INTERVENTION STRATEGIES FOR CHILDREN AND ADOLESCENT WITH DISORDERS: FROM INTRAPSYCHIC TO TRANSACTIONAL PERSPECTIVE

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Introduction

A large amount of studies and clinical evidence document the importance of infancy and early childhood influences on long term developmental trajectories toward mental health or psychopathology (Sameroff, 2000, 2010). Without healthy, productive adults no culture could continue to be successful. This concern is the main motivation for society to support child development research. Although the academic interests of contemporary developmental researchers range widely in cognitive and social-emotional domains, the political justification for supporting such studies is that they will lead to the understanding and ultimate prevention of behavioural problems that are costly to society. With these motivations and support, there have been major advances in our understanding of the intellectual, emotional, and social behaviour of children, adolescents and adults.

This progress has forced conceptual reorientations from a unidirectional understanding of development (e.g., parents affect children and not vice

versa) toward a bidirectional conceptualization of development. Children are now assumed to affect and even select their environments as much as their environments affect their behaviour. Indeed, key among many of the most influential developmental theories in the past several decades is the assumption that children have bidirectional, or reciprocal, relationships with their environments (Bandura, 1977; Bronfenbrenner, 1979).

To date, it is widely accepted that children's healthy development is shaped by complex transactional processes among a variety of risk and protective factors, with cumulative risk factors increasing the prediction of emotional and behavioural problems (Anda et al., 2007; Rutter & Sroufe, 2000; Sameroff, 2000). Risk and protective factors include individual child characteristics such as genetic and constitutional propensities and cognitive strengths and vulnerabilities; parent characteristics such as mental health, education level, sense of efficacy, and resourcefulness; family factors such as quality of the parent-child relationship, emotional climate, and marital quality; community connectedness factors such as parental social support, social resources, and children's peer relationships; and neighbourhood factors such as availability of resources, adequacy of housing, and levels of crime and violence (Sameroff & Fiese, 2000). The predictive value of these factors across many studies led to the development of transactional-bioecological models that attempt to conceptualize the relative contributions of proximal and distal risk and protective factors to children's developmental outcome (Bronfenbrenner & Morris, 2006).

In 1975, Sameroff and Chandler proposed the transactional model. This theoretical framework has become central to understanding the interplay between nature and nurture in explaining the development of positive and negative outcomes for children. The transactional model is a model of qualitative change. Sameroff asserted that the transactional model con-

erned qualitative rather than incremental change and that the underlying process was dialectical rather mechanistic in nature.

The aim of this chapter is to explore this theoretical framework and its intervention strategies.

In the first part, the transactional model will be described after a brief summary that will illustrate the transition from intrapsychic to transactional perspective.

In the second part, intervention strategies for children and adolescent will be described. The attention of research on environmental risk and protective factors has fostered a more comprehensive understanding of what is necessary to improve the cognitive and social-emotional welfare of children and adolescents.

Evolution of developmental models: from the intrapsychic to the transactional perspective

The wide philosophical debate between nature and nurture in the history of Western thought, early psychoanalytic constructs, has come down to discussion between those who sustain the theory of trauma and those who sustain the theory of fantasy as the cause of the psychological disease. In other words, is the psychological disease the result of a healthy development diverted by real disruptive experiences (nurture)? Or is it the result of a mistaken interpretation of early experiences due to the influence of the early infant's fantasies (nature)?

Freud's theory on seduction (1896) underlined the causal influence of nurture: the psychological diseases are the direct consequence of experiences which cannot be elaborated. Afterwards Freud (1905), in his theory on infantile sexuality, shifted the focus from nurture to nature: the psycho-

logical diseases are the distortion of the internal world; it is human sexuality itself which is problematic, generating inevitable and universal conflicts. According to Freud, every individual is designed as a mass of physical asocial forces, represented in the mind as aggressive and sexual desires struggling to come out. The individual suffers the contrast between these desires and more superficial secondary needs that come from social reality (necessary to the adaptation to social life). Also, the thought derives from the transformation of these primal energies. The mind, thus, is shaped by complex compromises between the expression of the drives and the defenses controlling and channeling them.

In the early decades of psychoanalysis this concept, which accentuates the inevitably conflicted nature of the drive, has dominated the development of the theory itself.

The evolution of the psychoanalytic perspective in the following decades, which was contemporary to cultural, social, scientific changes, and was solicited by the emergence of new clinical populations, created various relational models with the opposite focus, that is stressing again the influence of the nurture: the theory of the object relations[1] (Fairbairn, Guntrip, Winnicott), the ego psychology (Hartmann, Spitz, Jacobson, Mahler) and the self psychology (Kohut). These models, although different from each other, focus on the origin of psychological diseases as related to the parents: the child is not traumatized by a sexual event but by the incapabil-

[1] M. Klein differs, from other authors, about origins of psychological disease because she focuses mainly on the relationship between innate drives and maternal communication. At the end of her work, however, she felt forced to admit that a temperamental component of envy, attacking the good object (related to the maternal capacity to soothe the rage of the infant), and not treatable by psychoanalysis, should have been considered as a crucial factor for psychopathology.

ity of the parents to satisfy the psychological needs of the developing child. As a consequence, the child is diverted from his/her own project to become a person and his/her attention is prematurely deviated towards the survival, towards the parents'needs, the adaptation to the external world which can cause distortions of the Self. Another fact that characterizes the traditional perspective in developmental psychology, in addition to the debate nurture vs nature, is the focus on the continuity of development within the life span. Psychological growth is described as a systematic progression through different phases, common to each individual, which come one after the other. Each phase approaches the child to his/her maturity (Mitchell & Black, 1996). From this developmental point of view, the psychological disturbances are seen as fixations on, or regressions to previous phases. These conceptualizations on psychological disturbances are supported by a methodology that integrates narratives on childhood experiences and observational data (psychoanalysis of children).

