

4. The Public's Understanding of Risk A Qualitative Analysis of the Semantics of a Many-Faceted Term (Marcus Heinßen, Alexander Sautter, Michael M. Zwick)

4.1. Introduction

Risk is a kaleidoscopic, variable term, the implications of which people are confronted with daily in the shape of threats and hazards; to others it offers opportunities and challenges. Numerous recent studies on the perception and evaluation of risks deal with social topics such as the question of the acceptability of large-scale technologies, the willingness to purchase and operate technical products, the evaluation of places of residence, and many others associated with the evaluation of risk. The example of BSE has shown that risks which are perceived to be inappropriately high can lead to the boycotting of products, in some instances involving dramatic consequences to the economy. But even politics is occasionally interested in gaining more insight, for example in cases where it would be advantageous to know whether to promote one technology or another, where the licensing of industrial facilities is concerned, the decisions about industrial sites or threshold values - but also when political legitimization threatens to become problematic because the population feels that imminent dangers are not at all or insufficiently discussed and dealt with by politicians. In these and similar cases it can be important to learn about the fears and anxieties, but also about the hopes and expectations of the citizens. Furthermore, it can be even more important to reach decisions and compromises supported by all in a participative process. Ultimately the question of what funds should be invested in the prevention and management of which risks is not a trivial matter, considering the largely empty public coffers. At this point it may become significant as to which risks people are particularly aware of, which are feared but also which mental resources, measures and arguments are developed to subjectively evaluate risks.

Answers to these questions are particularly relevant for two reasons: for one, people perceive scientists frequently being unable to provide unambiguous facts about the frequency and seriousness of harmful events or insidious hazards. Uncertainty communicated by public persons and thus insecurity experienced by the public can promote the process of subjective opinion forming regarding the peoples' ›life-world‹. For another, risk surveys are frequently based on politically relevant topics, such as the question of whether the German public is prone to be averse to technology and being risk-shy. Considering the political and economic significance of the innovative ability of a hi-tech Germany, technological risks easily become the focus of a survey. But does this really touch the heart of what people associate with ›risk‹, or does one ›shoot past‹ the lay public's perception of risk? In the constructivist disposition

ascribed here risk is a subjective construct - or using the words of the ›Thomas-theorem‹: *Risk is what people define as risk!*¹

Proceeding from the cognitive presence of risks, it is the goal of this contribution to extract from qualitative data material the semantic scope of risk in the public.

4.2 Material and methods

Qualitative data material offers the opportunity to obtain more detailed knowledge about the perception and opinion forming of people in a kind of ›object-related cognitive process‹. Closed standardized surveys do not provide this possibility.² The advantage of the qualitative approach is that the interviewees are not confronted with concrete risks which they must evaluate - as is the case in quantitative studies -, but that they can choose an approach entirely their own to the object of cognition.³ In the case at hand, a largely open interview strategy focusing on specific problems and themes, and complementing the survey's data was used as a basis from which to discover the ›risk semantics‹ prevailing in the public (cf. Lamnek 1989: 3.4.2).

Between March and May 2001 a total of 62 qualitative set interviews averaging roughly 90 minutes were carried out. ›Theoretical sampling‹ (cf. Strauss 1987) could not be realized due to time constraints. Instead, based on a quota plan, the attempt was made to select such persons of whom manifold and contrary attitudes towards risks could be expected. Among others, persons living in the vicinity of large-scale and high-risk technological facilities were selected, persons having to deal with risk due to their professions, be it that they eliminate the effects of risk or analytically calculate risks, but also people exposed to risks in the most varying ways, or people having become victims of harmful events. These groups of people were again complemented by ›risk laymen‹ of highly diverse socio-demographic composition - from welfare recipients to industrial managers - of whom it could not automatically be presumed that they were creators or victims of risks in a special way going beyond the normal experience of everyday risks.

1 In the wording extended by R. Bendix: »As long as men live by what they believe to be so, their beliefs become real in their consequences.« (cf. Helle 1977: 151). According to the Thomas-theorem subjective risk definitions such as this one become the starting and anchor point of risk evaluations, risk-related acts and decisions.

2 On the specific advantages of qualitative paradigm see also Blumer 1979 and Glaser/Strauss 1979.

3 Due to the differing approach we intentionally dismissed the option of using the set interviews merely as a 'qualitative pilot study' in support of the survey. In our risk study it has the significance of an independent subproject.

In order to ensure the data's quality, the interviewers had to undergo thorough interview training comprising the carrying out and joint discussion of trial interviews as well as skilled techniques of enquiry. The interviewers were instructed to create an open, natural and ›narrative‹ conversational setting, ensuring that the interviewee would actually speak exhaustively on all aspects of risks relevant to him/herself. The set interviews were carried out by the participants of a project seminar on risk perception and evaluation of the University of Stuttgart at the Institute of Technology and Environmental Sociology and was transcribed in its entirety. Special thanks are due to them.

The centrality of statements and arguments

The evaluation strategy pursues the intention of determining the semantic scope of risk using the centrality of statements. By central statements we understand, for one, such aspects which do not remain singular but are found in the data material as repetitive motifs.⁴ For another, centrality also comprises that statements on risks are ›marked‹ as relevant by the interviewees, either by explicitly assessing them as ›important‹, as particularly threatening or promising benefits, as especially frequent, being significant currently or similar properties. The casual mentioning of certain risks - such as in syntagmatic enumerations of hazards without specific evaluations, explanations, examples or reasons - conversely signals only minor relevance. The placement of arguments and examples within the course of the interview also permits conclusions as to subjective relevance: Are certain risks only mentioned in the course of the interview, are they only talked about once the interviewer has started on the specific subject or asked for a concrete evaluation of the risk, or are these risks in a constant cognitive awareness, are they introduced at a prominent position and do they provide - without the interviewee being asked - occasion for enlarging on them with narratives and explanations?

