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Interdisciplinary life quality measures as universal risk measure

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Risk estimators serve as a technique to describe the status of safety in numerical terms. Since the use of early risk parameters and risk evaluation techniques have undergone tremendous developments; thanks to that a wide range of risk estimators are available now. The simplest forms of risk estimators for individuals are the estimation of probability of death or frequency of death. In order to consider the so-called risk aversion factor of humans, the F-N-Diagram has been developed. Again, this risk parameter also contains disadvantages since the parameter lacks the feasibility to consider health risks in a proper way. To be more precise, the F-N-Diagrams are not able to consider whether people died at an old age or at a very young age. This is of major importance since we consider human deaths at the age of 80 as normal when caused by health problems, whereas the death of young people caused by traffic accidents seems to be avoidable. To consider the effect mentioned above, the so-called concept of Years of Lost Life or Lost Life Expectancy was introduced. This measure shows that the greatest risks to humans are social risks. If social risks are the highest possible risks to humans, then they have to be considered in every kind of risk assessment or safety assessment. Therefore, a risk parameter is required which includes social risks as well. These risk parameters, probably introduced 1920 by PIGOU are quality of life parameters. Not only in the field of economical science, but also in other fields have these parameters been used widely for decades. For example, in the field of health care, quality of life parameters have been in use since 1960. Nowadays more than 800 healths based quality of life parameters are in use. Also in other fields, such as in social sciences, new parameters are constantly being developed and used.

The aim of all risk estimators is the estimation and reduction of risks. Due to the fact that all resources are limited, risk reduction techniques, for example safety belts,

have to be efficient. The efficiency of every kind of action to reduce risks has to be evaluated. TENGS et al., VISCUSI and JOAKIM et al. have already investigated the efficiency of risk reduction techniques in all fields. They discovered a great amount of inhomogeneity in terms of the number of lives saved per investigated monetary unit for all fields. Therefore, a quality of life measure is needed, which can be applied in every field ranging for example from the risk reduction arrangements in the field of criminal science to the field of medicine or structural engineering. First attempts for developing such a parameter were made by the authors. They compared the Life Quality Index from NATHWANI, PANDEY and LIND with the SF-36, a disease-independent Quality of Life measure in the medicine in the case of adjuvant immune therapy for patients with maligner melanoma. A dynamic formulation of Quality of Life measures should be suggested. Limitations of quality-of-life parameters in terms of dealing with complex systems, such as humans and societies will be mentioned as well.