A radical change in the way of considering the processes related to the development of mind, as well as to the nature-nurture debate, happened around the 70s thanks to the trend of *infant research* and to Bowlby's attachment theory. Several studies, starting from Bowlby's attachment theory (1969; 1973; 1980; 1988) have shown the importance of that relationship in structuring first the child's, then the adult's ability to adapt to the environment. Bowlby's theory of attachment has strongly contributed to the reconsideration of the clinical approach to psychopathology, as well as to the adaptation processes, giving more attention to the interpersonal relationships rather than the mere internal defenses. These contributions on one side modified the vision of the child, and on the other side they changed the conceptualization of the role of environment and real experiences on the individual development. This area of study has been particu-

larly significant from a heuristic point of view, since it produced fields of research having important clinical implications (Sameroff & Emde, 1989). An example of this approach is reflected in the patterns that link attachment model, evolution of the reflective function and life environment (Fonagy & Target, 2003). In a lifetime perspective, the Developmental Psychology has given particular attention to the identification of relationships between the evolutionary dynamics of representational systems and the potential risk/ protection factors, in order to identify the existing individual resources and those that can be activated for better adaptation to the environment.

The *infant research* began to support a bi-directional vision about the parent-child relationship, underlining the presence of a system formed by two subjects, each capable of self-organization and self-regulation, forming the dyad parent-child as an interactive field with a peculiar organization.

Importantly, within the *infant research*, for a long time the studies on self-regulation and those on interactive regulation were mutually excluding, although, actually, self-regulation and interactive regulation are mutual and simultaneous processes, in other words one process influences the effectiveness of the other (Gianino & Tronick 1988). An interesting model is the systemic one elaborated by Sander (1987), which chooses the concept of process rather than structure. The subjective perception of the child to be an acting subject depends on the self-regulation process, which needs the condition that also regulation with the others favours the self regulation. In Sander's systemic perspective the internal processes and the interactive processes are not considered separately, rather their interdependence is underlined as well as their capacity to "jointly build" the interpersonal realities. Stern's contribution can be placed in this scenario (1985,

1995): the Author, since the end of 70s, began to argue the genetic perspective of development as it can be pieced together from the psychoanalytic experience of the psychopathological states of the adult. The child emerging from Stern's studies is an active child, involved in searching stimuli and capable of regulating their excess or lack thereof, due to the maternal contribution, in order to reach optimal levels of stimulation. Besides, since birth the newborn can experience an emerging process of an internal organization due to his/her ability to link isolated experiences. This predisposition to social interaction, which characterizes the early newborn's development, and the possibility to experiment the emerging of a cohesive Self leads Stern to affirm that an undifferentiated state does not exist at all, nor does a confusion between the Self and the Other, neither in the first months of life.

In this model of continuous construction of development, the importance of the transactions between the individual and the developmental context is particularly underlined. Therefore, it becomes clearer that the child is a part of an interactive system which spreads in time, keeping an intrinsic continuity. The continuity is therefore conceived as an outcome of the dynamic and interactive process which lasts during allover the development between individual and environment. Moreover, it is a necessary prerequisite of the overall coherence of the sense of Self and of the relational models of the individual.

From this point of view, psychological disturbances are seen as the consequences of a developmental path regulated by the principles of

equifinality and multifinality[2] in which risk and protective factors both play a key role.

During the last decades the debate "nature vs nurture" has become more complex. The research has been moving from the systematic study of the mother-child relationship toward the systematic study of the wider networks of relationships, recognizing its relevance for the emotional and social development of the child (Sameroff & Fiese, 2000).

Differences between individuals may originate from the genetics as well as from inherited neurobiological characteristics. Although such differences between individuals can be rapidly identified, their predictive power is limited. For example, studies on premature children highlighted that the more predictive indexes are the family-related ones, such as social conditions (Sameroff, 1993). The parent-child relationship is the more remarkable aspect in child development. Plenty of studies documented the relevance of mother-child relationship in the child development. Positive qualities of mother-child relationship have been associated to an optimal social, emotional and cognitive development (Crockenberg & Leerkes, 2000). Mother-child relationship moderate intrinsic risk factors (McCarton et al., 1997): for example, premature children's complications are mitigated by a protective family environment. Studies on developmental psychopathology underlined the specificity of the relational variable's role: children can communicate in different ways with different caregivers (Steele et al., 1996), for example expressing symptoms within a certain relationship but not within another (Zeanah & Smyke, 2002). For this very reason,

[2] *Equifinality* refers to the belief that systems may start at the same beginning, but may end with different outcomes. *Multifinality* is the same principle in reverse: systems can start with divergent beginnings and end with the same outcomes (Watzalawick et al., 1967).

mental health in infant research is becoming more and more based on a relational approach: children are better assessed and treated within the relationships in primary care. Nevertheless, it is necessary to evaluate the quality of the different dyadic relationships within the family: marital relationship affects infant development, and conflicts represent risk factors more than the divorce itself (Kelly, 2000).