The relevance of the initial question

If one wants to probe into the semantic scope of risks by way of their centrality, these considerations show that it is above all important to analyze the discourse on the initial question. The initial question read: »*What comes to your mind on the subject of risk?*«.⁵ Such an open entrance, which leaves the ›framing‹ and structuring of his/her attitude

4 This approach seems justified due to the number of interviews, which is relatively large for a qualitative study.

5 The interviewers were instructed not to make any specific statements with regard to risk, neither during the arrangement of the interview nor during the preliminary conversation, so as to avoid distortion during the treatment of the subject by external boundary conditions.

entirely to the interviewee has special advantages for reconstructing the understanding of everyday risk. The ascription of relevance is based on the cognitive awareness of subjects and attitudes, but it can also be determined by the depth of the description or the conscious emphasis of aspects on the part of the interviewee.

Furthermore the following evaluations are based on the statements of interviewees evoked by the two following set questions: »*What do you perceive as particularly threatening in your everyday life?*« and »*What is the most dangerous thing you experience in your leisure time?*« Here, too, it was intentionally avoided to directly broach particular risk subjects. In contrast to the initial question though, framing and focusing of the subject of risk does take place: for one, by the placement of risks into two spheres of life, everyday life and leisure, for another by equating risk with threat or hazard; the initial question leaves open whether the interviewees wanted to see harmful and/or beneficial aspects in risks.

Method of evaluation

The relatively large number of set interviews made it necessary to encode all the statements made in answer to the first three set questions. It seemed reasonable to base the coding on somewhat more complex *argumentative structures* and not on *key words*, so that it would be easier to reconstruct the intended meaning. E.g., codes were ascribed according to the stated risk, the significance of the argument within the discourse, the perceived harm - what is affected? - and its assumed extent, the source of risk, its acceptability, but also according to which role the interviewee takes towards the risk, such as passively suffering, avoiding, protesting, risk-minimizing.

All in all codes were given to a total of 443 aspects which were stated on the first three set questions by the 62 interviewees both male and female in roughly equal proportions. In order to provide unambiguous markings to the statements, the index of the transcribed interview material was adopted and also encoded⁶. The thus compiled register makes it possible to immediately access the wording transcribed or on cassette tape on any risk and any combination of ascribed characteristics. The easiest method of meeting the requirements of encoding was with an Excel database and its high flexibility, moreover an excellent SPSS interface permitted counting according to selected characteristics and aspects. However, computer-based evaluation was only an auxiliary to systemize the data material at hand and to decide which aspects are central and which are peripheral. The analysis' main focus is to select and interpret ›typical‹ and ›central‹ statements.

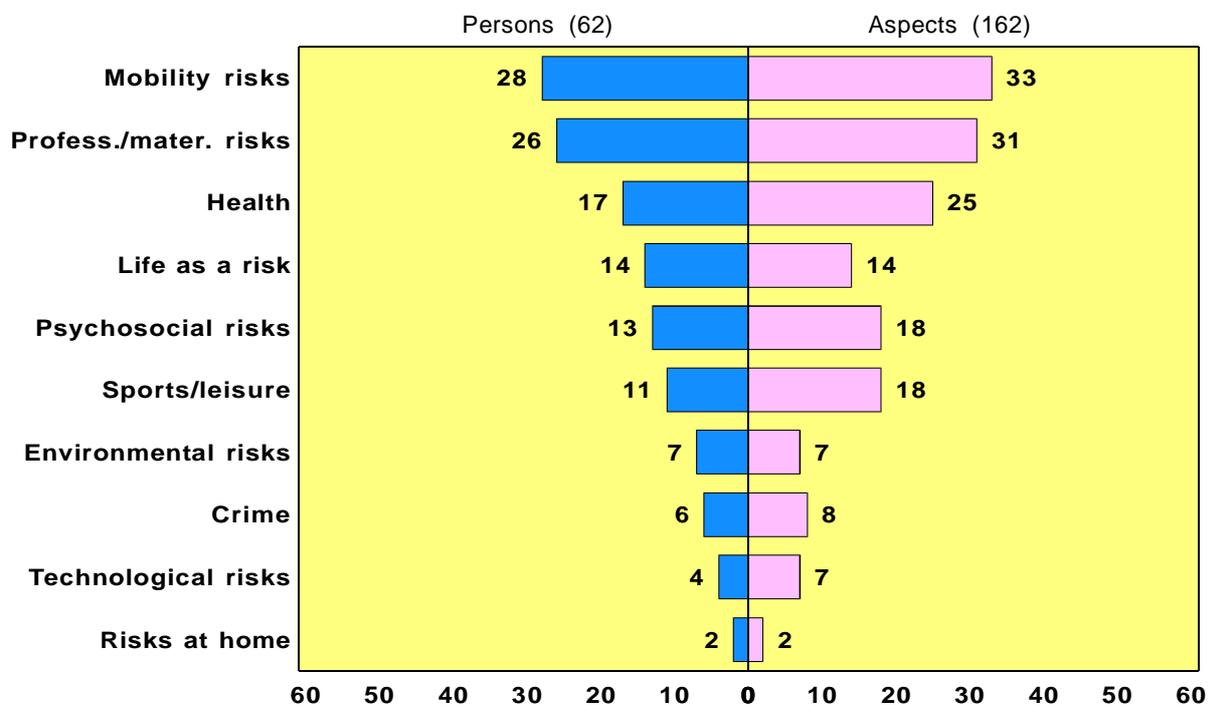
6 Thus, R24.2.069 means interview on the subject of risk no. 24, tape side 2, tape position 69.

4.3 The semantic space of risk

This section introduces exclusively those statements evoked from the 62 interviewees by the initial question »What comes to your mind on the subject of risk?«.

Fig. 1 shows that in lay perception risk semantics are part of the ›everyday world‹ and are dominated by perceptions close to the interviewees' sphere of experience: almost half of the interviewees first think of risks involved with mobility, with the better part presented by risks in road traffic.

