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ABSTRACT

A brief review of research on protective factors that allow some individuals to make healthy adaptations despite debilitating circumstances precedes a critical discussion of symposium papers. The discussion is organized around three questions. First, does the search for protective factors demonstrate an important programmatic shift in developmental research? Second, from what threats do protective factors protect the child? Third, what research designs can be used to identify protective factors? It is argued that: (1) there is no point in speaking of protective factors without knowing what risks they defend against; (2) most available epidemiological research into risk and protective factors is essentially retrospective and therefore serves heuristic purposes only; (3) researchers should shift their attention from the detection of protective factors to the identification of protective mechanisms; and (4) the best way to compensate for the uncertainties of explorations based on epidemiological research is controlled experimental manipulation of assumed protective variables in the framework of longitudinal experimental research. (RH)

The identification of protective mechanisms.

W. Koops

Presented at a Symposium on Risk and Protective Factors in Childhood and Adolescence, July, 15, 1987, at the 9th Biennial Meetings of the International Society for The Study of Behavioural Development, Tokyo, Japan.

In this contribution towards the discussion on the central theme of this symposium I shall begin by looking at the short history of research on protective factors. Against that background I shall pose three questions leading to discussion in the following areas.

First: the innovation in developmental research said to result from the systematic search for protective factors.

Second: the threats against which the protective factors offer protection.

Finally: the research designs needed to achieve more clarity on the functioning of protective factors through protective mechanisms.

Clarification of the concept "protective factors" can be found in Prof. Rutter's first paper on the subject in 1979 and in various papers by members of the "Project Competence" at the University of Minnesota, by the leader of this team in particular, professor Norman Garmezy and his colleagues Ann Masten and Auke Tellegen. A recent paper by Garmezy (1987) offers a good description of the history of this research program.

The whole conceptual background is summed up in the title of a paper by Masten & Garmezy (1985): "Risk, vulnerability and protective factors in developmental psychopathology". I will give a short description of the concepts in this title. According to Masten & Garmezy: the concept of risk in psychopathology is founded in epidemiology with its emphasis on the patterns of disease occurrence in human populations and of the factors that influence these patterns. The presence of risk factors assumes a higher probability for the development of a disorder; in fact these factors are statistically associated with higher incidence rates.

Risk factors which are frequently referred to, are the so-called stressors. A stressor is "any change in the environment which typically - i.e., in the average person - induces a high degree of continual tension and interferes with normal patterns of response". Stressors require varying degrees of accomodation and the adaptation process is often referred to as coping, or if you prefer professor Garmezy's terminology of today: as maintenance of competence. Some individuals cope less well or are less competent than others, they have - so to speak - a predisposition towards a specific disorder, for instance a general susceptibility to stress. These individuals are called vulnerable. So the concept of vulnerability refers to individuals, as opposed to the concept of risk, which refers to statistical probabilities that some groups of people will become affected by particular disorders.

The opposite of vulnerability is invulnerability, for instance stress-resistance. Only since 1979 have authors begun to use a new, broad concept in the place of invulnerability, namely the concept of protective factors. The term "protective factors" is used as the positive counterpart of risk factors, and includes individual invulnerability. Protective factors include both individual and environmental characteristics or events. And so the concept is broadly applicable, as demonstrated in a review-article by Garmezy (1985) which distinguishes three classes of protective factors:

1. personality dispositions of the child: such factors as: activity, hardiness, autonomy, self-esteem and the like.

2. a supportive family milieu: this category focuses on family cohesion, warmth and the absence of discord and neglect.

3. the presence of extended support systems: the availibility of external resources and whether individual kith and kin-support or institutional supports were available to child and parent.

In summarizing this conceptual analysis we may conclude that the concept of "protective factors" is embedded in the tradition of risk- and vulnerability-research. It reflects the recent interest of developmental psychopathologists in "factors that allow some individuals to make surprisingly healthy adaptations despite seemingly debilitating circumstances" (I quote here from Garmezy and Tellegen, 1984).

Against this background I should now like to pose three questions and venture some critical comments on the contributions to this symposium.

Question 1. Does the search for protective factors demonstrate an important programmatic shift in developmental research?

