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The Resilient Child: Theoretical Perspectives and a Review of the Literature
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The author situates the study of "resilience" and the "resilient child" within the context of early childhood intervention programs for vulnerable young children and their families. Secondly, the concepts of vulnerability, invulnerability, risk factors and protection within the framework of an ecosystemic approach are defined. A model of classification, identifying the risk factors and the factors for protection is proposed. He then defines the model for resilience and its hypothetical construct, following current trends in research. He reports the results of current studies in this area conducted by researchers from his laboratory in Quebec working with children and families from poor socio-economic backgrounds and immigrant communities and explains the instruments used in this research. The author concludes by proposing some directions for further research.

The Resilient Child: Theoretical Perspectives and a Review of the Literature

Bernard Terrisse

The frequent observation (Deutch 1963, Riessman 1962) that a very large number of children experiencing learning difficulties and problems adapting come from low socio-economic backgrounds (LSE), was the origin of the development of early-intervention education programs for "at-risk" children. The "at-risk" child is one whose background, whether it pertain to personality, familial or environmental problems, places him/her in a high-risk group for developing psychopathological problems at a young age. The appearance or not of difficulties in an individual child depends on the nature of interactions between of his/her individual personality and the characteristics of the ecosystem in which s/he develops. Referring to the model we have previously outlined in a prior publication (Terrisse, Larose, Lefebvre, 1998, p.40), we categorize the development of the child in one of the following four situations.

1. The child without deficiencies developing in a favourable environment.
2. The child with deficiencies developing in a favourable environment.
3. The child without deficiencies developing in an unfavourable environment
4. The child with deficiencies developing in an unfavourable environment

The majority of "at-risk" children fall into the third category (which corresponds to that of children from low socio-economic backgrounds) since the percentage of children showing pre- or neonatal deficiencies is relatively low, (3% of the general population). It is within this third category that most socio-educational intervention projects are developed.

I. Early Socio-Educational Intervention and Vulnerability

Early childhood intervention programs for "at-risk" children such as "Head Start" (Little, A. and Smith, G., 1971; Zigler and Muenchow 1992) in the United States and "Operation Renewal" (Vandromme, 1979) begun by the DEDAPAM Project (Bonnier and Tremblay; 1977) or by the "One Good Step for a Better Future" in Ontario (Ministry of Social and Community Services, 1989). All of these projects were planned with in a compensatory perspective: at-risk children are considered to be under-stimulated or inadequately stimulated during the early period of their life, it becomes necessary to augment outside educational stimulation that will compensate for initial familial deficiencies and prevent future difficulties. It is therefore a primary prevention approach; to be implemented before difficulties appear in children identified as "vulnerable". Werner (1993) defines vulnerability the predisposition of a child to develop learning and adaptation difficulties as s/he grows.

The first evaluations of the effect of large remedial education programs in the United States revealed that these programs had a greater chance of showing long-term effectiveness if the

intervention took into account not only the child but also his/her immediate entourage; particularly the family and also the social and educational environment (Cicrelli, V.G., Evans, J.W., and Schiller, J.S., 1969). This gave rise to the early childhood programs that included education and parental coaching (Goodson and Hess, 1975; Terrisse and Pineult, 1989). To develop these projects and define the objectives, research concentrated on identifying risk factors that could be the origins of vulnerability and difficulties (i.e. sociological, economic, and psycho-sociological factors), the goal ultimately being to develop strategies to eliminate or compensate for these factors. This area of research works within the scope of developmental psychopathology particularly studies on infantile psychiatry.

This research has also shown that a certain number of at-risk children although confronted with socioeconomic conditions that appear very unfavourable at first glance, are socially well adapted and perform well academically. These children are atypical, the exceptions to the rule of sociological determinism. This has opened a new area of interest among researchers: To identify the contributing factors that could explain the apparent invulnerability of certain children to their unfavourable environmental conditions; in other words, find an explanation for their "resilience" to these conditions. (We suggest in the following chapter that the term "invulnerability" is perhaps no longer adequate). In current research on the subject, it is no longer a question of identifying or describing the personal or environmental factors that are associated with the maladapted child, but to also try to define and understand the interactions of factors associated with the child's coping skills despite unfavourable conditions (Garmezy, 1992). It is therefore important to define the concepts of risk factors and of protective factors within the framework of an ecosystemic analysis (Belsky, 1984; Bronfenbrenner, 1979, 1989; Theodorson, 1982).