Fig. 1: What do Interviewees Associate with »Risk«



Source: 62 Qualitative Interviews on the Risk Perception of the Public
Answers to the question: »What comes to your mind on the subject of risk?«

Mobility risks

This risk aspect is composed mainly of the relatively wide range of risks of ›driving a car‹, ›riding a bicycle‹ and participating in road traffic as a pedestrian: »Well, at first you think: ›Risk?‹ - When I cross the street I could get run over!« (R55.1.010) »It is certainly always a risk or a threat to participate in road traffic.« (R04.1.020) »Yes, basically anything can be dangerous, really - ... it can be dangerous to cross the street.« (R56.1.014) Experts

calculate risks as degree of harm multiplied by the probability of occurrence, but these short statements convey a qualitative aspect of ›probability of occurrence‹, in the sense of everyday, frequent and virtually ubiquitous hazard potentials. »As soon as you get into the car and you imagine how many accidents happen all the time, that's a risk that you permanently expose yourself to as a car driver« (R02.1.007) Even if the statements sometimes suggest a certain distance to road traffic risks, the consequences of road accidents can be serious - an allusion made in the first quote: in all cases where harm resulting from road accidents was mentioned, it was always harm to people, not one single time was material or financial damage mentioned.

Four patterns of origination emerge for hazards of road traffic. First of all there are those cases where one ponders the general dangerousness of road traffic without focusing on specific actors (see above R02.1.007). In this case road traffic appears as a rather abstract system with many actors, characterized by its potential hazards. Frequently, however, it is assumed that one's own person is exposed to a hazard caused by other traffic participants: »People here often drive aggressively, they tailgate, they overtake...« (R54.1.017) But risks are also created when »I am riding my bicycle ... [and] I am exposing myself to the hazard of being run down by some car driver.« (R17.1.019) Self-imperilment follows at a marked distance, e.g. by inattentiveness: »What do I consider dangerous? To me personally car driving would be dangerous, for example, because I am such a dreamer.« (R49.1.030) »I use my bicycle a lot to get about - even in the city. And when I zip by between cars it's pretty close sometimes!« (R52.1.023) These statements would easily permit the assumption that ›the self‹ could be a threat to ›the others‹, but the interviewee wants to convey a different meaning. Indeed there is not one section of text where an interviewee admits to himself/herself becoming a risk to others due to his participation in road traffic. In all cases, the interviewee himself/herself is the victim, a victim of the faulty action of others or - more rarely - a victim of his own action. For example it is dangerous to »cross the street without looking.« (R29.1.012).

Much less frequently, motorcycling, off-road biking or aircraft are listed as sources of hazards, such as »the hazard of flying«. (R60.1.033) Mobility can also turn into a leisure risk and in doing so can sometimes assume the character of a challenge: »What is dangerous is a hobby, for example - riding a motorcycle. That's dangerous!« (R09.1.030) »I love riding my mountain bike in rough terrain, but in road traffic, I think, this would be an increased risk, especially now in spring.« (R19.1.29)

Finally, participation in road traffic is rationalized as an omnipresent and unavoidable »everyday risk« which must be suffered as »it certainly always is a risk or a threat to participate in road traffic - I mean going someplace in a car - but that is a general risk in life which everyone has to take« (R04.1.020) »I don't think that I lead a particularly threatened

life; and I don't think it's particularly high-risk... The everyday risks which everyone has, from driving a car to being robbed. But this is a risk I consider to be very low.» (R30.1.016) »But I think it is also a high risk to drive a car; still, driving a car is an everyday event, everybody does it, I do too. Sometimes you have an accident, like I did yesterday, but otherwise, well, you do it anyway.« (R01.1.008)

Material safety, risks in economic and business life

The second most frequent interactions occur in the section ›material safety‹, which also includes risks of the overall situation of the economy - »*Speculating in stocks would be such a risk!*« (R27.1.011), or risks emerging in the context of university or professional education: »*When I start going to university, I won't know how it will end, that's a risk, too.*« (R51.1.008) However, with only four and two listed aspects respectively, these two latter subsections are hardly significant.

Frequently, professional risks are framed as everyday or common risks: »*All of life is a risk - nothing is for eternity. That starts with road traffic, in one's relationship, in your life at work. You meet with risk every day, be it in the shape of an unfriendly boss or problems concerning projects, whether they can be concluded successfully or not. So, you come across that everywhere.*« (R71.1.010) Risks are universal, »*be it in road traffic, be it when doing our job, be it in the household.*« (R10.1.018) »*Risks are everywhere: at the workplace there are for example ... risks of having an accident.*« (R24.1.012)

Job-related risks can be divided into several classes. The risk of accidents, such as in the previous case, is thought of more seldomly. Ms. N., too, a police officer, associates professional risks with the danger of having an accident: »*Risk? Spontaneously, that makes me think of professional risk. In my job I have a rather high exposure to risk. You can get shot or stabbed real quick.*« (R46.1.020)

Where professional risks are concerned, however, fears for life and limb play just as marginal a role as psychosocial disadvantages, such as »*in the shape of an unfriendly boss*« (R71.1.15) or »*Risk with regard to respect. If a company is not successful within a short period of time, you're easily considered a failure*« (R58.1.004). Instead, fears revolving around finding the right profession, holding one's job position and ensuring sufficient income prevail: »*What comes to my mind is risk in your professional choice or by choosing the wrong profession to expose yourself to the risk of no longer finding a job on the so-called employment market.*« (R28.1.007) »*Profession always involves risks. Getting a new job, too. My first job was an absolute catastrophe. That's a risk ... But it's mere coincidence.*« (R33.1.20) In the following statement job-related core themes are reduced to a common

denominator: *»Not to get a real job, to become unemployed or to be poor. Society just is highly polarized into rich and poor.«* (R55.1.019)

