Trauma is not only about effect but about formation

Martine F. Delfos, PhD

Picowo, Psychological Institute for Consultation, Education and Research

Correspondence concerning this article should be addressed to Dr. M.F. Delfos; Picowo, Jos.Haydnlaan 2A, 3533AE, Utrecht, The Netherlands. E-mail: mfdelfos@ziggo.nl

Abstract

In psychiatry and psychology the interest on trauma evolved from thinking that trauma was directly connected to the event to realizing it has its impact long after the event. In the evolution of the concept of trauma it took till 1994 to acknowledge the fact that children have specific reactions to trauma and till 2013 to begin to mention that internet could have a traumatic influence. The theory on trauma was about the effect with anxiety as a primordial element. This resulted in a treatment concept as EMDR, which neglects the deeper layers of trauma. Because it was only discovered long after the birth of the concept that trauma also affects children, we did not really pay attention in research to the effect of trauma in the sense of formation. We need a new theory that encompasses effect and formation. Therefore we need a developmental perspective on trauma.

Keywords: trauma, brain networks, formation, treatment, sexual abuse, war

Introduction

Almost everyone has experienced a traumatic experience (TE) in one way or the other, an event causing a traumatic reaction (TR, trauma) during and after the event. Many people even experienced multiple TE's during their life. Whether something can be considered to be a TE is largely determined by the reaction of the person who is confronted with it, or as a reaction to people reacting to a TE. The TR reaction to a TE is a *direct* reaction, the TR in reaction to a person reacting to a TR is an *indirect* one. This can be witnessing someone undergoing a TE, or experiencing a TE in a virtual environment mediated by internet for instance in a game, or not knowing about a TE but experiencing the action of someone else as a frightening thing. In the following example you see such an *indirect* reaction that can have a lot of influence.

Peter, a young adult, remembers very clearly that his father and he were looking out of the window, listening to a sound outside. Suddenly his father drew him away from the window. Peter felt a strong anxiety, and only later he discovered that his father expected a bomb attack and wanted to protect him. Peter still is afraid to stay close to a window.

Many factors play a role whether a TR to an event will occur in someone, one of them is age. Children can experience trauma during and after a TE where adults do not, and adults can experience trauma where children do not. A second factor that influences whether an experience leads to a traumatic reaction is life-experience. Of course life-experience correlates to an important extent to age, but also to the social environment, historical situation and culture.

The consequences of a TE can be huge. We always talk about the fear and anxiety caused by a TE, such as the nightmares and re-experiencing the TE afterwards with flashbacks. This, however, is only part of the possible consequences of a TE. It is the tip of the iceberg, especially when it comes to *childhood traum*a. The anxieties only express two important elements of a TR: the urge to understand what has happened and the fear of recurrence.

A new theory has been developed about trauma viewing it from the a *developmental perspective* (Delfos, 2014). This new theory on trauma goes one step beyond what was hitherto the only focus on trauma. From the developmental perspective trauma has not only an *effect* in the sense of feelings and cognitions resulting possibly in disturbing daily life and sleep, but a TE has also a consequence in the sense of *formation* that deeply influences the perspective on the world and the self-esteem, certainly when it concerns trauma occurring during childhood and youth.

Trauma in the diagnostic handbooks

The TE someone experienced belongs to the past, not to the present. In fact, we no longer think it is the TE itself which is the problem, that was what we thought in the beginning of the concept of trauma, with the DSM in its first version in 1952, DSM-I (Diagnostic Statistical Manual of Mental Disorders) (APA, American Psychiatric Association, 1952). The trauma, then classified as *gross stress reaction*, was considered to take place at the moment the TE occurred, for instance at the precise moment at war when the bomb exploded. The problem of the TE was the exact reaction (physical and psychological) at that moment. That is why it was situated in war (*combat*) and *civilian catastrophes* in the first DSM. The somewhat