From the beginning, i.e. Rutter's paper of 1979, the search for protective factors is introduced as an important paradigmatic shift in developmental psychology. To quote Rutter: "There is a regrettable tendency to focus gloomily on the ills of mankind and on all that can and does go wrong... The potential for prevention surely lies in increasing our knowledge and understanding of the reasons why some children are not damaged by deprivation...." To quote Garmezy: "Protective factors - the inhibitors of pathogenatic processes - have played a negligible role either in theory construction or in the empirical researches of psychiatric investigations".

This I can only partly understand. Only when we speak of "protective factors" against a background of risk - research and epidemiology, as indeed Rutter did, can a slight suggestion of a "paradigmatic shift" be justified. If the term is used more broadly however, as is sometimes the case in the writings of Garmezy, then the suggestion is carried too far. If by "protective factors" one may understand, for example, "drug maintenance", "training patients in social skills" and the like (Garmezy, 1985) then the whole long history of clinical child psychology and psychiatry may be described as one continuous search for protective factors. (With an eye to politicians and other controllers of research funds we would do well to put it this way). This is particularly important so as not to give the impression that "naturalistic protective factors" could well take over the work of psychologists and psychiatrists and that the latter prefer to provide continuity in "pathological development" rather than discontinuity through the introduction of protective factors.

Question 2. From what threats do protective factors protect the child?

I have already stated - but I will repeat - that the concept of protective factors must be defined in the context of risk- and vulnerability - research. It does not make sense to use the concept without any reference to the threats against which the

child should be protected.

Last year I took part in a symposium on protective factors at the Free University of Amsterdam. At that symposium my colleague professor Cees van Lieshout (1986) presented some intriguing data on the structure of the self-concept of young children in relation to social and cognitive competence. The first sentence in his paper was: "...my presentation will be based on the study of protective factors in the development of mormal, i.e. non clinical children". This proviso and the absence of any consideration of risk, stress, vulnerability and the like made it difficult for me to understand what van Lieshout meant by his term "protective factors". Now I have similar problems regarding the significance of dr. Berry's paper in the context of a symposium on risk and protective factors. I would like to ask the question: "From what risk are the Down syndrome children and adults protected?" Literally, there is no risk in the sense of higher probability for the development of a disorder, because impaired development is certain from the moment (pre-natal or at birth) of identification of the specific biological disorder. Secondly I am not yet certain that the lack of evidence of a plateau of development in the Brisbane-study is of any importance, because this deviation from Gibson's data may be an artefact. It is quite possible, even likely, that the contamination of cohort and age effects in the cross-sectional study of the development of intelligence, caused an artificial and therefore meaningless plateau in Gibson's data. This artefact is corrected then by the longitudinal data of Brisbane. In my opinion this has no specific implications for theorizing on protective factors. In a similar sense I would like to ask Walper and Silbereisen to explain in which way personal characteristics of adolescents like high public selfconsciousness could be handled as a source of protection, as is the claim in the introduction of their paper. Wouldn't it be more correct just to speak of vulnerability to the impact of family desintegration?

Question 3. What research designs can we use to find protective factors?

Despite the fact that the first data on protective factors have been derived from longitudinal epidemiological studies, they are in essence retrospective in character. Only after the data had been gathered did it turn out that "... some children made surprisingly healthy adaptations despite debilitating circumstances" (to use once again the expression of Garmezy and Tellegen). A well-known example is the famous longitudinal study by dr. Emmy Werner and co-workers (Werner et al., 1971; Werner & Smith, 1977, 1982). They studied "The Children of Kauai", who were exposed to perinatal stress, poverty, family instability, limited parental education etc. etc. Despite the presence of these risk-factors some children were coping quite well. These "resilient" children were compared with peers who were coping inadequately. The subsequent search for discriminating variables suggested the following "protective factors": a) a supportive family milieu: better relationships with the parents, family closeness, rule setting and discipline; b) personality dispositions of the child, such as autonomy, social responsiveness etc.; c) the presence of support from older friends, peers, teachers etc. Of course: such analyses are very important for explorative and heuristic

purposes. But decisive data may only be acquired by means of experimental designs or quasi-experimental designs of a prospective hypothesis-testing nature.