But professional life does not only hold risks for employees. Risk is mentioned in connection with independent entrepreneurial activities at least just as pointedly: *»Risk? Founding a company. Becoming self-employed involves a high risk!«* (R29.1.005) *»When you turn independent, risk first of all means financial loss.«* (R58.1.004)

In contrast to dependent employment whose risks are perceived as threats caused by external or incidental factors which appear to be practically unalterable, the statements of those self-employed have a much more active quality to them. Moreover, it is notable that here risks are no longer presented one-sidedly as being dangers to the chances of financial gain but as conscious decisions and acts based on a balancing of chances for profit and risks of loss: *»The term of risk really is quite a positive term to me, because in my field it is relatively easy to assess or estimate risk, thus there is hardly any risk at all. I mean, frequently the question is, how risky is it to take a new direction in the economy or with some sales. Will I do that? Will I take the risk, will I be successful or a failure? In that case, the risk is no risk to me, it is relatively easy to contain.«* (R35.1.035) *»Well, as a businesswoman the first thing I think of is of course the business risk, entrepreneurial risk in the sense that I live with it every day. Can I market this product? Is it worth it? Do I have enough purchasers? Or do I have to face the fact after a few years, »I am getting into the red, I have to discontinue this project, look for a new one.«* (R43.1.006) Despite the fact that the risk seems all the lower, the higher the individual's conviction of being in control, the statements on the subject of self-employment make it generally clear that there is no guarantee of success. *»Financial risk is what comes to my mind spontaneously: if I want to become self-employed, I run a risk«,* (R17.1.006) and in the case of a failure it is not only the decision makers themselves who can be affected but also individuals from their immediate social environment: *»For a family, for example, ... it can definitely be a risk to become self-employed instead of being an employee, and then you no longer have the economic basis for a family.«* (R04.1.012) Only to a few privileged individuals do the effects of risk not seem to entail any substantial disadvantages: *»Then there is the field of risk in everyday business: Then of course you have managers and executives making budget-related decisions, they also take risks when deciding - but in those cases it's not quite clear whether they really take a risk at all«* (R42.1.025)

Analogous to the subject of mobility, the majority of interviewees place those risks concerning work, profession and quite generally material gain into the category of ubiquitous *everyday risks*. The subject is devoid of anything abstract or exotic, so-to-speak, it is in the realm of people's immediate experience, and not only of the working population but also of those who had not (as yet) started working at the time of the

interview. As in the case of mobility, the question of material gain is a topic with relevance and risk for almost everyone. There is an indication that individual risk semantics are characterized above all by topics which can be experienced everyday, which are omnipresent and have a high mental awareness. The statements on professional risks reflect two types of ›logic‹: with employed individuals it is a feeling of being exposed to an external threat which can only be influenced with great difficulty, while self-employed individuals justify their entrepreneurial risk with the chance of making a profit; with them, risk is not an *external threat* but a challenge and the *opposite of security* - as they do not presume as given a guarantee for entrepreneurial success.

Health risks

Risks relating to the health of the interviewees constitute the third large category mentioned by one in four interviewees when answering the initial question. These include - from birth to death - diseases of all kinds of which some can be directly subsumed under the ›conditio humana‹: »*At the very top I place the risk of life in the sense of risk to my health. Which means, ultimately, the aim and object of man is to live or even to survive. In that respect one is permanently accompanied by risks, from birth to death.*« (R38.1.017) »*All of life is a risk. When we are born it's already a risk: we don't know whether we will be born healthy or sick.*« (R51.1.030)

Health hazards include the occurrence of diseases, some of them incidental, ›inexplicable‹ ones. »*By risk I also mean that one could get a disease which cannot be treated simply.*« (R23.1.015) »*They just found out that I have an allergy which is very strong...It worries me and it is a risk.*« (R23.1.032) But not all health risks are interpreted as incidental blows dealt by fate, as the threatening sword of Damocles⁷: The probability of an occurrence of other impacts on good health is structural, i.e. caused by old age, such as. »*... things which can just happen because it's your fate, where you maybe didn't play any part yourself, which come over you. If an old person takes a fall... Maybe one should give some thought to what could happen... They are hard to reckon with, are risks.*« (R41.1.041) Other syndromes seem to increase, no concrete reasons can be said, at the most speculations can be made: »*There are an increasing number of people suffering from allergies. Statistically, there is a really great number of people suffering from neurodermatitis, which in my eyes does not necessarily have anything to do with the psyche, but with the environment. Even in the case of diabetic children... with diabetes type I - statistics show sharply increasing numbers. There are a lot of younger children who must take injections, ...who must live with an insulin pump at half a year of age.*« (R72.1.011)

7 Regarding risk semantics relating to figures of Greek antiquity see also Klinke/Renn 2001.

In addition, the subject is also mentioned in discussions when health is impaired as a result of human decisions and acts, such as by a certain behavior in consumption, nutrition or the intake of stimulants such as caffeine, nicotine or alcohol: *»when you eat or smoke, you also expose yourself to a health risk that way.«* (R02.1.032) First of all, the risk of smoking must be mentioned here, almost a ›risk classic‹, so-to-speak. It is a consciously taken risk even though considerable damage to health is to be expected from it. *»Well, to me personally ... the most dangerous is my smoking, probably.«* (R49.1.045) *»And, smoking, that's clear, one should really be aware of that risk, that you can severely damage your body.«* (R02.1.032) Other behavior, too, can entail undesired side effects: *»It is dangerous to have unprotected intercourse, like I did for example and then to become suddenly pregnant... But you can also get AIDS.«* (R55.1.020) *»Risk, the first thing I can think of: sex without protection, as it is apparently done again nowadays increasingly. Then what comes to my mind, risk in choosing your food, which is front-page news right now.«* (R28.1.007)

