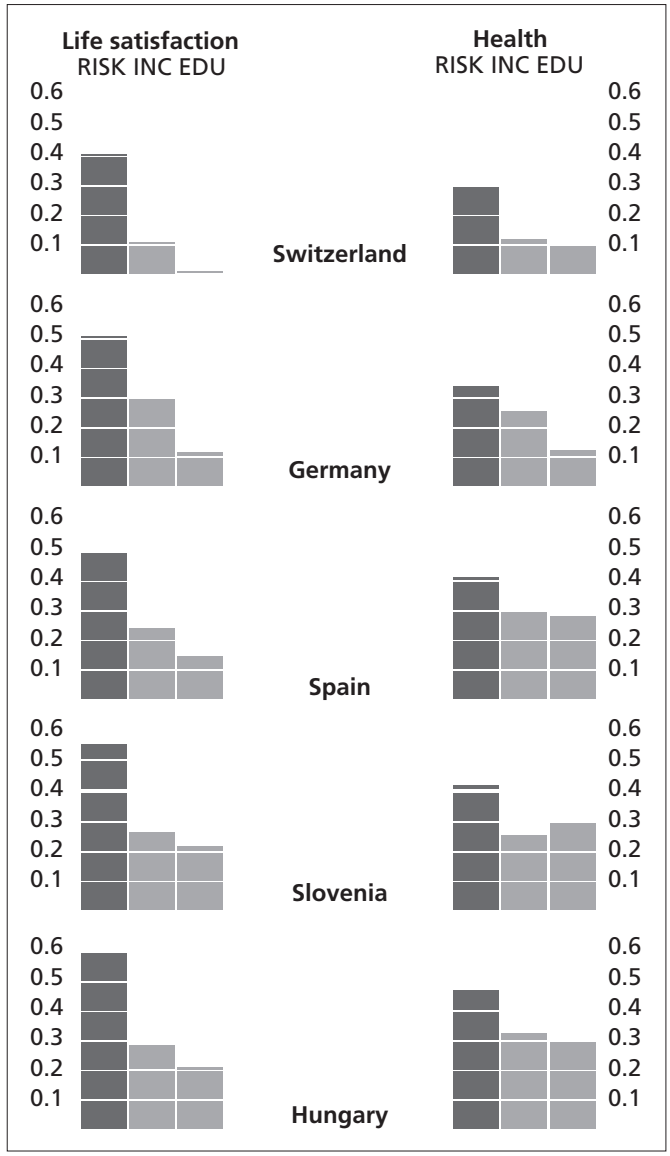
The upshot of the argument of a common general pattern of stress responses with a high degree of variation in its manifestations (duration, intensity, emotions, etc.) lies in the fact that the general pattern of stress responses possesses at least two main connections to the domain of sickness and ailments, namely through their direct effects on the cardiovascular system on the one hand and through their immediate impact on the immune system on the other hand.

Given the short background on stress-research, it seems possible to link the list of socio-economic risks which have been defined in the course of the present article to special classes of stressors like social, environmental, future-based or decision-based stressors. Moreover, the following subset-relation will be proposed:

**Socio-economic Risks $\subset$ Stressors**

It is quite obvious that this subset-relationship needs a very detailed justification which cannot be provided within the framework of the present article. Five main arguments will be provided, however, which should give the bold conjecture of a risk-stressor subsumption considerable initial plausibility.

**Diagram 11: The New Linkages between Socio-Economic Risks, Inequality and Health**




- First, the socio-economic risks, which have been introduced on the basis of a wide array of living conditions, are characterized, *inter alia*, by their permanence. Thus, many of the socio-economic risks defined within the EUROMODULE context like low, insufficient or deteriorating incomes or low degrees of qualifications are to be classified as long-lasting or, like in the case of low qualifications, as (nearly). Thus,

socio-economic risks would act as continuous stressors and not as single, rare or isolated occurrences.

- Second, there exists a remarkable asymmetry between the language of socio-economic risks and life chances on the one hand and the physiological stress language on the other hand. While risk and chances have been introduced symmetrically, no symmetry can be identified for the stress domains. Feeling unsafe in the public sphere (socio-economic risk=stressor) does not have a life chance corollary in terms of stressors. Feeling safe in the public domain does not constitute an alternative source for stressors. Likewise, a noisy environment at the workplace or at home implies an essential socio-economic risk and at the same time an environmental stressor whereas a quiet atmosphere at work or at home cannot be associated with a different group of stressors. Thus, socio-economic risks can be linked to stressors, socio-economic life-chances imply, by and large, the absence of stressors.
- Third, the distribution-dependent specification for thresholds of socio-economic risks provides additional support for the subset relationship between socio-economic risks and stressors. Since the majority of the population is, by definitional necessity, above the risk-threshold, individual actors, falling under a specific risk-segment, perceive themselves relatively deprived. Thus, the available literature on the importance of relative deprivation[19] can be added as further evidence for proposed the risk-stress linkages.
- Fourth, while stress reactions vary in length, intensity and emotional involvement, the basic physiological reaction patterns are unspecific with respect to the sources of stress. In other words, one does not find a "bad boss-stress reaction", confined to a specific region in the neuro-immune system in contrast to a "loud noise-stress reaction", affecting other parts of the neuro-immune system. Thus, a multi-dimensional array of essential living conditions across the contexts or settings of actors and across their cognitive-emotional organization can be interpreted as a summary of all relevant potential stressors whose scope and degree of completeness is limited by the restrictions inherent in conventional survey research only.
- Fifth, stressors and stress reaction are clearly not invariant to the actual number of stressors since stress reactions are functionally related, probably in a complex and non-linear manner, to the overall number of stressors. This, in turn, provides additional support why the new risk/chance based scale should be interpretable in terms of a net value for the overall number of stressors.

