Introduction

I would like to start with an interesting research result which combines biological and psychological parameters concerning aging. Recently a group of DNA researchers from the University of California in San Francisco (Elissa Epel and Elizabeth Blackburn) found out that a life full of stress may speed aging and a carefree outlook can keep the genes young. They examined the DNA of white blood cells which are central to the body’s immune response to infection, in particular on a piece of DNA, called the telomere, at the very tip of each cell’s chromosomes. Subjects were young and middle-aged women who were caring for a child with a chronic disorder like autism or cerebral palsy. They found out that the women who had taken care of their child for a long time were years older than their chronological age. Most interestingly, women who perceived subjectively that they were under heavy stress also had significantly shortened telomeres, compared with those women who felt more relaxed, whether they were raising a disabled child or not. The researchers want to find out in future studies what it is that promotes this kind of resilience (New York Times, 2004).

This recent study of high actuality on the effect of heavy stress at a molecular level illustrates exiting and promising results on both premature aging and resilience.

Definition and concepts of resilience

“Resilience” means in general psychic resistance despite of stressors, adversity, high-risk environments, and challenges in different stages of human development. In
the 70s and 80s the research on resilience in several bio-social-medical disciplines came mainly from the United States and Great Britain. Resilience research is one of the most important areas of developmental psychopathology (Cicchetti & Garmezy, 1993) and developmental psychology. Also the medical sociologist Antonovsky (1987), with his concept of “salutogenesis”, wanted to know more about the reasons why some persons have a relatively intact development in spite of high risks in life and why they cope better and faster with traumata than others.

The attention to protective factors and processes have gained a true enlargement of traditional risk factor research (Rutter, 1985). The interest and publications on resilience is rapidly growing in the recent two decades, some researchers warn, however, that it may turn into a fancy concept without knowing much about it. The risk is that resilience may be regarded as a mystic power which provides an individual with limitless invulnerability.

Resilience has also been linked to concepts such as “emotional intelligence” (Edward & Warelow, 2005), “self-regulation” (Buckner et al., 2003), or “self-organization” (Cicchetti & Rogosch, 1997). There is a general agreement among international resilience researchers that resilience is not just social competence or mental health. Resilience is not determined by static protective factors but by dynamic ones through which multiple or accumulated risks may be moderated, as suggested by well-known researchers such as Emmy Werner or Michael Rutter.

In the family therapy approach, resilience is not a personality trait but a disposition for action acquired within the family system, later on influences from outside the family will contribute additionally to an individual’s resilience (e.g., Hildenbrand, 2005). Basic processes of resilience are understood in analogy to biological processes, which are

a) protection (e.g., immune system),

b) repair (e.g., wound healing) and

c) regeneration (e.g. sleep) (Lösel, 2005).
**General protective factors**

According to an overview of one of the leading German resilience researchers Lösel and Bender (1999), the following *general protective factors* against different disorders have been found in the international research:

- A stable emotional relationship to at least one parent or another significant person
- An emotionally positive, supportive and structure-building educational climate
- Role models for a constructive coping behavior towards restrain or stress
- Social support by persons outside of the family
- Responsibilities in the family to some extent
- Temperament characteristics (e.g., flexibility, approaching others, sociability)
- Cognitive competences (e.g., an at least average intelligence)
- Self-efficacy and a positive self-concept
- An active and not only reactive or avoiding coping behavior towards stress
- Experience of meaningfulness and structure in one’s own development
- Realistic future planning
- Sense of humor

Rutter (2005) emphasizes, in terms of general protective factors, that we talk about a range of qualities, not just single ones. We talk about a range of various adaptation possibilities in order to counter high risk situations and influences.

Different studies found out similar general protective factors, for example:

- The longitudinal Kauai-Study on resilience by Werner and Smith (1982, 1992)
- Studies on children with mentally ill parents (e.g., Anthony, 1987; Garmezy & Devine, 1984)
- Studies on children from divorced parents (e.g., Hetherington, 1989) or families with abuse and neglect (e.g., Cicchetti et al., 1993)
- Studies on children in families with severe social decline (e.g., Elder et al., 1986) or children in fostering homes (e.g., Rutter & Quinton, 1984)
Study on families from war areas and migration families (e.g., Garbarino, 1990)

Such a perspective on general protective factors can be useful for the transfer of research results into practice, such as health promotion, social work, education or family support (Lösel, 1994; Vanistendael, 1995).

More specific protective development processes

Recent research on resilience has shown that general protective factors can only be a first step towards more specific factors, such as context, process, and developmental variables. Not only common research results on more general protective factors are important but also their differences. These differences may be attributed to multiform reasons, such as the applied research design, specific disorders and criteria for resilience, or assessment methods.

