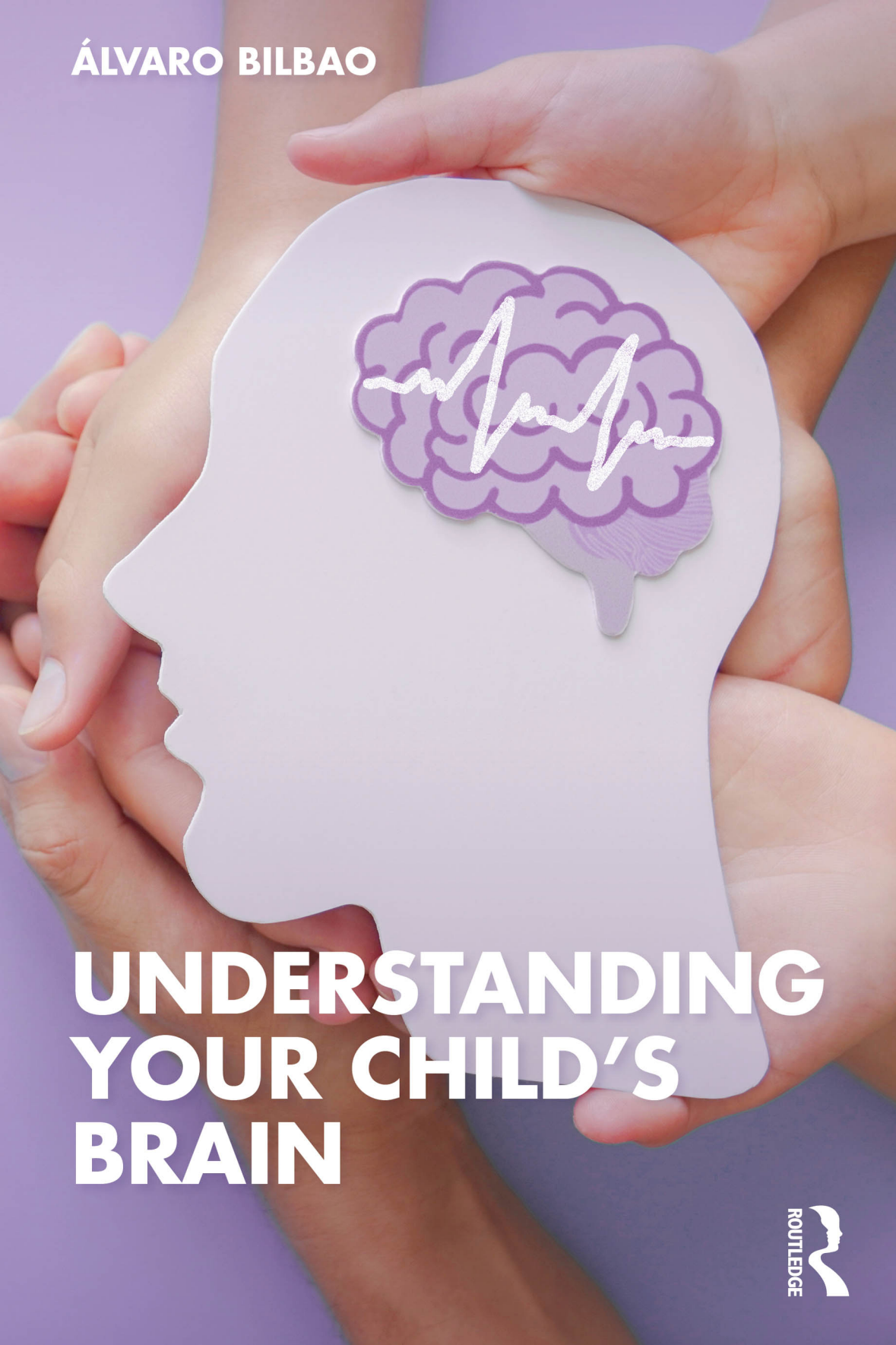


ÁLVARO BILBAO



UNDERSTANDING YOUR CHILD'S BRAIN

Understanding Your Child's Brain

Understanding Your Child's Brain simplifies the neuroscience behind what is going on in a child's brain during the first six years of life to help parents develop the full intellectual and emotional potential of their children.