Frequently, nutritional risks are mentioned. For one, risks based on false nutrition: *»Risks [...] by false nutrition, but I never really had a closer look at ... nutrition. I am sure there are a lot of risks involved there.«* (R02.1.033) For another, the threat caused by special substances contained in food is taken notice of, for example the BSE risk, which is occasionally touched upon in interviews. *»At the moment, what is particularly threatening in everyday life is a) all those crises concerning BSE, foot-and-mouth disease...you can't really call it catastrophes, but ... you don't really know any more how to behave as a consumer.«* (R03.1.025) *»Buying meat at your butcher! ... Basically everything involves a risk somehow, smoking! All of life is a risk somehow.«* (R32.1.005)

And finally, medicine itself can turn into a threat to one's health, be it through therapeutic measures or through drugs and their potential side effects: *»Yes, well, you first think of some drugs or medication - regarding risks and side effects.«* (R03.1.016) Observations daring to venture on human genetics research or the field of medical ethics are clearly more abstract, *»such as in the medical field nowadays life-prolonging ›measures‹, those things which always hold risks for man and which have to be dealt with more consciously.«* (R41.1.18) However, risks can also arise from *»medical research without limits. I am thinking of biogenetic research, of ... embryonic research. For example, I am thinking of research of the womb... Then of course the risk of euthanasia, which has been ... approved in Holland, which will probably cross borders to us, it has two sides. Euthanasia can of course be a relief if it is done out of one's own free will and when the disease is extremely serious and painful. But it can also be - and that's the danger, that's a real risk! -, that it is done too early and not out of the free will of the dying person. That is, I believe, a really important point.«* (R07.1.012)

These statements illustrate to what a comprehensive and complex extent ›health as a risk‹ is dealt with in the public opinion. The subject of health, however, as a risk semantic to be researched, brings comparatively great difficulties. On the one hand, people consider health as an ›autonomous‹ sphere which itself becomes a risk: health as cause and at the same time object of harm. On the other hand, the field of health emerges at the point of intersection between risks, some of which are caused by the individual himself, sometimes they are attributed to other spheres: the environment, inadequately produced foodstuffs, side effects of drugs etc.. The, if rare, identification of medical therapy and research as health risks can prove in a special way how difficult it is to keep apart cause and effect where the subject of health is concerned. Moreover, strategies of dramatization and dedramatization are wider spread than with the subjects analyzed previously. This circumstance provides neither a clear profile nor a clear judgement where the assessment of health risks as everyday risks and the question of the acceptability of those hazards are concerned. Thus, the smallest common denominator of the subject of health and of the previous fields of ›mobility‹ and ›material security‹ seems to be the fact that this subject, too, is very intimate to the interviewees and becomes the ever present companion ›from cradle to the grave‹: despite the heterogeneity of its cause-and-effect fabric, the seriousness of its consequences and the varying willingness to accept, the subject of health is - in the best sense of the word - an ›everyday subject‹.

Marginal risks

There may also be varying psychosocial risks. Be it, that one feels threatened by the reckless acts of others: »Occasionally I feel threatened by other people who don't think much about what they do and thus expose others to danger.« (R25.1.08) Be it, that one has had bad or disappointing experience with certain circles: »I have made many bad experiences with people over 40.« (R49.1.043) Moreover there is the wide field of risks resulting from relationships, with problems being listed both with having no relationship (R71) and problems within relationships. And even falling in love can be put into a category of risk: »What comes to my mind off-hand is that it is ... dangerous to fall in love. It is dangerous because your feelings [get] all mixed up.« (R45.1.040)

Evoking only seven listings, the subject field ›environment‹ obtains surprisingly little attention. The subject was related to risk in two types of variant. The first is related to natural disasters, where nature itself becomes an uncalculable hazard potential: »... various earthquakes have shown that.« (R16.007) The other and much more central aspect relates to anthropogenic environmental destruction. Some interviewees included this causative logic, false treatment of the environment, in their arguments. »Environmental disasters, i.e. climate changes ... from air pollution to waste put into the sea - it is wasteful

and destructive exploitation of nature. There will come a time when all that [will] take its toll.« (R36.1.012) It is remarkable, that for the interviewees global environmental risks such as climate change or the ozone hole are more cognitive present than personal health hazards resulting from environmental influences.

Other subjects with low cognitive presence suffering a surprising marginal existence are socio-political problem fields in general and fear of *crime* in particular. For one we're dealing with the »*brutalization of society*« (R35.1.060). For another criminal incursions are listed as personal risks, where the fear of physical violence clearly prevails over financial crime or damage to property: »*Nowadays they kill you for five marks.*« (R59.2.42) »*Yes, crime! ... The change in society, that nowadays you can't go out in the street without [exposing] yourself to ... some risk.*« (R56.1.020)

Considering all the controversial discussions on large-scale and *risk technology* - such as nuclear, genetic engineering, chemical and weapon technology or technical facilities for waste disposal -, but also when technical products and their infrastructure are in the crossfire of criticism by the public and the mass media, as is the case in the cellular network technology debate, it is highly surprising that such subjects play such a marginal role when people are generally asked about risks. It may be that all these hazards are invisible creeping risks which cannot be perceived with one's senses. Their perception thus requires sensitivity and knowledge in order to be able to ascribe vague indications of damage to a certain creeping technological risk. Their hazard potential is less tangible and thus maybe too abstract to enjoy high cognitive presence. What do the few statements focus on? Genetic engineering and nuclear power are mentioned most: »*Risk, I would say, [has] ... for example something to do with nuclear power, or with ... genetic manipulation. All those are things which are very risk-prone.*« (R04.1.008)

»*All of life is a risk*« - *an intermediary recapitulation*

»*All of life is a risk - nothing is for eternity.*« (R71.1.010) In a series of interviews this statement emerges as the quintessence of those individual subjects subsequently elaborated. Even though it was mentioned explicitly in only 14 cases as an answer to the initial question - and implied implicitly in several other cases - it has a significance by far surpassing its frequency: Among other aspects, »*all of life is a risk*« is used to semantically anchor and assess risks. This sentence serves to mark such risks which are neither rare nor exotic in their nature. It rather places risks and hazards into an everyday ubiquitous frame, which is in some instances linked to the *conditio humana*, as could be shown with the example of health risks, in other cases it is based on the living conditions of a functionally highly differentiated industrial and labour-oriented

society. Mobility-related risks or risks focusing on the question of material and employment security are examples of this.