strange consequence of this perspective on trauma is that the concept disappeared the second version, DSM-II (APA, 1968), because the DSM originating from the American background and no war or catastrophes happening in America for some time after the two World Wars, the *gross stress reaction* disappeared from this handbook. It was in 1980 that the concept of trauma appeared again, in the DSM-III (APA, 1980), when America got involved in March 1965 in the ongoing Vietnam war, which took place from 1-11-1955 to 30-4-1975. The Vietnam Veterans showed serious problem behaviour after the war, even long after their participation in the war. In the end more Vietnam Veterans died from suicide after the war than were killed during the war (Pompili et al., 2013). Researchers discovered that there was an important difference between the American soldiers after the World Wars and the Vietnam soldiers. The American soldiers from the World Wars went home together on boats that took several weeks from the country at war to the home land. The soldiers were together with their companions for quite some time, and not yet in the 'normal' world that awaited them at home. The Vietnam soldiers, however, took the plane and within a short while they were home, expected to pick-up normal life. This insight in trauma led to the idea of putting soldiers in quarantine between the country at war and their home land, three weeks in Greece for instance. We discovered that trauma developed after the TE and as a result this was called PTSD, *Post Traumatic Stress Disorder*, classified under *Anxiety Disorders* in the DSM, also in the ICD (International Statistical Classification of Diseases and Related Health Problems, WHO, first in 1948, the 10th in 1990, and 11th due in 2018). The general idea was that feelings were affected through stress, which could – severely – influence daily functioning and sleep. This *effect* of trauma after the TE can be recognized in feelings, memories, and disruption of daily life. This perspective on trauma went on in the fourth and fifth DSM (DSM-IV, APA-1994 and DSM-5, APA-2013), and more or less the same

idea holds for the second handbook, the ICD (WHO, 1948-2018). This view on trauma is about the *effect*, we could say *affect* because the ground feelings of the person shift to anxiety and fear. Refinements in the DSM after the discovery of PTSD are mainly about the fact the children can also experience trauma with different symptoms and that not only *real life* but also the *virtual environment* (Delfos, 2013) via internet can engender PTSD (APA, 2013). Astonishing is that with regard to the last element – internet – it is explicitly mentioned that trauma due to internet experiences can only happen in the context of work, as if one could not be traumatized by internet when not working or as a child.

On effect, 1: The first layers of traumatic reaction

The impact of trauma can be categorised in different layers (Delfos, 2014). The first three layers are about the *effect* of a TE.

A. The first layer of trauma is about the daily effects in terms of memories and visual recall such as flashbacks, re-experiences, alertness (*arousal*) and anxiety. These elements can interfere with and restrain normal functioning.
B. The second layer of trauma is the fear of recurrence and feelings of guilt that disturb functioning in certain areas, associated to the TE.
C. The third layer of the trauma is about the development of cognitive and emotional detrimental patterns, detrimental for normal functioning. It is the area of serious anxieties forming phobias and compulsive thoughts and behaviour.

These three layers all have to do with anxieties. This is why in the DSM and ICD trauma is classified under Anxiety Disorder. The evident anxiety is a signal for the idea that trauma could be the source.

On effect, 2: the fear of recurrence

The problem of the reaction to a TE is not so much the moment itself, but more important is, what remains after the TE. One of the important things that lingers behind is the fear of recurrence. The TE is terrible to experience, and therefore it creates the fear that it will happen again, the *fear of recurrence* of the TE, even if is improbable or impossible in reality.

If the TE has occurred under exceptional circumstances, for example on holiday, it has a different effect on the fear of recurrence than when it occurred in daily life, at home or at school. In the case of a TE during a holiday seems relatively easy to cope with the fear of recurrence by changing the holiday destination. If it occurred in a regular daily atmosphere than daily life is more easily affected. We see that for example in the trauma arising from the fireworks disaster in Enschede, a city in the Netherlands, where an explosion of a firworks factory exploded in the middle of an ordinary day. This catastrophe penetrated the ordinary lives of people deeper than if it had occurred at midnight with the transition from the Old year to the New Year, when fireworks are expected. This TE had a long-lasting and broad effect on the people of the city.

The usual way people try to cope with the fear of recurrence is by developing feelings of responsibility and guilt. It is as if thinking that the TE occurred through their own fault makes it possible that changing their behavior will prevent the TE to occur again. We see people say things such as: '*I should have taken another train'* or '*If I would have said goodbye when I left home it would not have happened.*' This guilt gives hope that in one in one way or the other, one has control over events. In fact, this is a kind of the magical thinking of young children. It is as if the anxiety causes a cognitive regression to an earlier period when a less refined thinking was operational.