The complexity of family is certainly a challenge for research, since any child has a specific relation with a specific member of the family, and any relation is affected by other relations.

Furthermore, inter-generational relationships influence child development: concordances between attachment styles of grandmothers, mothers and nieces have been found (Benoit & Parker, 1994). According to the transactional model (Sameroff & Chandler, 1975; Sameroff & Fiese, 2000), development is deeply environmental due to the bi-directional phenomena between the child and his/her experience, but also between genes and environment. Beyond genes, individual development starts within a relational matrix. The transactional model underlines not only the effects of the environment on the child development, but also the effects of the child on his/her environment. Environmental influences on the child cannot be thought as independent of the child.

To date, the theories of development are various and heterogeneous; they differ one from another for several meaningful aspects, but all of them concur in affirming that the individual is included in a relational matrix with other persons, struggling to maintain his/her bonds with the others and to differentiate from the others.

From this perspective the unit of analysis is not the individual as a separate entity, with desires conflicting with the external reality, but a field of

interaction where the individual struggles to establish bonds and to express him/herself.

Fonagy (2003) however affirms that nowadays the developmental psychopathology seems to be characterized by the dichotomy nature-nurture. On one side, the pure innatists, molecular geneticists and behavioral geneticists seem to dismiss the question through searching for proteins and genes explaining the pathological development of the brain. On the other side, the pure environmentalists continue to pursue their aim to identify the key processes of the socialization which caused the psychopathological development but neglecting the formers' work.

It seems obvious that the interpretative models of the developmental age are changed, and that it determined not only the individuation of a new clinical population, i.e. children and adolescents with psychopathology, but also the strongest necessity for a synergy between the different branches of the knowledge.

In this scenario, consider Sameroff's transactional model: more than a developmental model conceived as the spread of intrinsic preformed characteristics of the child, which interact epigenetically, and more than the environmental model of discontinuity where each phase is determined by the current context, that is a passive individual affected by an active environment, in the transactional perspective the development is conceived as an outcome of the continuous dynamic interaction between the child and the experience provided to him/her by the family and the general social context (Sameroff & Chandler, 1975; Sameroff & Emde, 1989).

Planning effective interventions requires a sophisticated perspective including the focus on several factors. The transactional model can represent a useful framework.

The transactional model

In *The Transactional Model of Development* (2009) Sameroff summarizes this theoretical framework that was introduced for the first time together with Chandler in 1975.

In this model, developmental outcomes are neither a function of the individual alone nor of the experiential context alone.

Advances in molecular biology has led to the need to study diverse systems that interact among them, with the common objective of understanding developmental processes. The journey from fertilized egg to being a neonate is one of the most complex phenomena studied in biology. The erroneous assumption that the perinatal brain is composed of rigid and deterministic genetic programming has long been replaced by the knowledge that experience plays a critical role in the brain development of children. Neuronal plasticity has also been observed in adults. For instance, positive life or negative life experiences can alter both the structure and the functionality of the brain (Nelson & Bloom, 1997). This strict relationship between the developing organism and experience can also be seen behavioural settings in which the transactional model is used to understand the social and cognitive functioning in the developmental age. In this model, the development of the child is a product of the continuous dynamic interactions of the child and the experience provided by his or her social settings.

The transactional models also look at *proximal influences* and *distal influences*. *Proximal influences* are the factors that influence the child closely. Interactions with the parent and family are examples for proximal influences. *Distal influences* are those affecting the child less directly, for example, the family income and the type of community. Infants and young children spend more time with their parents and caregivers; this is why

they are more dependent on their *proximal influences*. Older children would tend to be more influenced from distal factors including their school and community.

At the same time, distal factors do impact parents/caregivers in ways that may affect their ability to provide for their child. Sometimes negative factors, such as family unemployment, may result in additional risks to the development of a child. Risks are not measured one by one, in terms of how negative the outcomes could be, but in their combined effect on a child's development.

What is core to the transactional model is the analytic emphasis placed on the bidirectional, interdependent effects of the child and environment. The child may have been a strong determinant of current experiences, but developmental outcomes cannot be systematically described without an analysis of the effects of the environment on the child. The child's outcome is neither a function of the initial state of the child nor the initial state of the environment but is a complex function of the interplay between child and environment over time. For example, a complicated childbirth could have turned a mother who is generally calm, into an anxious one. The mother's anxiety during the first months of the child's life may have caused dysfunctional interactions with her child. In response to these interactions, the infant may have developed some irregularities in feeding and sleeping patterns that give the appearance of a difficult temperament. This difficulty decreases the pleasure that the mother obtains from the infant, so she tends to spend less time with her child.

If the mother and/or the others caregivers are not actively interacting with the child, and especially speaking to the child, the child might develop language difficulties.