In this way, a new approach for integrating multi-dimensional living conditions, socio-economic risks, social inequality and health has been built up which, towards the end, was even able to point to a considerably deeper description-level for these four domains, namely to the physiological description level of stressors and stress reactions.

## Notes:

1. In more precise terms, correlations are to be qualified as (weakly) [medium], {strongly} significant iff they fall into the range of (0.1 to 0.25) [0,25 – 0.4]{> 0.4}
2. For other life-style studies, see for example Spellerberg 1996, Schneider/Spellerberg 1999 or for an interesting summary Matjan 1998.
3. For a summary on the Weberian tradition, see Parkin 1979, S_rensen 1991/1994 or Treiman 1977.
4. For an interesting summary and discussion see e.g., Giddens 1989:209pp.
5. For a summary, see e.g. Beck/Beck-Gernsheim 1994, Beck/Sopp 1997, Beck/Erdmann Ziegler 1997.
6. For a historical-conceptual summary on the emergence of risk, see, *inter alia*, Bernstein 1996, Bonß 1995.
7. On additional literature on risk-research especially within the German tradition, see Baecker 1988, Banse/Bechmann 1998, Japp 2000.
8. On recent literature of the links between health and society, see for example Davey/Gray/Seale 2001, Lupton/Najman 2001 or Petersen/Waddell 1998.
9. For a Euromodule-documentation, see Delhey/Böhnke/Habich/Zapf 2001.
10. It can be safely assumed that in the course of the next months, the number of countries will increase substantially so that the EUROMODULE produces a highly interesting comparative data set which is able to monitor existing dimensions of individual welfare, including the subjective side of self-assessments and evaluations.
11. As a highly illuminating, non-intended experiment, the question of overall life-satisfaction has been included in the 1984 Welfare Survey twice in the questionnaire, the first time at the beginning and the second time towards the end. The auto-correlation of the identically phrased life-satisfaction question turned out to be 0.6 only which is, following Diagram 2, roughly the same value than the correlation between overall life satisfaction and standard of living. (See Glatzer 1984, Zapf 1984)
12. At this point it should be noted that a highly promising interface domain is opened up, linking social survey research with the broad arenas of the cognitive sciences or artificial intelligence. More specifically, the internal cognitive-emotional organization of actors could and should be operationalized as an inter-disciplinary effort between cognitive scientists and survey researchers. For a selection of potentially relevant literature, see for example Damasio 1994/1999, Dennett 1986/1991, Hofstadter 1982, Hofstadter/Dennett 1982, Hofstadter 1985, Minsky 1991 or N_rretanders 1998.
13. More specifically, the following variables have been selected from the EUROMODULE data-base: V1, V4, [V13, V14], V21, V24, V26, V27, V33, V40, V49, V52, V54, V55a plus the degree of education.
14. For a summary, see Müller/Link 1997, Müller 1998 or Müller 2002.
15. This specific form of aggregation is based on very early insights by Otto Neurath (1971/1981) into the need for comparing overall distributions and sums and not their constituent parts and elements.
16. It should be added that the new scale can be interpreted in terms of social exclusion/inclusion as well since the lower region of unspecific risk-accumulation can be clearly associated with social exclusion whereas the upper region of the scale is a good indication for social inclusion. (On the exclusion/inclusion literature, see, for example, Levitas 1998, Nolan/Whelan

1996, Room 1995, Silver 1994 or Townsend 1979) For similar ideas of linking poverty with an accumulated set of different indicators, see Habich 1994, Habich/Krause 1994, Habich 1996.

17. It should be added that this new evolutionary risk-approach has been applied successfully to the organizational domain, in particular to a population of scientific institutes in Austria. (See Müller *et al*. 2002) Due to the importance of populations, the new risk-framework can be easily recombined with the existing literature on organizational ecology (See, for example, Carroll/Hannan 2000, Aldrich 1999)
18. See on this point see Cooper 1996, Horwitz/Scheid 1999, or Sarafino (2002).
19. On this literature, see more recently Walker/Pettigrew 1984 or Olson/Hafer 1996.

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*Po mnenju urednišva je članek uvrščen v kategorijo:*
*izvirni znanstveni članek (s kvantitativno argumentacijo).*