Because a TE basically occurs unexpectedly and unintentionally, the reason is often difficult to grasp and reasoning become limited and the feelings of guilt are often farfetched. Therapists often feel they must help people shake off their feelings of guilt by saying that it is not their fault and that is happened by accident. Instead of diminishing the anxiety they increase the anxiety by trying to make people understand they have no control over the TE. In that case, these feelings of guilt prove to be quite persistent, even when the TE cannot be repeated. This conjuring magical feelings come across people, defying reality. The fear of recurrence is often an important element of the burden trauma represents.

Trauma treatment therefore, begins with the treatment of the fear of recurrence. And this starts with treating the feelings guilt. If these feelings of guilt lie at the surface, and people are aware of it, the treatment of these feelings is most effective in overcoming trauma.

She was nineteen when she came to me for treatment. It was one of my first patients in a long line of people suffering from trauma. She said that she had sex with her father since she was three years old and that it was still going on. But it's her own fault she adds defiantly. I am surprised. "But it's not your fault if your father had sex with you when you were three years old, is it?" "Yes," she answers, sounding sure of her case. I try to discover what it means what she says and asks her if she knows a girl of three years, she does, and whether she could visualize her in her mind. "Can that girl want to have sex with her father," I ask her. "No," she said, "but I did." Her reaction made it clear to me that she could comprehend cognitively what she was talking about, but that she felt it did not apply to her. I let go of trying to convince her that it was not her fault, and started a joint investigation of her guilt.

"Why is it your fault," I asked her kindly." "I had a very nice dress with polka dots and I looked very pretty in it, and I knew that," she answered without any hesitation. "Did he always have sex when you had that dress on," I asked her. "No," she replied with some surprise in her voice. "When then," I asked. "When he's drunk," she replied, using the present tense. "Then you know when it's dangerous," I continued. At that moment started my experience in dealing with feelings of guilt by trauma as the most effective way to treat the fear of recurrence. I discovered that speaking about the feelings of guilt most of the time made it possible to discover ways to protect oneself.

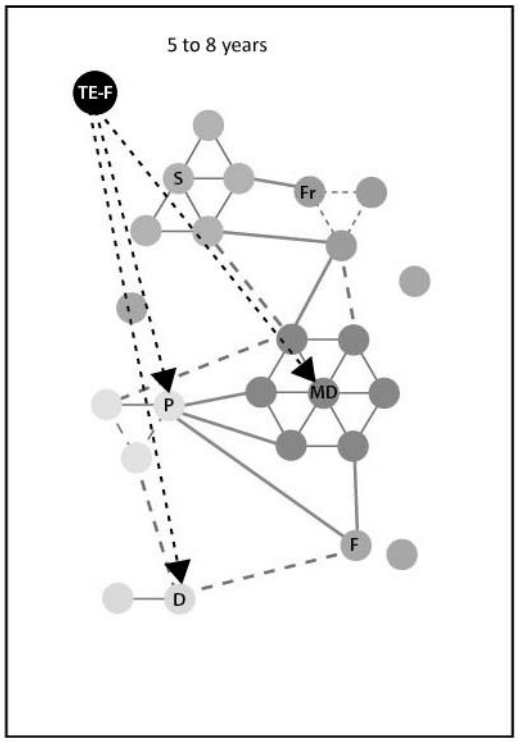
The young girl was no longer abused by her father after this conversation. This probably has to do with her voicing her problem in therapy, with the conversation itself, and with the fact that guilt was examined and by that investigation she discovered the way to protect herself, that is stay away from him when he was drunk.

In the upper layer of trauma the effect of anxiety, nightmares and flashbacks restrict normal function. Still deeper lies the fear of recurrence, feelings of guilt and malfunctioning in some areas associated to the TE. Again a layer deeper there is the possibility that the trauma is embedded in cognitive and emotional harmful patterns that could lead to phobic behavior and compulsive thoughts and behavior. Still below these layers are the extensive problems caused by the *formation* trauma causes.