The transactional model, therefore, considers development as a system regulated by both the internal and external aspects. Internally, biological development is regulated by the genotype that provides the base for behavioral organization. Externally, an environtype embodies the evolutive tasks of society, by the family and parental figures. It gives form, direction and organization to the personality of the child. The continuity and interruptions in the development are therefore a combination of three subsystems: the *genotype* (biological regulatory and organizational systems), the *fenotype* (the effect of the interactions between genotype and envirotype on the individual level), and the *environtype* (family and cultural codes that regulate the developmental opportunities of the individual).

These subsystems not only transact with the child but also transact with one another. Developmental regulations at each of these levels are carried within codes: the cultural code, the family code, and the individual parental code. These codes regulate cognitive and social-emotional development of the child and are hierarchically related in their evolution and in their current influence on the child.

The experience of the developing child is partially determined by the beliefs, values, and personality of the parents; partially by the family's interaction patterns and transgenerational history; and partially by the socialization beliefs, controls, and supports of the culture. However, there is a distinction between codes and behaviours. The code must be actualized through behaviour. The codes have an organizational and regulatory influence on parent behaviour, but the behaviour is not the same as the codes.

Many studies on the effects of the environment have been limited to the study of mother-infant interaction patterns, which is only one component of the environtype. Another component is parental belief systems.

These beliefs include parent understanding of child behaviour, the sources of developmental change and child-rearing values (Sigel et al., 1992).

So, the child's behaviour is a product of the transactions between the phenotype (i.e., the child) , the environtype (i.e., the source of external experience) and the genotype (i.e., the source of biological organisation).

As previously mentioned, developmental regulations at each of these levels are carried within codes: the cultural code, the family code, and the individual parental code**.**

Codes

Cultural code

The components of the cultural code are the complex characteristics that organise a society's child-rearing system and that incorporate elements of socialization and education. Today, the extensive literature (Erdman & Ng, 2010) demonstrates how single cultures promote different parental modalities aimed at favouring specific development in a given environment. In this way, the culture guides caregiving behaviours which in turn guarantee a relative uniformity when it comes to parental care. These unifying forces would operate through parental beliefs and behaviours called ethno-theories, in which cultures either implicitly or explicitly impart caregiving models to their members. For instance, when and how to take care of children, which characteristics of a child are desirable and which parenting practices are expected and accepted.

Bornstein (2009) underlines how parents coming from different cultural backgrounds have different ideas on the age in which they expect their children to develop or acquire competence. They also differ in opinion regarding the importance of specific adaptive capabilities. If a given behaviour is viewed as culturally desirable or acceptable, then parents (and

significant others) will encourage its development; if the behaviour is perceived as culturally maladaptive or abnormal, then parents (and significant others) will discourage its development. There are multiple and distinctive pathways for socializing children to become competent adults, and optimal development is largely defined by the cultural system of definition. For example, American mothers encourage their infants' attention to properties, objects, and events in the environment and stress functional exploratory play with their toddlers. By contrast, Japanese mothers tend to see their children as an extension of themselves and work with their children to consolidate and strengthen a mutual dependence between mother and child (*amae*). Japanese mothers encourage their infants' participation in social interactions and stress symbolic representational play with their toddlers. These interactions reflect different form-different function relations: different kinds of interactions predict, and are shaped by, individualist versus collectivist cultural tendencies.

As Leiderman underlined (1989) the consideration of cultural variability is of particular importance in preventing false attributions of dysfunction in relational behavior that are maybe typical in a culture and less so in another.

Family code

The family code regulates child development through combinations of factors that extend across generations. The family code is a cause and a consequence of what families do on a regular basis and how family values and beliefs are directly imparted to children.

The influence of the families comes in two ways in which experiences are organized. The first refers to the beliefs acquired through time, called the *represented family*; while the second refers to the ways in which the family members behave towards each other, called the *practicing family.* It

is possible to examine family stories as part of the *represented family* and family rituals as part of the *practicing family*. Family stories and rituals are integrated into the developmental demands of raising young children and reflect transactional processes over time. Family stories deal with how the family makes sense of its world, expresses rules of interaction, and creates beliefs about relationships. Family stories may be examined by their thematic content on the one hand and by the process of story - telling itself on the other. Family stories about one's own childhood may aid in integrating generational factors with the current demands of parenting. In addition, these themes are sensitive to the developmental life cycle of the family (Reiss, 1989).

Parents may use stories as a means to highlight expected developmental tasks of family members. During the early stages of parenting, mothers and fathers both tell stories of an affiliative nature, focusing on the needs of others and being close. Consistent with the demands of raising an infant, parents recall experiences that incorporate themes of belonging. However, when the oldest child is of preschool age and is gaining a sense of autonomy, parents' stories begin to include themes of personal success and achievement, perhaps preparing the child for roles as a student and achiever. In addition to the thematic content of family stories, the relative coherence of family narratives may impart to children that the world can be understood and mastered (Sameroff & Fiese, 2000).

Family rituals are powerful organizers of family life and are associated with both the practicing and represented aspect of the family code. During the childrearing years, creating and maintaining rituals on a daily basis are an integral part of family life. The organized experience of the family in its daily practices is sensitive to developmental changes in the family and may aid in the preservation of close relationships during periods of transi-

tion. Many studies (Bush & Pargament, 1997; Fiese et al., 2006) suggest that the stability of family rituals as well as the meaning associated with family practices is related to family adaptation.