II. Risk Factors and Factors of Protection

Garmezy (1985) defines the factors of risk as being factors that increase the possibility a child has learning and coping difficulties if s/he is compared with the general child population. Inversely, Garmezy (1985) defines the factors of protection as characteristics of the individual and his/her environment able to counteract or limit the risk factors. The study of the factors of protection implies then that the child is being confronted by unfavourable conditions.

Risk factors and protective factors can be related either to the individual or his/her environment or to interactions between the different levels of this ecosystem constantly changing over time (a chronosystem) as well as interactions at each of the levels themselves (an endosystem).

Each level of the ecosystem can generate risk factors as well as protective barriers. It is the interactions coming from different levels of the ecosystem that can cause one individual to encounter problems and another to become resilient. We will attempt to define the principal risk factors and factors of protection from a review of recent research. Research in this area has concentrated more on the characteristics of the individual child and his/her

microsystem (especially the family) and the mesosystem than on factors due to the exosystem and the macrosystem. This is probably due to the fact that the factors inherent in these latter two are not immediately apparent; they are abstract and inferred. In fact, macrosystemic factors (values, ideologies, and beliefs) do not become observable until they are translated into changes in society and government policies as are then put into operation within institutions. Identification of risk factors and factors for protection has been the subject of several studies among which we cite Kimchi and Schaffner (1990) and Grizenko and Fischer (1992). We have supplemented this work by collating recent work on the subject into a framework for categorization (Table 1) in which we distinguish individual factors and environmental factors connected to the various levels of the ecosystem:

Among the individual factors, we distinguish physical factors from acquired factors and these acquired factors are further divided into organic and psychological factors with these according to the different pre, peri, neo and post-natal time periods.

Among the microsystemic factors, we distinguish socio-economic factors from psychological factors within the family environment. Within the care-giving environment structural factors are distinguished from psycho-sociological factors.

With mesosystemic factors, we also distinguish intervening factors (psycho-sociological) from the structural type.

Within the macrosystemic factors, there are the obvious general beliefs and values on the meaning of life (Justice, Equality, Solidarity, etc.) that cannot be considered in and of themselves to be risk factors or protective factors within our societies. We will therefore retain only the instrumental values that become laws and policies.

Table 1
Risk Factors and Protection Factors in an Ecosystemic Analysis

<p>Ontosystemic factors</p>	<ol style="list-style-type: none"> 1. Pre, peri and neonatal factors: organic (genetic, neurological), gender, physical characteristics 2. Post-natal factors: organic and environmental 3. Personal factors acquired during infancy: attachment, cognitive development, social skills, etc.
<p>Microsystemic Factors 1. Family 2. Caregiving Environment</p>	<ol style="list-style-type: none"> 1. Family <ul style="list-style-type: none"> - Socio-economic factors: socio-economic status, parents' situation, physical and mental health of the parents, social network of support, etc. - psychological factors: values, practical educational attitudes, self worth, parental beliefs 2. Care-giving environment <ul style="list-style-type: none"> - Structure: locale, caregiver/child ratio, degree of family collaboration. - Psycho-sociological factors: attitudes, practical competency of the caregivers
<p>Mesosystemic Factors 1. School 2. Medical and Social Services (accessible) 3. Neighborhood life</p>	<ol style="list-style-type: none"> 1. School <ul style="list-style-type: none"> - Structural factors: locale, milieu, homogeneity, programs, social services, family/school collaboration, training and stability of the teaching staff, management and supervision, integration - Psychological factors: attitudes, pedagogical practices of teachers, self-motivation, competencies 2. Social and Medical Services <ul style="list-style-type: none"> - structural factors: locale, accessibility, equipment, services, collaboration with the family - Psycho-sociological factors: availability, competency, attitudes, preconceptions, methods of intervention 3. Environment (neighborhood, area, recreational activities) <ul style="list-style-type: none"> - Homogeneity, equipment, accessibility, population, density, social activities
<p>Exosystemic Factors Institutions Organizations Associations</p>	<ul style="list-style-type: none"> - National and regional health, education and social services institutions and organizations - Coordination of institutions and organizations - Consultation among institutions and organizations - Government grants to institutions and organizations - Stability of government funding - Subsidies to research organizations - Infrastructure and services adapted for infants, at-risk children, and ethnic minorities in difficulty - Implementation of integration and mainstreaming of PIA and PSI - Evaluation of services - Quality of health and education programs - Quality of training and specialization programs - Community organizations and associations
<p>Macrorosystemic Factors Values Laws Politics</p>	<ul style="list-style-type: none"> - Nondiscrimination, integration of minorities, normalization - Eradication of poverty, illiteracy - Prevention, (physical, mental) - Equality of opportunity - Universal rights to education and health care - Family oriented policies in health and social services ● Government financial assistance in health, education and social services