On formation, 1: The placement of traumatic experiences in brain networks

People try to understand a traumatic experience. One of the first questions that arise is: *Why did this happen to me?* or *Why me?* Brains do something with the trauma, including storing in into memory. In the brains there is the white and grey matter. The grey matter are the brain cells and the white matter is the substance that makes the connections between

brain cells. In the organization of the brain there is a basic network that is still active in resting state. This is called the *Default Mode Network* (DMN) (Greicius et al.,2003). In young children the DMN is limited and connectivity grows with maturation(Daniels et al., 2011). A traumatic experience can be stored in the networks of the brain organization, named *Conceptual Brain Networks*, CBN's by me; networks which are formed in the brains, around concepts and to connect interrelated concepts. In young brains, these conceptual networks, which have a concept or concepts related subject, are still quite rudimentary, simple. Also, there are not many of such strong and comprehensive networks formed in the very young child. With growing maturation and growing life experience the networks get developed, refined and strengthened. In Figure 1, an example of a young CBN, where the network 'mummy and daddy' is already well developed, but 'school' not. The fireworks catastrophe (TE-F) mentioned before will have a totally different memory-storing effect in a four year old than in a thirty year old.



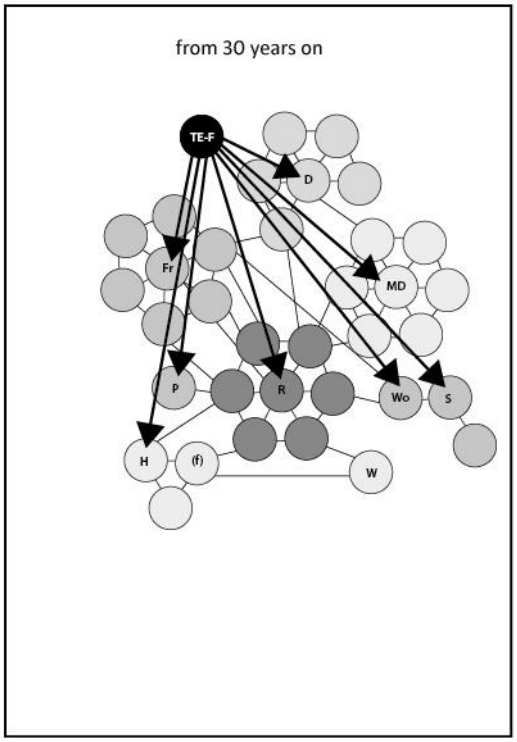


Figure 1: *CBN's in a child between 3 and 8 years old* (Delfos, 2014)

Figure 2: *CBN's of an adult from 30 years old* (Delfos, 2014)

In Figure 1 we see an already well-developed mummy-and-daddy network (MD), only minimal CBN Friends (F), school (S), pets (P) and diseases (D). The TE-F will be placed temporarily (dotted lines) in the CBN's M (because this is the most important network), in D (because of the association between ill-fever-hot-fire) and P (because the pet died after being ill).

In Figure 2 we see a well-developed systems of conceptual brain networks with the CBN MD less central, R (relation/partner) in the middle, F well developed, et cetera. The TE-F is placed in a definite way, because of the already developed CBN's through maturation and life-experience (straight lines). Of course this is only a part of the CBN organization in the brain, just to illustrate.

A TE can be placed in an inadequate CBN or not being placed in certain CBN's that would be relevant. In the course of life the CBN's are becoming more extensive. By faulty connections the child's makes because of lack of knowledge and life experience TE's are placed incorrectly, that is why in young children they are placed 'temporarily'. In addition, the memory and storing in the memory is strongly influenced by the presence or absence of verbal abilities. Around seven years, what I call the *hinge age* (Delfos, 2015), there is a great activity in the expression of genes (Fulker et al., 1993). At this time experiences are mainly placed under sensory elements in the memory: smell, color, taste, sound and touch. After seven years of reorganization takes place where experiences are stored around verbal concepts. This is one of the reasons causing the adults often cannot

easily reach the early childhood memories. Looking for words, the adult only find sensory experiences.

In addition, a decrease in white matter production will take place in the brains in the advent of trauma; certainly in the case of childhood trauma the white matter decreases (Daniels et al. 2013). The ability to connect brain cells and CBN's as a result decreases. Possibly this has to do with the negative associations surrounding the trauma through which the brains protect people against getting overwhelmed by trauma by making it less approachable.