Normalized risks

Moreover, this attitude of life itself being a risk stands for the inevitability of hazards or, in a reverse conclusion, for the fact that these risks must - perforce - be accepted: *»...but that is a general risk of life which everyone bears anyway.«* (R04.1.020) Seen from this perspective, the general statement serves the purpose of playing down risks as everyday risks which must be suffered, regardless of the feared extent of the damage, which can be considerable in traffic accidents or armed robberies. Pointedly, this strategy could also be called the ›normalization of risks‹. *»Car driving is an everyday activity, everybody does it, I do too. Sometimes you have an accident, like I had yesterday, but otherwise, well, you do it anyway.«* (R01.1.008) *»Everyday risks, which everyone has, from driving a car to being robbed. But I think this risk is a very small one.«* (R30.1.016)

The risk concept of lay individuals - and this seems essential - is linked neither to the dread of risk consequences, but to the - qualitatively applied - frequency of risks, the latter being considered ubiquitous or as an everyday normality. By this, the risk semantics of lay individuals is diametric to both the risk concept of experts⁸ and to many psychometric risk characteristics by means of which risk evaluation is to be explained. The key to understanding the differences between insights gained from standardized data and those gained from qualitative data is obvious: in standardized interviews the risks to be evaluated are given, as are the characteristics for their evaluation and assessment, whereas in qualitative interviews there is complete openness with both respect to risks and their scales of assessment. Especially after the open initial question it is nothing but the cognitive presence of subjects and examples, as well as the ability to develop aspects to explain and criteria to assess risks, on the spur of the moment. This process is supported by orientations based on experience made during the individual's life - so-called ›assumptions of normality‹ - which were learned in the process of the ›accumulation of biographic experiences‹⁹.

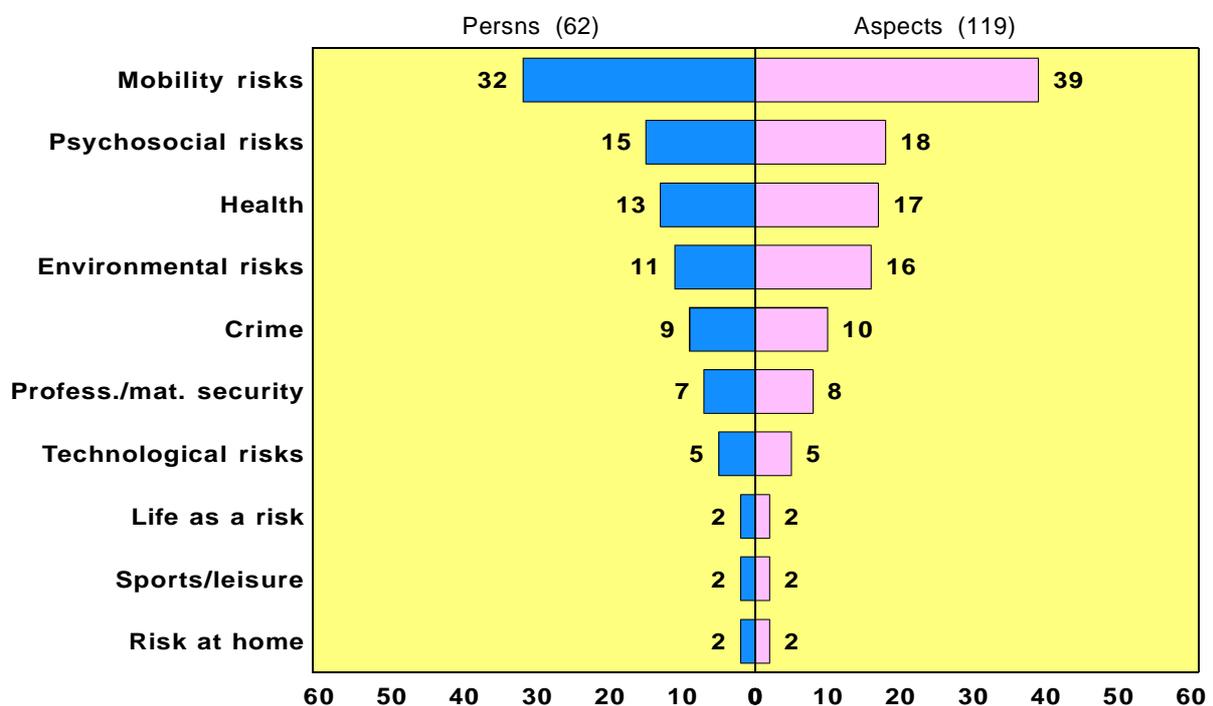
8 For a summary see also Renn/Zwick 1997: 3.1.1.1.

9 For a detailed description of the term ›accumulation of biographic experiences‹ cf. Alheit 1989 and Hoerning 1989.

4.4 Risks in everyday life

The results of the qualitative study took us by surprise. As it was, due to lack of time, neither possible to make a sequential selection of interviewees nor to revise the handbook, all interviews were carried out with the previously compiled handbook. After the open introductory question the question was asked, what the interviewee would assess as especially dangerous in everyday life and what would be considered particularly threatening during leisure time. This guideline dramaturgy was chosen because it was assumed that technology-related and environmental risks would clearly dominate in the risk perception of the public. However, climate change and the ozone hole, risks of nuclear power, genetic engineering or cellular phone networks, all these hazards are treated as exotic, abstract risks far from everyday life and personal experience - it is obvious that within the data material they hold only a marginal position! As the introductory discourse referred mainly to everyday risks, the question about the perception of risks in everyday life was particularly unfortunate.