The book starts with an accessible explanation of the pillars and principals to understanding the child's brain. It then provides tools to help parents communicate more effectively with, nurture empathy in, and enforce rules and positive behaviours for their children. Examining how to develop the emotional intelligence of children as well as their intellect, the chapters examine how to raise children based on trust, assertiveness, and fearlessness, while also providing support and exercises in improving language, memory, creativity, and self-control.

This book offers parents and educators practical solutions to parenting problems and realistic advice for ensuring the healthy emotional and intellectual development of their children. It will also be relevant to all mental health professionals who want to be more assertive when talking to parents about their child's problems and growth.

Álvaro Bilbao, PhD, is a psychotherapist, doctor in psychology, neuropsychology, and father to three children. Trained at Johns Hopkins Hospital and the Kennedy Krieger Institute, he has also collaborated with the World Health Organization.

'Understanding Your Child's Brain includes common sense, easy to understand tools and strategies that are grounded in science to help parents and educators manage the everyday challenges encountered when raising and teaching children. Throughout the book, Dr. Bilbao explains principles of psychology, child development, and neuroscience to help the reader understand not just how to interact more positively and effectively with children but also why the techniques described facilitate healthy psychological and neurological development. This book absolutely will help parents to more fully understand their child's brain.'

Beth Slomine, *Director, Neuropsychological Rehabilitation Services, Kennedy Krieger Institute, Baltimore*

'A book all adults should read.'

Javier Ortigosa, *Psychotherapist, Spain*

'In this well written and easy to read book for parents, Álvaro Bilbao, PhD, a neuropsychologist and father of three, gives insight into how a child's early brain development shapes their world and affects their learning and behavior. Drawing on years of clinical practice and sound neuroscience, Dr. Bilbao provides parents with practical, age-appropriate strategies for everyday life to foster a child's intellectual and emotional growth to help them reach their full potential. I highly recommend this book to all those raising young children.'

Margaret B. Pulsifer, *PhD, Massachusetts General Hospital, Harvard Medical School*

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Álvaro Bilbao

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In memory of Tristán, who, wherever he is, spends his days laughing with his parents and playing with his siblings and cousins.



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Introduction

The child's brain explained to parents

The most important period of life is not the age of university studies, but the first one, the period from birth to the age of six.

Maria Montessori

Children awaken unique emotions in any adult. Their gestures, their genuine joy and their innocence move us in a way that no other experience in life can. The child connects directly with a very special part of us: the child that we were, and still are. Perhaps you have once felt the desire to sing in the street, have an argument with your boss or jump into a puddle on a rainy day. Yet because of responsibilities, or embarrassment, you have chosen not to. Being with a child is a beautiful experience, because when we are with them, we connect with a very special part of ourselves: the lost child that we need to make contact with at so many moments of our life, and which is possibly the best part of each one of us.

If you have this book in your hands it is because, as a father, mother, educator or healthcare professional there is a child in your life. Therefore, you have the opportunity to connect with the part of your brain that laughs, plays and dreams within you. Educating a child is also a great responsibility and possibly the most momentous act in many people's lives. The transcendence of parenthood reaches all levels of human existence. On a biological level, children are the seed that spreads your genes and ensures your transcendence through future generations. On a psychological level, for many people it implies the realisation of an uncontrollable instinct. And on a spiritual level, it represents the possibility of achieving fulfilment by seeing happy children grow up.