On formation 2: Formation through trauma

The fear that accompanies trauma is often where attention is focused on. Treatments follow this main focus. Yet this is not the main problem that trauma causes. The most profound consequences of trauma is not the *effect*, but the *formation*. Especially in childhood trauma you see this, because children are still is full process of formation. Children and adolescents are still developing and their brains are still maturing. That means that trauma can profoundly form a child and may affect the development tasks. This applies especially to the idea that a child has on certain issues and the idea of himself and his perspective on the world. This perspective is often not realistic from an adult's point of view, and not based on life experience. Because the child that still cannot express himself in words or when he is ashamed and afraid to express himself to others or because his still high egocentricity does not make him aware that he should share with others, there will be no verification and no reality testing. This way childhood trauma can find a place in the brains of adults and without the adult being aware of it, the trauma affects thoughts, feelings and behavior in the

adult. The forming can be described according to the different ages and the associated development stages. This is called the *Developmental Perspective on Trauma*, DPT, which encompasses five developmental phases, and can be applied to different subjects as war (*Developmental Perspective on War Trauma*, DPWT, in five developmental phases) and sexual abuse (*Developmental Perspective on Sexual abuse Trauma*, DPST in ten developmental phases).

The following is an example of the consequences in *formation* of a TE about the death of a father of a boy of four years old, and the influence on his self-image as a young adult.

A young man of 18 years comes to therapy. He is friendly, shy and does not use many words. After some time it becomes clear what image he has of himself. He says that he is a monster, that is literally the word he uses to describe his personality. A strong statement, which he voices in a serious tone and without any doubt. Completely inconsistent with the gentleness he expresses in his behavior. At one point he says to the therapist: "You are afraid of me." The therapist answers truthfully and kindly, "No." "That is not correct", he quietly replies; his certainty about him being a monster high. A while later, attention is paid to the experience from his early childhood, the death of his father, which could be a child-trauma. He was four years when his father died. The therapist asks, "Do you remember something about that?" The young man makes a screwing movement with his hand and after a little moment it was as if he 'throws' the word 'screw' by voicing it. Because the non-verbal gesture followed by only one word, it becomes clear that he never spoke about the death of his father, he is at loss for words and te gesture was first, in line with the strongly preverbal period the TE

happened. In fact he said later that he never spoke about it before. He tells that he had to screw tight one of the screws of the coffin where he dead father was lying in.

When we place ourselves in the boy's shoes when he was four years old, it becomes clear that awareness of the irreversibility of death is not yet developed, not formed yet. He is not yet in the developmental phase from five to eight years. At that age, dead is 'being away' or 'being asleep'. Children from five years can look at an adult and say with a big smile: *You will die*! Proud that they are they understand that everyone dies. Young children do not have the sense of the irreversibility of death yet; that realization is slowly formed in the following years. During the developmental phase between five and eight years children try to grasp the great concepts of life, such as mother, father, school, animals, young, school, teacher, death and so many. And this developmental ages forms the basis of their perspective on the world.

In the boy from the example above, the awareness of the irreversibility of the death was not yet developed. That means that his feels has screwed close the coffin where his 'living' father was lying in. Not surprisingly, he feels bad about himself, a feeling that in due course developed in the perspective of himself as a monster. The feeling is not associated only to the death of his father, he is truly impregnated with this, because it has become his perspective on himself, all this without the reason being clear to him and without he spoke about it with others. His self-image was therefore not tested against reality. Now he spoke about it in therapy, he realized that his feeling and his self-image were developed without him being aware of the true cause and when he became aware his self-image was thoroughly reconsidered. The idea of monster disappeared.

For quite some time already his development had stagnated, eventually he stopped going to school, and was at home lying in his bed for a very long time before he entered

therapy. His short admittance to a psychiatric child hospital failed, because it was mainly based on medication.

In the therapy his philosophical inclination was discovered. He began to delve into philosophy and discovered Nietzsche. Full of enthusiasm he talked about Nietzsche and he said he felt as if he was the reincarnation of Nietzsche. After some time talking about the philosophy of Nietzsche, the therapist said. "I think that Nietzsche lost his father when he was young". The next session the young man is says full enthusiasm: "Nietzsche was the same age as I was when he lost his father!" That was why he could so intensely adopt the philosophy of Nietzsche, and that philosophy itself was suddenly put in the context of the loss of a father at age four. Of course there are other factors, including the sharp intelligence of this young man and that of Nietzsche, but in the trauma and the two life join each other by their life experience.

The Trauma Impact Model, TIM

In the treatment of trauma there should be paid attention to:

1: What is the trauma.

2: What are the circumstances of the trauma.