Fig. 2: What do Interviewees Associate with »Risks in Everyday Life«



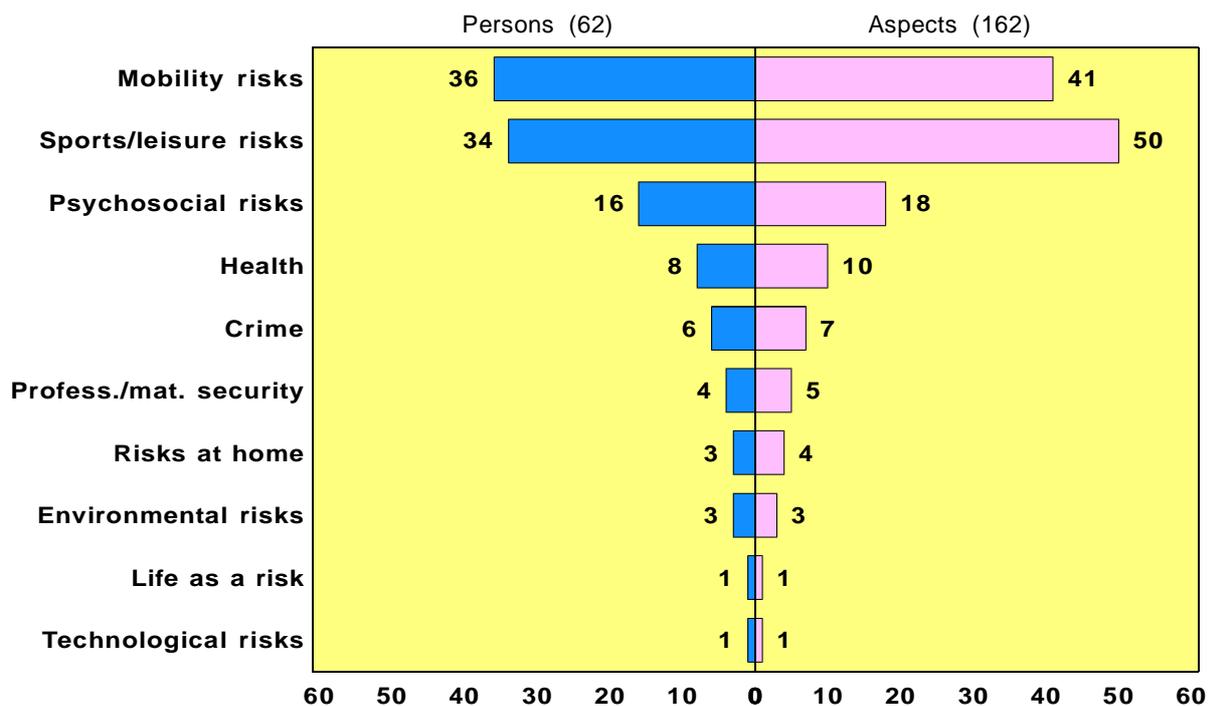
Source: 62 Qualitative Interviews on the Risk Perception of the Public
 Answers to the question: »What do you perceive as particularly threatening in everyday life?«

As is shown in Fig. 2, it hardly produced new insights but frequently led to redundant answers. The *risk of mobility*, above all, was picked up again by many interviewees and dominates - as the ›everyday risk par excellence‹ - all other risks.

4.5 Leisure risks

Responses to the ›leisure risks‹ cue turned out to be more specific. Variations of the subject of traffic do dominate, true, but closely followed by the fields of sports and leisure activities - among them 42 statements focusing on sports and 8 on activities relating to hobbies (Fig. 3).

Fig. 3: What do Interviewees Associate with »Leisure Risks«



Source: 62 Qualitative Interviews on the Perception of Risks of the Public
Answers to the question: »What is the most dangerous thing you experience in your leisure?«

Favorite examples are fun and risk sports - the risk of bungee jumping being the most frequently mentioned - even by people who do not practice any risk sports themselves: *»In leisure time I find it dangerous, for example, when somebody thinks that he absolutely has to do paragliding or free-climbing. Or bungee jumping. But these are things which do not concern me personally. These are general things which I think are high risk and threatening*

to the one who is doing it... In my leisure time I would try to avoid being exposed to threatening situations.« (R04.1.028) »*I can only think of risk sports, they are in fashion right now, like bungee jumping and paragliding.*« (R31.1.007) However, conventional fitness and sports practised in clubs are hardly mentioned at all. »*Due to the fact that I am a risk-shy person the only thing that can [happen] to me during sports activities is that maybe I could somehow break a leg while jogging.*« (R47.1.019)

In the text material sport-based activities imply different ›sport styles‹. While some individuals act very carefully and are more inclined towards conventional very low-risk types of sport, others more inclined towards risk act according to the idea that in order to achieve something one must also put something at stake. In these cases, the concept of risk is used in the sense of a personal challenge.¹⁰ It is the goal of such athletic activities to master situations by consciously taking risks: »*In sports, you run the risk of injury which you can't avoid when you do sports. Then [you try] to go to your limits, be it in tennis or soccer, ... to go to your limits and in that moment you don't think about the possibility of injury.*« (R02.1.020) Apart from this conscious acceptance of risks which finds its special intensification in the potential of going beyond those limits, sports ›in itself‹ is considered dangerous by some interviewees: »*Sporty things - I mean, they are all dangerous!*« (R49.1.045) Obviously, what comes to the mind here is Churchill's ›no sports‹.