We note that these categories are all relative. In fact, on the one hand, the probability that one risk factor or one protective factor would have an effect on the child's ability to adapt is low. Adaptation is affected by an accumulation of factors and interactions that we will elucidate further on in this chapter. On the other hand, the distinction between inherent individual factors and environmental factors is equally debatable. Thus, inherent individual factors, even prenatal ones, are equally subject to the environment. Research has highlighted the effects of an unfavorable socio-economic environment on the fetus: less medical care, absence of preventive health care, poor diet and inadequate health habits. The mother acts as the mediator between the child she carries and the environment generates risk factors even for the unborn child.

In addition, certain risk or protective factors and environmental variables can be considered as being part of the micro- or meso system. Their classification in one or the other levels of the child's environment is therefore often relative. For example, attending a daycare centre can be considered a factor belonging either to the micro or macro or meso system. Moreover, daily attendance, eight or nine hours a day in a family-style care-giving situation corresponds to a second micro system for the child. Inversely, structured daycare attendance two-half days a week could be considered as part of the mesosystem.

Risk factors and protective factors have been identified in several research studies on the young child (birth to six years) within the family structure by various disciplines using a variety of approaches (experimental clinical studies, qualitative, quantitative, transversal and longitudinal). Moreover, these factors are not immutable, because a protective factor can become a risk factor depending on the age of the child and the evolution of the context. Thus, vigilant surveillance of the infant, a protective factor can become a risk at 4-5 years, (overprotection).

It should be stressed that there exists a cumulative effect for risk factors as with protective factors. The existence of a single risk factor in a child or his/her environment does not necessarily lead to the conclusion that future risk of difficulties will be higher; no more than one protective factor can explain a child's future resiliency. Rutter (1985) mentions the simultaneous presence of two risk factors multiplies by four the possibility that there will be socio-affective difficulties in a child and that this possibility increases considerably with the number of risk factors.

Werner and Smith (1989) also demonstrated from a sample of 698 children followed over a longitudinal study, that children showing the most difficulties at age ten were those who had been identified as having at least four risk factors at age two. The accumulation of these factors incites a high stress level in an individual. Referring to Lazarus and Folkman (1984), we define stress as a state of tension resulting from negative interactions between the child and his environment. S/he is confronted with adverse situations that his/her personal resources do not enable him/her to control, and which therefore become threatening. Seeking to reestablish the equilibrium with the environment, the child may become aggressive, adopting inadequate coping strategies which translate into inappropriate behaviour. However, if mobilization of personal and environmental

resources enables the child to develop adequate coping strategies that meet with success, we can speak of resilience.

III. Resilience and Its Construct

The appearance of the concept of resilience is relatively recent in social sciences (Anthony, 1974; Garmezy, 1981; Masten and Garmezy, 1985; Rutter, 1985). This term first appeared in the 17th century within the study of physics where it was used to characterize the capacities of resistance to shock. "Resilience indicates up to what point energy can be stored by an object under the effect of elastic deformation." (Le Grand Robert de la Langue Française, 1986, p.302).