As any parent understands at that moment in which they hold their child in their arms for the first time, being a parent also carries a series of different responsibilities. First, those which involve caring for the child, including nutrition, grooming and basic protection. Fortunately, hospital midwives and the ever-willing grandmothers will have given you theoretical and practical classes on all of this. Secondly, there are the economic responsibilities.

A child comes with a series of costs that must be borne, to the delight of department stores, pharmacies, nurseries and supermarkets. Fortunately, for an average of twelve years, the education system has taught you so that you can earn a salary. You can read and write. You can work a computer. You can speak – or attempt to speak – another language. You are able to sit for almost eight hours every day. You know how to work in a team and have specific training in whatever it is you do. The third responsibility of every parent, and the most important one, is that of educating their children. From my perspective, education is nothing more than supporting the child in their brain development, so that one day that brain allows them to be autonomous, achieve their goals and feel good about themselves. Although, by explaining it in this way, it may appear simple. Educating has its complications, and most parents do not receive any training on how they can help their children during this process. Essentially, they do not understand what basic brain functioning is, how it develops, or how they can support its growth. On occasion, every parent will feel lost, lose direction or feel insecure about how they can help their children in different aspects of their intellectual and emotional growth. At other times, they will act with confidence, but in a way that goes against what their child's brain needs at that time.

I don't want to misguide you, or give you a distorted idea on the influence that, as a parent, you can have on the intellectual and emotional development of your children. Your son or daughter comes as standard, with a character that will mark their way of being for the rest of their lives. Some children are more introverted and others more extroverted. There are calm children and others who are excitable. Likewise, we know that at least 50% of your child's intelligence is determined by their genes. Some studies indicate that possibly another 25% depends on their classmates and the friends with whom they socialise. This has led some experts to assume that parents barely influence their children's development. However, this statement is not correct. The child, especially during their first years of life, needs their parents in order to develop. Without your care and the words or hands to support and calm them down, the child would grow up with irreparable emotional and intellectual deficiencies. It is in the safety, care and stimulation offered by the family that all the child's brain development rests.

Today, mums and dads have more opportunities than at any other time in history to get it right with their children. We have more information, and research about the brain provides us with the knowledge and practical tools that can help our children to fully develop. Unfortunately, we also have more opportunities to make mistakes. The reality is that, in just two decades, the number of children taking neurological or psychiatric medication in the United States has increased sevenfold. This trend continues to rise and seems to be spreading like wildfire through the "developed" world and, today, one in nine children will spend part of their school years under the

influence of psychotropic drugs. The reality is that we have lost the values of children's education, values that science indicates as being fundamental for a balanced brain development. As a consequence, in the fields of education and child development, there is a rise in corporations interested in making money through complex brain stimulation programmes, nursery schools that are capable of creating geniuses, or drugs that reverse the possibility of becoming distracted and improve behaviour. These companies operate under the popular belief that such programmes, stimulation or treatments have a positive impact on brain development. At the other end of the scale there are other theories, where there are parents who rely on a radically natural education, in which the child grows up free from rules or frustration. They are encouraged by studies that show that frustration in a baby can cause emotional problems, that limits interfere with a child's creative potential, or that an excess of rewards can undermine a child's confidence. Both approaches, firstly, that the child's brain is improved through the use of technology and, secondly, that the human being is only able to achieve full development through exploration and free experience, have shown to be incorrect. The reality is that the brain does not work as we would like it to work, nor sometimes how we think it works. The brain works in the way that it does.

Neuroscientists around the world have for decades been trying to decipher the principles that support brain development and what are the most effective strategies in helping children to be happier and to enjoy their full intellectual capabilities. Research on evolution and genetics reveals that, far from being purely kind, human beings have opposing instincts. It is enough to go to a school playground to see how, far from the eyes of the teachers, instincts of generosity appear in the form of altruism and mutual collaboration, but also other negative instincts, such as aggressiveness and domination. Without the support of parents and teachers to guide the child, helping them to meet their own needs within the limits established by respect for others, the child would be lost. We know that our ability to transmit values and culture from generation to generation is what has greatly helped our species to evolve, making us more civilised and supportive – although, in these times, it may not seem this way; it is a job that the brain cannot do on its own and that needs the attentive work of parents and teachers.