Analogous to mobility risks, here, too, dangers emerge from the individual's own decisions or from the behavior of others: Risks arise ... »*actually only during some athletic activities, that I could break a leg, during bicycle riding, inline skating, skiing or something like that.*« (R30.1.022) »*I could be swimming in the swimming pool and someone could jump on top of me.*« (R60.1.103)

In rare cases, sport accidents can also occur in the shape of an ›Act of God‹, such as when a piece of equipment fails or breaks. »*Of course I am doing sports right now, and the cable holding the weights could snap and I could break God knows what.*« (R55.1.039)

On the whole, however, it becomes apparent that sport-related risks are largely self-inflicted and are considered to be under the individual's control. Risk varies positively in the case of such ›styles of sport‹ where limits are looked for or exceeded, it varies negatively with the use of safety equipment or the avoidance of risky behavior, whereas a feeling of high ›athletic competence‹ can have a deceptive effect: »*Since I am working in a snowboard division and teaching snowboarding and do a lot of snowboarding myself, I tell myself: ›I am good at this‹, and I overrate myself to a certain degree. That's why*

10 In his Greek risk mythology Renn would in this case reclaim the ›Hercules‹ type (1993).

I just bought myself a helmet in order to reduce the risk.» (R39.1.032) »As far as riding a bike is concerned or doing inline skating or some such, I mean any kind of sport ... [needs] a certain type of equipment, like helmet, knee and elbow protectors. [Without] good equipment I would really see quite a high risk there.« (R72.1.044)

Occasionally a remark was made that others assess the risk as much higher than the interviewee oneself, namely due to the much higher individual convictions about control: *»My parents are always saying that climbing is dangerous. Or that I take unnecessary risks that way. But I think that I can handle those risks relatively well as I know what I am doing.« (R17.1.029)*

Of the eight non-sport-based leisure activities considered risky the subject of ›vacation in foreign countries‹ is at the top. Risks are seen as a combination of uncalculable and only poorly controllable situations, with a simultaneous lack of sufficient cultural competence and infrastructural resources which would permit the handling of risk consequences without problems. *»What maybe others consider dangerous is when you travel on your own, when you travel far, ... and when you have to rely largely on yourself: Absolutely new situations, which are entirely unfamiliar. Languages you don't speak. Maybe you can express yourself only to a very limited extent, ...maybe when you become sick, ... in this completely foreign environment.« (R71.1.083)* But travelling can involve other risks too: *»When I am travelling and I carry everything on me - including dough for a few weeks - that's of course a greater risk than going for a walk here.« (R42.1.052)*

4.6 Summary and outlook

Despite the manifold facets showing in the numerous quoted statements, the risk semantics of the lay public can be characterized by a few, but central properties. Cognitive presence is given to obvious everyday risks which can be experienced by the individual's senses and which are even ›normalized‹ as more or less acceptable everyday risks even in those cases where they harbor considerable potential for harm.

The citizen always considers his perspective to be the foremost one. Based on this everyday perspective he or she tackles the risk-related questions of the world. But neither high personal or social potentials for harm or catastrophe, nor the explicit emphasis of beneficial aspects are the prominent characteristics determining the attention given to risks or their recollectability. Rather it is the omnipresence of risks which are seen as an integral component of life in a modern industrial society oriented towards work and performance: its risks are everyday risks, present at all times and all places. This is above all manifested in those risks which concern mobility and

material reproduction, whose consequences get under the skin, be it as harm to one's health or as damage concerning material survival. In the perception of the individual, traffic accidents and risks in the employment market or work place coagulate into system-inherent risks of modern industrial societies. Other risks which could be described by similar characteristics - such as environmental or technological risks - are not directly perceivable due to their creeping nature. As latent risks, however, they can nevertheless be of high relevance¹¹. Latency, however, usually means low priority and obviously low cognitive awareness. This is the really surprising part of the findings of our analyses.

In the end it turned out that the concept of ›risk‹ is predominantly associated with threat and expectations of harm or loss. Merely where leisure or entrepreneurial risks were concerned, expectations of benefit and venture aspects showed clearly.

Moreover it is not only the interviewed risk laymen who attach risk semantics predominantly to the practical ability to experience hazards. Our comprehensive sample also included interviewees - self-employed individuals, scientists or individuals employed by insurance companies - who should be familiar with risk calculations.¹² It is surprising here too that - with the exception of some vague marginal considerations - approaches of analytical risk concepts are equally ›covered up‹ by everyday considerations and examples. Thus, the attitude that life - as a kind of *conditio humana* - is full of risks, in many cases becomes the basic stance of risk perception. Thus, the reproach occasionally directed to the German public, that individuals in this country have a fixation on nature, that they are risk-shy and averse to technology, practically holds no water: »In our country, it is above all hazards and threats which are seen in new technologies, and less their benefit. The word ›fear‹ has become a global synonym of the German attitude. The call ›back to nature‹ sets a trend which is a fundamental threat to countries like Germany which are poor in natural resources.« (Büchel 1995: 4) In their entirety, the set interviews show neither fearful resignation nor a fixation on environmental problems and just as little a decisive resistance against seemingly unacceptable risks, but rather an accedence, a submission to the unavoidable. Merely where leisure risks are concerned individual control convictions can be seen and likely applied in practice.

Our results substantiate that it was justified to remove qualitative research of risk perception from the category of insignificant ›preliminary studies‹ for quantitative ›principal studies‹ and to consider them as an equally important instrument for the

11 The following contribution by Ester Höhle proves this by using the perception of anthropogenic environmental risks.

12 However, the concerned individuals were not interviewed in their professional capacity.

finding of knowledge. This much became clear: Many survey studies on risk perception and evaluation select risks and provide properties for their characterization, that are highly oriented to actual or apparent *political* or *economic relevance*, or mass-media-based attractiveness. And yet they more or less miss the understanding of risk of the lay public: the sometimes highly controversial discussions of nuclear power, genetic engineering, global climate risks or hazards caused by cellular network technology may result in differing assessments also by the lay public, - however, they only have central significance to a minority at the most. Conversely it would be interesting for future risk research to vary risks more and to use everyday risks - such as road traffic- and work-related risks - to compare and to ›standardize‹ the perception and evaluation of other, less tangible risks.

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