Use of the concept of resilience spread rapidly throughout the sciences and into applied sciences where its definition was not characterized by stability. Although the definition remained similar to the original in mechanical physics and chemistry, (Massen, 1999) other disciplines such as biology, geology, physical geography, environmental sciences, physical, electronic and computer engineering, use a definition of the construct of resilience that is close to those used in social sciences. Here resilience is characterized as essentially the ability a living organism (biology, biochemistry), a particle (physics) or a molecule (chemistry) has to modify its structure and adapt to an environmental stress (Meesters, Bak, Westmacott, Ridgely and Dollar, 1998). This aptitude is determined by an ensemble of characteristics inherent to the structure of the particular particle or organism.

In social sciences, the definitions of resilience are less precise as they depend in large part on the epistemological model and the context in which it is studied. Initially, (Anthony 1974) resilience was assimilated into an invulnerability to stresses caused by the environment. However the concept of invulnerability implies an immutable state resulting from personal characteristics (physical and psychological) of the individual having been subjected to stressful events in an ecosystem. It refers to an essential dimension of resistance or tolerance instead of plasticity or adaptability. It attributes only the dimension of plasticity or adaptability. It is a concept of resilience as a "state" that is very similar to the definition prevailing in physical and chemical sciences.

An individual's interactions are established in a continually changing ecosystem and because of these interactions, the individual makes self changes and acquires new ways to be and act. Thus, resistance to stress can be connected not to the individual but to environmental factors varying in time and space. In social science, resilience cannot easily be assimilated with invulnerability since it is not immutable but relative and implies a developmental process. Resilience is therefore a multidimensional and multi-referenced construct that like Masten, Best and Garmzy (1990) we are defining as "the capacity to attain or the attainment of a functional adaptation in spite of adverse or threatening circumstances".

The construct of resilience, like all hypothetical constructs, has no meaning until it is contextualized. Recent research (Hawley and DeHaan, 1996; Wolff, 1995) puts the

emphasis on the adaptive and evolutive process of resilience: an individual is not born "resilient", s/he becomes resilient to something. It is necessary for the child to be exposed to a certain number of "risk factors" and to conditions considered "adverse" so that s/he may develop a capacity or aptitude for employing coping techniques. (Howard, 1996; Knutson, 1995; Kolbo) This idea is developed in scientific literature as a cognitivist counterpart to the theoretical approach to risk as perceived from the behavioral perspective of Garmezy and Masten (1994). From this perspective, exposure to one or several risk factors can be used to determine the probability of the development of attitudes or pathological behaviour and to consequently develop preventive strategies. (Coleman, 1992) In the cognitivist approach it is the identification of the dynamics of exposure and reaction to interactions between a number (large or small) of risk factors that allows the dynamics of resistance in an individual to be revealed; information that can eventually be used in preventive measures. (Brown, Harris and Bifulco, 1986).

In a socio-constructivist epistemological position (Vygotsky, 1978), the development of a resilient attitude (or the manifestation of behaviour in a child showing the existence of protective factors) results in specific learned behaviour that s/he would have acquired within the context of social interactions and inasmuch as s/he would have been exposed concomitantly to a certain number of risk factors as well as to models or experiences that counter behavior that pathological environments manifest as a norm. The concept of resilience thus implies taking into consideration normative factors to outline a probability of adaptive behavior judged socially inappropriate and in parallel, these protective factors define a probability of socially appropriate behavior. Resilience is therefore the result of an individual experiential process anchored in social experience and nourished by the interaction between the child and the environment.

To summarize, the study of resilience in the young child is complex; it implies taking into account the factors of risk and of protection that apply to a subject as well as the many levels of the exosystem which evolve over time (except genetic factors) depending on the context. It is this complexity that is set out in Weddel's (1999) model for compensatory interaction. There is no consensus among researchers about the permanence of the effects of protective factors on risk factors. Some, like Werner (1989) reckon they have an effect on the general adaptation of the child. Others such as Rae-Grant, Thomas, Offord and Boyle (1998) think they have no influence when there are no risk factors. Garmezy and Tellegen (1984), Garmezy, Masten and Tellegen (1984) and Masten (1989) distinguish three theoretical models that facilitate comprehension and the study of resilience and take into account the whole of the interactions between the child and the environment and his/her risk factors and protective factors: the "compensatory model", the "protective model", and the "challenge model".