From a transactional perspective, both the practicing and the represented family code behaviour affect each another through time. Family practices come to have meaning over time and become translated into the symbolic aspect of the represented family. The represented family, in turn, may affect how the family regulates and interprets its practices.

Individual parental code

There is clear evidence that parental behaviour is influenced by the family context. The contribution of parents has much more complex origins than that of young children, given the multiple levels that organize their behaviour. Main and Goldwyn (1984) have identified adult attachment categories that reflect parents' encoding of their interpretation of their attachment to their own parents. What is compelling about these adult attachment categories is that they may operate across generations and may be predictive of the attachment categories of the infant. Through intergenerational transmission, by interlocked genetic and experiential pathways, purposefully or unintentionally, one generation may also influence the parenting beliefs and behaviour of the next (Cassibba et al., 2012). Fraiberg and her colleagues (1975) famously referred to these influences as "ghosts in the nursery". A parent's experiences with his or her own parents have continuing effects on his or her own parenting.

Regulations

The description of the contexts of development is a necessary to the understanding of developmental problems and to the eventual design of intervention programs. Evolutional changes of the individual-context rela-

tionship are due to the continued change in balance between self-regulation and external regulation. At birth the infant could not survive without the environment providing nutrition and warmth. The balance between self and external regulation shifts in the moment in which the child becomes increasingly independent.

In order to enhance the child's socio-emotional auto-regulation, parents provide him/her with a model that helps the child calm down when he/she is over-excited, and to stimulate him/her when inactive. Later, the child learns to auto-regulate until he/she becomes an adult able to take part into the auto-regulation of a child, starting up the next generation.

The parents themselves are regulated by cultural aspects and relationships in which they are involved. The child's attention is focused on parents during the first steps of development, according to the great asymmetry between auto-regulation and hetero-regulation. With developmental progress, asymmetry reaches a balance, and a new asymmetry will occur during adolescence, with the emergence of adult thoughts and actions.

To complete the picture of the developmental system, Sameroff & Fiese (1990) have divided developmental regulations into three categories: *macroregulations*, *miniregulations* and *microregulations*. These regulations are organized at different levels of the environtype.

Macroregulations are the modal form of regulation within the cultural code. Macroregulations are predominantly purposive major changes in experience that continue for long periods of time such as weaning or entry into school.

Miniregulations are the modal form of regulation within the family code. Miniregulations are predominantly caregiving activities that occur on a daily basis and include dressing, feeding, or disciplining.

Microregulations come into play at the individual level. Microregulations are automatic patterns of momentary interactions. Examples include atonement on the positive side or coercion on the negative.

In this framework, some factors increase or reduce risks of developmental distortions and psychopathology, of negative transational processes and consequent difficulties in correcting the developmental process.

Risk factors are characteristics that increase the risk status of an individual or a group. This way, preterm newborns or children of depressed mothers, or children raised in institutions are considered at risk with regard to development.

However, in the majority of cases, risk factors are complex and interact among them, and it is not possible to identify a direct causal link between risk factors and specific phenomena. In this regard the term "multifinality" is used when a single factor, such as maternal depression, increases the risk for several outcomes for the child, such as, for example, insecure attachment, speech and cognitive deficits and social interactions problems.

In a different way, the term "equifinality" refers to conditions in which different factors increase the risk for a specific outcome: maternal depression, parental conflict, insecure attachment, domestic violence and perceived temperamental difficulties predict aggressive behaviours during development (Walker et al., 2007).

Some evidences support the idea that risk factors tend to add up to each other, which leads to increased vulnerability in subjects. On the contrary, protective risk factors reduce risk effects, favour individual skills and strengthen the subject toward adversities, enhancing his/her abilities of coping.

Protective factors are the product of processes that improve the resilience to daily stressors caused by risk factors, and they allow the vulnera-

ble subject to overcome the difficulties. We cannot define them as absence of risk, since the absence of risks in itself can be a risk factor, depriving the subject of the opportunity to learn risks and manage them. Rutter (1985) distinguishes between risk factors and protective factors. The first refers to subject's predispositions, while protective factors operate indirectly as a cushion toward daily stressors and help the subject to become resilient to risk factors. Rutter describes protective factors as processes and mechanisms that enhance the individual response to risks that otherwise would lead to negative outcomes. They are not related to factors that make the subject "feel fine", but that protect him/her from destructive risks. The risk has a positive value that does not lie on its suppression, but rather on a better comprehension of negative behavioural outcomes, of the interactions between factors and their adequate management. We can compare the monitoring process of risk to the vaccine for snake's poison, in which a small dose of poison becomes the cure. In our case, protection does not mean erasing the risk, but rather dealing with it in a responsible way. In case of children and adolescents, the process is monitored by the educator.

The link between risk and protective factors has a huge relevance for the mental health of persons in the developmental stage, as well as to support, to favour and to promote parents' resources.

In this theoretical evolution, the focus of intervention shifts from the child to the parents, to the parents-child relationship, finally to the perspective affirming that the intervention has to be focused on the whole system including child/adolescent, parents and also health institutions, social workers, educational institutions, not only the child or the adolescent and his/her family.