3: What is the resilience of the person who experiences trauma.

4: How is the socio-emotional network around the person.

5: What is the person's age.

6: What is the possible development task where the child or young person is performing at that moment of the TE.

The answer to these questions can help us to see how necessary treatment of the traumatic experience is.

Assessing the circumstances and characteristics of the person who experiences a TE results in discerning three groups of *impact* of a traumatic experience.

The first group consists of those traumatic experiences that have an impact, but where the conditions are favorable. The latter is mainly about the socioemotional network around the person and in the case of children, these are basically the parents. In this group, the person can process the TE in principle by itself. People, including children, under these conditions do not require professional treatment, but support and help. On the contrary. Professional treatment would teach the person that he or she cannot overcome the trauma by his own and is dependent on others to overcome things. Overcoming trauma with the help or support from people around you, makes someone psychologically stronger and increases the resilience of children. One learns new coping mechanisms, self-confidence grows and life insight increases.

The second group consists of people for whom the TE has serious consequences and infringes upon everyday life, while the conditions are less favorable. Help is needed and maybe professional treatment may be needed.

The third group involves TE's that have severe, profound and formative impact under adverse conditions. Professional treatment is necessary in all probability to prevent long-term damage and to promote ongoing development.

Conclusion

This article is not the result of an experimental research project, but an encompassing new theory on trauma. This theory on trauma and its following models, can shed a new light on and offer a deeper insight in trauma and its consequences throughout life. The most important and most devastating traumas are the childhood trauma, they resonate throughout life. This theory offers a framework to discover the workings of trauma in the person as a whole, and not only in the way he or she handles fear and anxiety. It makes clear how the trauma feeds itself from developmental tasks and leave the adult sometimes at loss for adult behavior.

References

APA, American Psychiatric Association. (1952). *Diagnostic and Statistical Manual of Mental Disorders*. (DSM-I, 1st ed.). Washington, DC: American Psychiatric Association.

APA, American Psychiatric Association. (1968). *Diagnostic and Statistical Manual of Mental Disorders.* (DSM-II, 2nd ed.). Washington, DC: American Psychiatric Association.

APA, American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders.* (DSM-III, 3rd ed.). Washington, DC: American Psychiatric Association.

APA, American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders.* (DSM-IV, 4th ed.). Washington, DC: American Psychiatric Association.

APA, American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders.* (DSM-5, 5th ed.). Washington, DC: American Psychiatric Association.

Daniels, J.K., Frewen, P., McKinnon, M.C., & Lanius, R.A. (2011). Default Mode alterations in posttraumatic stress disorder related to early-life trauma: a developmental perspective. *Journal of Psychiatry and Neuroscience, 36* (1), 56-9.

Daniels, J.K., Lamke, J-P., Gaebler, M., Walter, H., & Scheel, M. (2013). White matter integrity and its relationship to ptsd and childhood trauma-A systematic review and meta-analysis. *Depression and anxiety, 30*, 207-216.

Delfos, M.F. (2013). The virtual environment from a development perspective. In B. Heys, M. Matthes, & P. Sullivan (Eds.). *Improving the Quality of Childhood in Europe 2013. Volume 4,* 102-157. East Sussex/United Kingdom: ECSWE-European Council for Steiner Waldorf Education.

Delfos, M.F. (2014). *Trauma from a development perspective*. Amsterdam: SWP Publisher, Amsterdam.

Delfos, M.F. (2015, 5th edition). *Ontwikkeling in vogelvlucht. Ontwikkeling van kinderen en adolescenten*. Amsterdam: Pearson. [Development from a bird's eye. Development of children and adolescents.]

Fulker, W., Cherry, S.S. & Cardon, L.R. (1993). Continuity and Change in Cognitive Development. In R. Plomin & G.E. McClearn (Eds.). *Nature, Nurture and Psychology*, 77-95. Washington DC: American Psychological Association.