In the "compensatory model", resilience of the child is explained by the fact that personal characteristics or family characteristics allow him to compensate for adverse situations in his environment. The protective factor overrides the risk factor but does not interact with it. For example, a child who feels competent, and has a perception of efficacy and control while growing up, can resist disparaging attitudes and habits of an adult (Catterall, 1998).

Within the "protective model", there is interaction among the risk factors and protective factors and it is this interaction and not the factors themselves that has an effect on adaptation. For example, confronted with adverse situations, the child cited in the preceding example can mobilise his personal resources and also look for support from parents or other adults.

In the "challenge model", the presence of risk factors creates stress considered as positive, and which leads to the development of skills in the child that have favourable effect on adaptation (only if the level of stress is not intolerable, for this would have the adverse effect). These acquired skills can then be employed in future situations.

For our part, we use a combination of the last two models suggested by Masten (1989). As mentioned previously any one protective factor cannot override any one opposing risk factor, and the child cannot become resilient if s/he is not exposed to risk factors and adverse situations that can put into motion his/her personal resources in a coping process towards attainment a new equilibrium. "In the process of resilience, the individual develops protective mechanisms that reduce the incidence of risk by exercising an effect on the risk itself or by modifying the fact of being exposed or exposing oneself to risk. These mechanisms reduce the probability that a negative chain reaction will be set off by the encounter with risk. They reinforce self esteem and personal efficiency through the intermediary of a good personal safety-net of support or from successful accomplishment of tasks" write Tap and Vinay (soon to be published).

IV. Resilience in Young Children: Recent Research

The *Conseil québécois de la recherche sociale* (The Quebec Council on Social Research) (CQRS) has subsidized several studies on the subject of resilience since 1990. Among them, we should mention those conducted by the Groupe de recherche en adaptation scolaire et sociale (Research Group on Social and Educational Adaptation) (GREASS) from the Université de Québec à Montréal. These studies have identified certain risk and protective factors in families. There is also the study conducted with 40 mothers from Quebec with children between the ages of four and six years (Palacio-Quintin and Terrisse, 1997) that showed there are statistically significant correlations between the types of maternal stimulation as measured by the revised *HOME-préscolaire* scale (Palaccio-Quintin, and Lavoie, 1989) and the developmental domains (cognitive, linguistic, psychomotor, socio-affective) as measured by the *Inventaire de développement et de maturité préscolaire* (Preschool Developmental and Maturity Inventory) (IDMP); irregardless of the socio-economic level of the family. (Terrisse and Dansereau, 1996). The educational practices of the parents [with their children] give a better prediction of the child's performance than the socioeconomic status of the family (Terrisse, Roberts, Palacio-Quintin and MacDonald, 1998). The educational practices of mothers seem to constitute a protective factor favoring resilience among young at-risk children.

This research also shows there exists significant differences in the educational role of parents according to their gender and that of their child: fathers have a larger control on the

social and psychomotor development of their children than mothers. Mothers have greater control in the cognitive and language domain; but this is only confirmed in the middle and upper socioeconomic classes where these factors are associated with beliefs and social values. This demonstrates clearly the complexity of interrelations among risk factors and protective factors that could be the origins of resilience.

In another study (Terrisse, Trottier and Chevaril, 1994) conducted with 240 immigrant (Latin-American) and **Québécois** families, we demonstrated that cognitive development and social adaptation of the young child, as well as parental values; attitudes and educational practices were more greatly influenced by the socioeconomic status of the parents than by ethnocultural identity (Aumais, 1996; Trottier, 1998; Vergara, 1998).