Intervention strategies

The transactional model has implications for early intervention, particularly for identifying targets and strategies of intervention. Literature on early intervention programs highlighted programs that succeed in achieving long-term benefits are typically broadbased and have strong parental participation. In studies of early intervention or preschool enrichment programs where there are comparison groups, motor and cognitive gains are transient. The persistent benefits of these programs seem to be in the social realm: less school drop out, fewer instances of crime, and reduced teen pregnancy. While early intervention works with a child, one at time, the greatest challenges lie with the family, community, nation, and world in which the child lives (Blackman, 2002).

The nonlinear premise of transactional model that continuity in individual behaviour is a systems property rather than a characteristic of individuals provides a rationale for an expanded focus of intervention efforts. According to the model, changes in behaviour are the result of a series of interchanges among individuals within a shared system following specifiable regulatory principles. Emphasis is placed on the multidirectionality of change while pinpointing regulatory sources that mediate change. By examining the strengths and weaknesses of the regulatory system, targets can be identified that minimize the necessary scope of the intervention while maximizing cost efficiency. In some cases, small alterations in child behaviour may be all that is necessary to reestablish a well regulated developmental system. In other cases, changes in the parents' perception of the child may be the most strategic intervention. A third category includes cases that require improvements in the parents' ability to take care of the child.

These categories have been labeled *Remediation, Redefinition, and Reeducation,* respectively, or the "three Rs" of intervention (Sameroff, 1987).

Remediation changes the way the child behaves toward the parent. For example, in cases in which children are diagnosed with known organic disorders, intervention may be directed primarily toward remediating biological dysregulations. By improving the child's physical status, the child will be better able to elicit caregiving from the parents.

Redefinition changes the way the parent interprets the child's behaviour. Attributions to the child of difficulty or willfulness may deter a parent from positive interactions. By refocusing the parent on other, more acceptable, attributes of the child, positive engagement may be facilitated.

Reeducation changes the way the parent behaves toward the child. Providing training in positioning techniques for parents of physically handicapped children is an example of this form of intervention.

Interventions on mental health envisage relations affecting other relations, current or past, representational or behavioural.

From a transactional perspective, an intervention on a subject in development phase (first and second infancy, adolescence) is structured in order to take into account, first of all, significant relational networks and social/family context surrounding the child/adolescent: this explain the concept of "leverage" (Emde et al., 2004). Intervention aims at such significant relationships. The operator must evaluate the context in which the intervention is carried out, considering what situation might enhance a relational network, triggering a series of positive effects.

The concept of "leverage" defines a point of maximum efficacy in the intervention in the process of relationships affecting other relationships.

The “leverage” concerns the best chances perceived able to activate a therapeutical or preventive change in a relationships network. The “leverage” is effective to the extent in which individuals provide a contribute to clarify the nature of a certain problem and its solution.

Under this light, risk and protection factors assume great relevance. Tracing the development of ideas about risk factors we can see a change from the perspective of direct causality to the perspective of multifactorial causation, focused on the identification of cumulative index of biological and/or psychosocial risk. Characteristic of this approach is the concept of “risk profile”, which is based on the identification of various factors (eg. genetic, reproductive, constitutional, development, family, health physics, environmental, traumatic), each divided into a subsystem of categories to which is assigned a score that helps deduce whether situations are of high, moderate or low risk. The need to reconsider the risk profile of arises from observing that many people (children, adolescents, adults) have the ability to maintain a good adaptation in living conditions particularly unfavourable, an ability not to succumb even in the most adverse situations. To indicate this phenomenon has been coined the concept of “resilience” that, in studies on children and adolescents, refers to the fact that developmental tasks, typical of different ages and different situations, are characterized by patterns of adaptation and internal positive externalities, even in a context dominated by major risk factors and adversity.

In a study by Ungar (2004) resilience was shown to be the result of negotiations between individuals and their environments to maintain a self-definition as “healthy”.

This indicates that any element, isolated or associated to others, can be responsible of only a part of the whole variability, and consequently risk

factors in themselves cannot allow us to comprehend from where the resilience originates.

In order to better understand what makes people able to adapt to the more adverse conditions, it is necessary to introduce the concepts of "resources", "protective factors" and "protective processes", that are opposite to those related to risk. The presence of protective factors, indeed, is predictive of positive adaptation. The term "resource" indicates the material, practical goods owned by individuals, while "protective factors" indicates the quality of the relational environment. Eventually, "protective processes" define how protective factors work in stressing conditions (Masten & Reed, 2002).

To better understand risk and protective factors, we use terms introduced in social psychology, "distal factors" and "proximal factors", influencing behaviour (Baldwin et al, 1990). Distal risk factors regard social and cultural conditions that interact with daily life, and that can make families and individuals more vulnerable. Proximal factors emerge from daily life and are cognitive, emotional, relational.

Three levels of risk severity can be identified:

1) prevalence of protective factors = low risk;
2) presence of risk factors and protective factors = moderate risk;
3) absence of protective factors = high risk.

Therefore, distal factors determine a maladaptive condition that make families and individuals more vulnerable, but they are not directly related to the specific conditions that favour maladaptive behaviours.