In the following some criteria will be illustrated which may contribute to the research of more specific protective factors, according to the overview of Lösel and Bender (1999).

(1) Underlying resilience criteria

There are different results depending on the criteria for resilience, such as social competence, school achievement or lack of clinical symptoms. For example, if adolescents are considered “resilient” since they don’t show severe problems of aggression or delinquency in a high-risk milieu, this does not mean that they are mentally healthy. If there is a lack of externalizing symptoms there may exist less visible internalizing disorders such as anxiety, depression or psychosomatic disorders.

Some authors suggest to define resilience not only by the absence of disorders but by positive indicators of competence (e.g., Garmezy et al., 1984; Luthar, 1991; Radke-Yarrow & Sherman, 1990). For this, the successful
coping of certain developmental tasks is to be regarded and therefore a higher threshold for resilience may be required.

(2) Methodological design

There is a methodological problem of assessing protective factors in their presence or absence. For example, a reliable supportive person is a protective factor for the child. The negative pole, that means the lack of a protective factor, may have a vulnerability function by additionally increasing the risk function of other variables (Rutter, 1987).

Research results on resilience suggest that we need more replications and multi-method analyses. Interaction effects are difficult to determine since differentiated combinations of characteristics lead to very small sub-samples.

Since there are only moderate correlations of behavior evaluations by parents, peers, teachers and other experts as well as self-reports, there are to be considered multiple settings and multiple informants.

(3) Accumulation of factors

In resilience studies it is usual to investigate single risks, such as divorce, poverty, mental disorders or delinquency of parents. However, development psychopathology research has shown that single risk factors correlate only low with disorders of experience and behavior (Compas & Phares, 1991; Lösel, 1991). Only the accumulation of several risk factors will increase the probability that children develop disorders (e.g., Hawkins et al., 1998; Masten et al., 1990).

(4) Ambiguity of characteristics

Risk and protective factors have a “double face” according to newer research results. Under certain circumstances the normally “positive” pole of a characteristic can contribute to the development of a disorder. The other way
around, the “negative” pole can have a protective function. For example, self-confidence or a positive self-esteem usually helps people to cope easier with multiple developmental risks. An exception may be a particularly strong self-esteem in persistent violent persons who tend to have an exaggerated high self-evaluation. In this case it will have the function of a risk factor (e.g., Baumeister et al., 1996).

(5) Relation to the broader social context

Most of resilience studies focus on individual and micro-social factors and less on the significance of the broader social context for the individual’s development. These are widely recognized factors such as macro-social factors, neighborhood, and community. For example, Richters and Martinez (1993) observed that violence in the community only had influence on the maladjustment of children if it was related to instability and uncertainty in the respective families.

(6) Biological factors

Resilience research does not agree with an inherited invulnerability (Rutter, 1985), it assumes a closer interdependence of biological, psychological and social risk and protective mechanisms. Most of the resilience studies, however, deal only indirectly with biological factors such as intelligence or temperament which suppose to have a high inheritance. We still don’t know much about the interaction of biological and social factors. There are no simple causal influences on the development of behavior disorders but interactions with social and psychological factors. Newer research suggest that social and biological influences are not always separable. Curtis and Cicchetti (2003) suggest the application of brain imaging and other technologies in order to know more about the possible relation between the mechanisms of neural plasticity and resilience.
Sex differences

There are several examples that protective processes are different for boys and girls (e.g., Elder et al., 1984; Kolip, 1993). For example, girls develop more often stable forms of internalized disorders while boys show more externalized problems (Costello & Angold, 1995; McCord & Ensminger, 1997). And boys seem to have more often multiple risks and to be more vulnerable towards biological risks and family deficits than girls in the first decade.

Implications for psychotherapy

The Swiss family and systemic psychotherapist Welter-Enderlin (2005), who organized a resilience conference in Zürich early this year, points out the following for psychotherapy:

- The usual focusing on early childhood is often one-sided. Resilience research provides evidence that negative experiences once made not always shapes the later life of a person in a negative way.
- Attachment theory sometimes neglects the fact that people are not just the product of their socialization but can develop themselves with own forces.
- The influence of broader social factors outside the nuclear family on a person need to be considered more strongly in psychotherapy.
- Trauma psychotherapy often focuses just on trauma and the patient's role as a victim. Instead, concrete help how to cope with daily life again and promoting repression and the capability to forget is often experienced as more helpful by patients.
- Just asking patients about their strengths is too banal. A therapist has to be ready and open for listening to often extremely negative experiences of their patients. At the same time we should encourage them to be proud of the way they dealt so far with their problems in life.

I would like to close with the words of Sir Michael Rutter (2005), that we are just at the beginning to understand how to use research results on resilience for prevention, health promotion, and psychosocial interventions.
References


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