Other research on brain development provides data which shows that early stimulation has no impact on the intelligence of a healthy child. In this sense, the only thing that seems to be proven is that, during the first years of life, the child has a greater capacity to develop what we understand as a perfect pitch, or the ability to learn music or a language as if it were their mother tongue. This is not to say that a bilingual school is better than a non-bilingual school, particularly since if the teachers are not native, the child will develop the language with an accent, rather than a perfect pitch. In this sense, it may be more beneficial for children to watch films in

the original version, as happens in other countries, or that they have a few classes a week in a foreign language such as Chinese, but taught by native teachers. Furthermore, we know that programmes like Baby Einstein, or listening to music from Mozart, do not contribute to the child's intellectual development either. A child who listens to classical music can relax, and a few minutes later can perform certain concentration exercises more effectively, but nothing more. After a few minutes, the effect dissipates. We also have strong data that shows that children's exposure to smartphones, tablets and other electronic devices raises the risk of behavioural problems or attention deficit disorders. This data also indicates that the deficit is undoubtedly over diagnosed; in other words, there is a relatively high percentage of children taking psychiatric medication that they do not actually need. The tendency to over diagnose attention deficit is only the tip of the iceberg. Far from taking responsibility for it, pharmaceutical companies merely take advantage of the educational context of many homes. The lengthy working hours, a lack of dedication from the parents, a lack of patience and of limits and – as we have already pointed out – the emergence of smartphones and tablets, seem to be, at least in part, behind the huge increase in cases of attention deficit disorder and childhood depression.

There are countless miracle programmes that promise to develop child intelligence, but as you can see, when these programmes are subjected to scientific rigour, they do not show any signs of efficacy. Possibly the reason for the failure of so many of them is that their main interest is to accelerate the natural process of brain development, with the idea that developing sooner allows you to develop further. However, brain development is not a process that can be accelerated without losing some of its properties. In the same way that a genetically modified tomato, which ripens in a few days and achieves the “ideal” dimensions and colour, loses the essence of its flavour, a brain that develops under pressure, hurrying to skip stages, can lose part of its essence along the way. Empathy, the ability to wait, feelings of calm or love, cannot be cultivated at a greenhouse pace. They require slow growth and patient progenitors who know how to wait for the child to bear its best fruits, just at the moment they are ready to do so. This is the reason why the most important findings in neuroscience regarding the development of the child's brain grind to a halt at seemingly simple aspects, such as the positive influence of fruit and fish intake during pregnancy, and during the first years of the child's life; the psychological benefits of cradling the baby in your arms; the role of affection in the child's intellectual development; or the importance of conversations between mother and child in the development of memory and language, in clear acknowledgement that in brain development, essential elements are crucial.

The truth is that we know many things about the brain that could help parents, but which unfortunately they don't know about. I want to help you understand how you can influence your child's brain development in a very

positive way. There are hundreds of studies that show that the brain has enormous plasticity, and that parents who use the right strategies can help their children have a balanced brain development. This is why I have gathered the fundamentals, tools and techniques that can help you be the best influence in the intellectual and emotional development of your own child. With that, you will not only be able to help them develop good intellectual and emotional skills, but you will also contribute to preventing difficulties in their development, such as attention deficit, childhood depression or behavioural problems. I am convinced that basic knowledge about how a child's brain develops and builds itself can be a great help for those parents who want to take advantage of them. I trust that the knowledge, strategies and experiences that you will find below will contribute to making your work as a parent a deeply satisfactory experience. But above all, I hope that by delving into the wonderful world of the child's brain, you will be able to connect with the lost child within you, and better understand your own children in order to get the best out of each and every one of you.