Proximal factors, on the contrary, are perceived as subjective experience and are related to daily behaviours. They can have positive or negative values that contribute to modify the extent of risk factors.

When they have a negative value, we call them “stress or amplification factors”, whereas in case of positive value they are “protective factors”, reducing risk factors. For example, when there is a strong conflict between parents in a family, an external adult figure may play the role of protective factor, while such factor does not have much effect if parents share a good relationship. The positive effect of this relationship occurs only in replacement of the relationship with the parents.

The influence of protective factors lies, therefore, in their connection with risk factors. A protective factor can hence change the direction of a trajectory that used to be risky. Again, mother’s low education level, considered an important risk factor for the unhealthy conducts, can cause lacking in some areas of child care. But in order to produce a neglecting behaviour stressing proximal factors need to occur, for example a conflict with the spouse, or the bad temperamental aptitudes of the child that amplify the negative effect. On the opposite direction, a good marital relationship or the existence of social support can play the role of protective factors in compensate negligences in the child care.

An application of this theoretical model will become clearer in the following examples, focused on areas at risk in infancy and adolescence.

Intervention strategies for childhood

In childhood, a topic investigated in depth is abuse and neglect. Studies (Bryce et al., 2013; Bugental, 2009) identified several risk factors: a) individual factors, such as parents' psychopathology, low education level, social deviance, lack of social interactions, violence history in infancy, low ability to take responsibility, emotional distortion and scarce empathy, impulsivity, low ability in role taking, low tolerance to frustration, separation anxiety; b) familiar factors such as early marriage and pregnancy,

monoparental family, negative relationships with the family of origin and/or with the partner's one, couple conflicts and domestic violence; c) child's characteristics such as diseases or bad temperament.

These factors indirectly affect the child and they are the base that may lead to neglect. By themselves, these elements not necessarily entail neglect, but they may contribute to determine a weakness facilitating neglect when associated to other negative conditions occurring to the family.

Protective factors may reduce the risk: a) individual factors such as a feeling of inadequacy for being dependant on services, elaboration of neglect and violent experiences suffered during infancy, empathic abilities, wish to become better, ability in taking responsibility, personal autonomy, self-esteem; b) family factors such as a satisfying relationship with at least one member of the family of origin, a supporting network, a good conflict management; c) child's characteristics such as a good temperament.

As with regard to intervention, we might be dealing with three situations:

1. Prevalence of protective factors (low risk). In this case, probably, a child and a family need to be supported because of economical difficulties, or medical problems, or sudden, traumatic events that unbalanced the family's stability and its psychological setting. The intervention will consist of supporting the family;
2. Presence of risk and protective factors (moderate risk). This case is the more frequent. The intervention needs to be focused on child protection, to empower family and to child and family monitoring. For example, this can be the situation of a family in economical difficulties, with a young mother pregnant of her second child and unable to cope with the needs of the firstborn, having a bad temperament. The woman has

a good relationship with her own mother, but her support is not totally sufficient. The woman has indeed conflicts with her partner stressed for work problems and personal discontent. In this case, the protective factor, the woman's mother, is not sufficient at reducing the impact of other conditions. The early identification of family conditions at risk, when a child is not yet born, allow preventive interventions, such as home visits, contacts with pediatricians, attending day-care centres, parental training, free access to medical services, for a time length of 6 months to 2 years. MacLeod & Nelson (2000) suggest mass media policies addressed to young couples; home visiting for parents before child birth, with lectures dedicated to the sleep, the cry, the feeding, as well as a support to parents for managing the older child in preschool age; multicomponent interventions such as *Parent Child Development Centers* (Andrews et al., 1982), that consist of several interventions on economical support, social network building, community involvement. In highly risky situations, typically represented by monoparental families, by the young age of the mother, by social disadvantage, the interventions lead to the reduction of hospitalisation, of domestic incidents, of neglect and abuse. The interventions must be continuous, from pregnancy until the baby is two. A positive alliance with the family is crucial. These programs (for example in Germany and in Great Britain) have been successful in reducing abuse and neglect. While there is a lack of research that has compared single component and multicomponent programs, there is some evidence that multi-component programs that target a range of risk and protective factors are more effective than single component programs (Tully, 2007);

3. Absence of protective factors (high risk). In this case the intervention must to be addressed at protecting the child, at giving directions to the family, at evaluating family resources. Parents' problems may

compromise the child's development, so that the child needs to be protected through his/her removal from the family. These interventions are complex, and have to safeguard child's right to be assisted, but also to maintain a relation with his/her family. Psychosocial and therapeutical interventions that do not clarify the nature of family ties, that leave the child in a state of uncertainty, doubt, confusion about his/her feelings towards his/her family, risk not to solve the emotional ambivalence, the anger, the blaming and the self-denigration typical of abuse. The child needs to better understand the violence he/she suffered and getting free from unjustified blaming in case of adoption or external tutoring. The intervention must evaluate the possibility of change of the family, in order for the child to be riconnected with the family of origin.

Intervention strategies for adolescence

Adolescence is a period of intense and rapid development and is characterized by numerous developmental tasks. When adolescent development is successful, the result is a biologically mature individual equipped with the capacity to form close relationships and the cognitive and psychological resources to face the challenges of adult like (Hazen et al., 2008).