Finally, within the framework of very recent research (Terrisse, Lefebvre and Larose, 2000) a study was conducted with 1200 students who had benefited from early intervention for at-risk children. The authors conducted a study on resilience with a sub-group of 134 children; made up of resilient achievers and under-achievers. The study took into account family environment, (138 parents) and educational environment (40 teachers). Results suggest that it is essentially variables connected to the mother (education), associated with the existence of positive interactions between parents and children, a sense of internal control of the parents as well as parental child-rearing attitudes imprinting confidence, rather than socioeconomic variables that can predict academic success of resilient children.

While these projects were conducted, researchers of the GREASS designed and validated several instruments in Quebec that can be used to evaluate risk and protective factors in children and their ecosystems (particularly the family) thus identifying conditions leading to vulnerability or the reverse.

Some of these instruments such as the *IDMP*, (Terrisse and Dansereau, 1996) evaluate the individual characteristics of the young child (2-6 years) within the following developmental areas: cognitive, linguistic, psychomotor and socio-affective. Others allow identification of risk and protective factors at the microsystemic level. The *Questionnaire sur l'environnement familial (Questionnaire on Family Environment) (QEF)* (Terrisse, Larose and Lefebvre, 1998) identifies 23 family related socioeconomic and socio-cultural variables regrouped into 12 factors linked to forecasting coping abilities or maladapted behavior which produce either resilience or vulnerability.

- parental educational level
- family status (matrimonial structure)
- profession
- stability of employment of one or both parents
- country of origin and language spoken
- adherence to religious beliefs and practices
- number of children
- number of people in the home

- mobility
- family situation
- social safety-net and support network
- recreational activities

Another instrument, the *Échelle des compétences éducatives parentales*, (*Parental Child-Rearing Competency Scale*) (*ECEP*) (Terrisse and Larose, 1998) evaluates the attitudes, the practices and perceptions of parental control of parents of young children (birth to 9 years), while the *Grille d'observation des pratiques éducatives maternelles*, (*Observation Framework for Maternal Teaching Practices*) (*GOPEM*) is used for analyzing verbal and non-verbal mother-child communication. The *Questionnaire sur les représentations parentales de la scolarisation* (*Parental Attitudes Towards Education Questionnaire*) (*QRPS*) gages the attitudes of parents towards schools, teachers, their position on education as a means of social mobility as well as family-school collaboration and academic support at home.

Finally, the following instruments developed by the GREASS deal with factors at the mesosystemic level and relate teacher intervention with the young child: the *Échelle des modèles éducatifs au préscolaire* (*Scale of Pre-School Education Models*) (*EMEP*), *Échelle des pratiques éducatives au préscolaire* (*Scale of Educational Practices at the Pre-School Level*) (*EPEP*) and the *Questionnaire sur la formation professionnelle des enseignant(e)s* (*Questionnaire on Teachers Professional Training*) (*QFPE*). Although not an exhaustive list, all of these instruments allow identification of a number of risk and protective factors and allow then a greater understanding of vulnerability or resilience in young children.

Conclusion

The study of the concepts of resilience and the resilient child also involve the study of factors of risk and protection since resilience is the product of interactions between the two. The study lies at the intersection of the following two epistemological paths:

- Developmental psychopathology which studies the normal and pathological ontogenetic processes and postulates that one factor associated with a child during development can produce different results according to his/her individual characteristics and those of the environment. (Zigler and Glick, 1986).
- The ecosystemic approach which studies interactions between the child and his/her ecosystem where s/he has created a "developmental niche" (Super and Harkness, 1986). The ecosystemic approach takes into account the different environments of the child while studying normal and pathological development. (Belsky 1984; Bronfenbrenner, 1979, 1989).

Because of the complexity and multiplicity of factors to be taken into account, any study of resilience must be multidisciplinary (psychology, sociology, anthropology, education,

neurology, genetic). Review of research on the subject clearly shows that longitudinal studies are most effective at showing the long term combined effects of the interaction of risk and protective factors. In our opinion, the ideal studies would be able to follow large groups of children from birth. But this does pose technical problems (recruitment of participants, mortality rates within the sample, long term stability of the researching teams...). In any case, the study of the resilient child is a necessary prerequisite to establishing preventive intervention strategies for the "vulnerable" young child and his/her family particularly among those groups at the weaker levels of the socioeconomic ladder.

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