In this context it is important to realize, as professor Kalverboer did in a recent paper on "Follow-up of biological high-risk groups" (Kalverboer, 1987), that in retrospective studies in almost all cases pre- and perinatal complications are found to be related to later psychiatric conditions, such as schizophrenia. However in prospective studies almost no substantial relationships have been found between so-called early biological risk facors and psychopathology at a later age.

An important step towards the independent testing of hypotheses resulting from longitudinal epidemiological studies is the design of quasi-experimental research of the type carried out by prof. Rutter as early as 1979. He concluded from his famous "Isle of Whight"-study that among others the two following family risk factors are correlated with childhood psychiatric disorders: "marital discord" and "parental psychopathology". Rutter used his epidemiological data to search for stress-resistance facors. His 1979 article on "protective factors in children's responses to stress and disadvantage" demonstrates how he pioneered the study of protective factors. He chose a sample of children living with their biological parents who met the two criteria: "marital discord" and "parental psychopathology". It was known from studies of children in institutions that the establishment of a stable child-adult relationship correlates with better social adjustment of the child. Therefore a comparison was made between children who benefited from some degree of parental affection and others who lacked a good relationship with either parent. It turned out that the incidence of psychiatric disorder was 25% in the first group and approximately 75% in the latter group. The conclusion may be then that a protective component is provided by a supportive, stable and cohesive family climate.

A second example of a well-designed quasi-experiment is Walper & Silbereisen's research. In essence it follows Rutter's design: it starts from the explorative data in an earlier longitudinal study (that of Elder) and it compares two well-defined groups: in this case: adolescents with high and low self-consciousness. Their data show that the full chain of detrimental effects holds true only for the experimental group of adolescents with high public self-consciousness.

These two examples show how evidence can be gained through quasi-experimental research, which originates from explorations based on longitudinal epidemiological research projects. In this way the capitalisation on chance, characteristic of epidemiological research on risk and protective factors, can be compensated.

However, one final step is necessary to offer real insight into the functioning of protective factors, and therefore into "protective mechanisms". I believe that this step should consist of experimental, longitudinal research, in which the protective variables are systematically manipulated, while their effects are established longitudinally. Unfortunately, this type of research is missing to a large extent. I should like to see researchers turn their creative talents in this direction.

May I give one example. There is at present in Holland a nationwide longitudinal experimental research project on early caregiver-child interactions. In this project the sensitive responsiveness of mothers is systematically manipulated through

intervention programmes. In the first place the central hypothesis of modern attachment theory is experimentally tested, i.e. the hypothesis that the sensitive responsiveness of the caregiver determines the quality of the attachment relationship, as measured by the well known "Strange Situation"-procedure of Ainsworth. Secondly, the longitudinal design permits close examination of the relationship between quality of attachment and relevant aspects of social and cognitive development at a later age - in the Dutch project: 2 to 4 years. Thirdly, we can judge if well-known developmental risks can be prevented in special clinical groups. Among these groups are for instance premature or dysmature infants and those with cleft lips and/or palates. With these risk groups it is assumed that the early establishment of behavioral adaptation between baby and mother in feeding- and play-situations is hampered. The research design enables us to make generalizations on experimentally induced sensitive responsiveness of the mother as a protective mechanism against the development of social and cognitive incompetence.

I would like to ask Walper & Silbereisen if they could amagine such an experimental longitudinal design in which case they could manipulate such variables as "family integration" and/or public self consciousness, within the framework of their "Berlin Youth longitudinal study".

One last remark on professor Kalverboer's paper. It is clear that in his laboratory some interesting experimental data were gathered on so-called children with an attentional deficit disorder with or without hyperactivity. It is not clear to me in what way this research is directly contributing to the search for protective factors. In my opinion this research is, just as Kalverboer's earlier research on MBD-children an interesting and critical contribution to a more precise definition of a particular clinical group. And therefore one can hope that these data protect other researchers and clinicians against wrongly designed risk studies. How to protect the children themselves however, is quite another question.

To sum up, then:

1. There is no point in talking about protective factors without knowing what risks are referred to.

2. Most available epidemiological research into risk and protectivbe factors is in essence retrospective in nature and therefore serves heuristic purposes only.

3. Reseachers should shift their attention from the detection of protective factors to the identification of protective mechanisms.

4. The best way to compensate for the uncertainties of explorations based on epidemiological research is: controlled experimental manipulation of assumed protective variables in the framework of longitudinal experimental research.

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