For some adolescents this period is particularly difficult because of the presence of family and community risk factors such as parental mental illness, substance abuse, domestic violence, and child abuse or neglect that predispose them to poor developmental outcomes.

Risk factors that increase the likelihood of future maladaptive outcomes, can be broadly grouped into five domains:

- Individual (eg: personality variables, developmental delayes);

- Family (eg: low socioeconomic status, mental illness, family conflict, coercive parenting)
- Peer (eg: peer rejection, deviant peer-group membership);
- School (eg: academic failure, low commitment to school);
- Community (eg: neighbourhood, poverty).

In relation to individual risk factors the early onset of puberty is a risk factor for a range of emotional and behavioural problems and risk behaviour. There is increasing evidence that earlier pubertal timing is associated with anxiety, conduct disorder and substance use (Reardon et al., 2009).

In relation to familiar risk factors, family discord, parental mental health problems, family stress, and abuse and neglect, is also thought to be a significant predictor of youth self-harming behaviours. As well as these distal factors, more proximal precipitating events are also relevant to self-harm. Such influences include stressful events, such as the breakdown of a romantic or family relationship or leaving home. Miller & Glinski (2000) suggest that these precipitating events in conjunction with distal factors increase the likelihood of the young person attempting to harm themselves.

The growing interest in resilience has arisen from researchers finding that approximately one-third of children living with risks and adversities were well adjusted, happy and successful. Researchers began to explore factors accounting for their success, and identified specific protective factors enabling young people to overcome the adversities they faced and make the most of their opportunities. The most commonly cited *protective factors* as:

- A strong sense of connectedness to parents, family, school, community institutions, adults outside the family;

- The development and enhancement of academic and social competence;
- Involvement in extracurricular activities that create multiple friendship networks.

Resnick et al. (1993) found that family connectedness and school connectedness were protective against a range of health risk behaviours in adolescence.

Regarding intervention, we might be dealing with three situation:

1. Prevalence of protective factors (low risk). In this case the difficulties are due to sudden and traumatic events that unbalance the family stability. The intervention consists in the support of the family and of the adolescent;
2. Presence of risk and protective factors (moderate risk);
3. Absence of protective factors (high risk).

In the last two cases multicomponent interventions, involving the adolescent's relational context, revealed to be more useful. Cameron and Karabanow (2003) note that unidimensional interventions will not suffice. Not only do these adolescents and their families require multi-component strategies but they require it over a period of years. In order to support adolescents at risk, Cameron & Karabanow suggest programs need to facilitate the following:

- social relations with peers, adults and community institutions;
- information, coping skills and tangible resources for everyday living;
- special support for academic progress and social relations at school;
- direct support for parents coping with the challenges of adolescent difficulties.

A multicomponent program works directly with the family to improve family emotional bonding and parental discipline strategies, together with opportunities for increasing parent-teacher communication and support for academic performance, as well as promoting involvement in extracurricular activities, structured sports or volunteer organisations. However, successful outcomes from multicomponent programs rely on the training and commitment of staff, adherence to principles underlying the programs, commitment to the strategy by adolescents and their families, co-operation within and between school staff, positive involvement with peers and community or neighbourhood and effective interagency work.

Conclusion

How do innate characteristics of the child interact with environmental factors in determining how a child develops and who the child will become?

The history of developmental psychology has been characterized by pendulum swings between a majority opinion that the determinants of an individual's behaviour could be found in his or her irreducible fundamental units or in his or her irreducible fundamental experiences.

In the Sameroff's transactional model, development of any process in the individual is influenced by interplay with processes in the individual's context over time. This model acknowledges that both nature and nurture are important, that they interact in the individual, and that this interaction has a cumulative effect over time.

The development of the child is a product of the continuous dynamic interactions of the child and the experience provided by his or her social settings. What is core to the transactional model is the analytic emphasis placed on the bidirectional, interdependent effects of the child and envi-

ronment. Transactions implies an ongoing process of mutual and emergent effects within relationship with a view to how with processes contribute to the formation of different developmental pathways. Transactions were more than just mutual effects; they included the concept of transformation. Most of these transactions are normative within the existing cultural code and facilitate development. Intervention only becomes necessary when these transactions are nonnormative.

The transactional model has been used as a basis for many intervention programs to improve developmental outcomes. The complexity of the transactional model permits the understanding of intervention at a level necessary to identify targets of intervention, and it helps to understand why initial conditions do not determine outcomes, either positively or negatively.

The model also helps to understand why early intervention efforts may not determine later outcomes. There are many points in development in which regulations can facilitate or retard the child's progress. According to the transactional model these many points in time represent opportunities for changing the course of development.

Models that focus on singular causal factors are inadequate for the study or manipulation of developmental outcomes. The evolution of living systems has provided a regulatory model that incorporates feedback mechanisms between the individual and the regulatory codes. These cultural and genetic codes are the context of development. By appreciating the workings of this regulatory system, we can obtain a better grasp of the process of development and how to change it. A family alone, a health worker alone, a therapist alone, a social worker alone is unlikely to achieve the success that might be possible through involvement and coordination of the community.

Overall, these two elements, family and community, represented key to the success of early intervention.

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