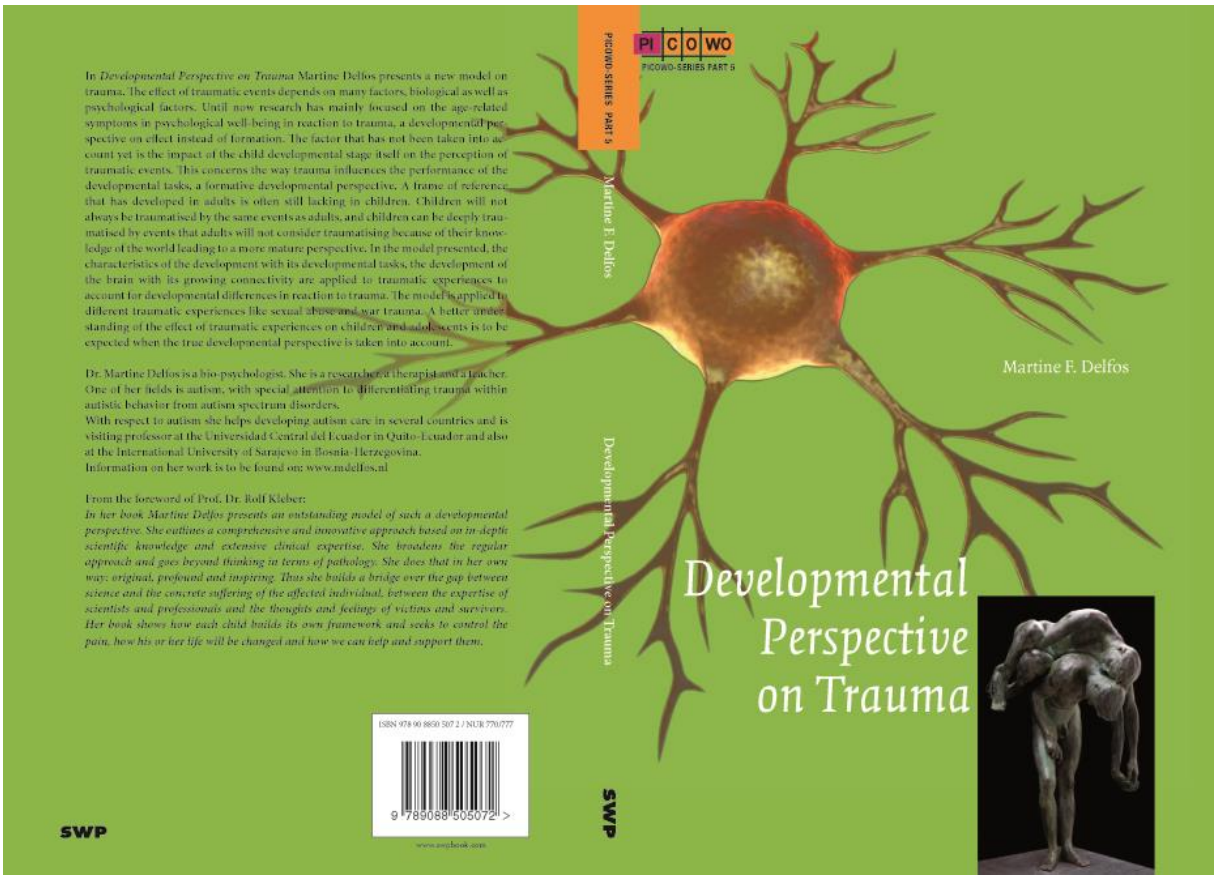
Greicius, D.Krasnov, B., Reiss, A.L. & Menon, V. (2003). Functional connectivity in the resting brain: A network analysis of the default mode hypothesis. *PNAS*, vol.100, 253-258; doi 10.1073/pnas.0135058100.

Pompili M., Sher, L., Serafini, G, Forte, A., Innamorati, M., Dominici, G., Lester, D., Amore, M., & Girardi P. (2013). Posttraumatic stress disorder and suicide risk among veterans- a literature review. *Journal of Nervous and Mental Disease, 201*(9), 802-12.

WHO, World Health Organization (1948-2018). *International Statistical Classification of Diseases and Related Health Problems*. First edition in 1948, the 10th in 1990, and the 11th due in 2018. Geneva: WHO.

Notes on Author

Dr. Martine Delfos is a clinical psychologist. She works as a researcher and therapist in several countries. She was professor at the Twente School of Education, and visiting professor at the University of Sarajevo (Bosnia-Hercegovina) and Universidad Central del Ecuador (Ecuador). She is a theory and model developer, her theory on trauma was published as part 5, the Picowo-Series of the Picowo Institute.



Information about the work of Martine Delfos: www.mdelfos.nl