

Trying Differently: Rethinking Juvenile Justice Using a Neuro-Behavioral Model

By Diane Malbin, David Boulding, and Susan Brooks

A cartoon in a recent issue of the *New Yorker* magazine depicts an attorney meeting with his client in a prison cell. The attorney says, “Great news! We found a syndrome that fits your case like a glove!”¹

Consider the implicit message: Diagnoses are a way to excuse bad behaviors, to avoid responsibility—a license to reoffend. These concerns are consistent with popular values and beliefs and, by extension, interventions. This contributes to shared skepticism that the “pathology du jour” is a way to manipulate the system.

Along with skepticism about excusing behaviors, there is also frustration around “revolving door” clients, who are seen regularly in juvenile and adult courts and jails, and who do not respond positively to current interventions.

This article presents information that is especially useful for judges, lawyers, and other professionals working in the juvenile justice system. It offers an alternative framework known as the *Neuro-Behavioral (N-B) Model*, which explores problems and solutions from a different perspective. Informed by massive amounts of research, it links brain function and dysfunction with behavioral symptoms. The model then applies this wealth of knowledge to ask different questions that lead to more effective strategies and techniques for prevention and intervention.

The following case example is taken from a recent demonstration project in Oregon (led by Diane Malbin) implementing the N-B model with youth in state custody. The story of Fred highlights the differences between standard practice and a neuro-behavioral approach. Part One shows how well-intentioned professionals applied the standard *learning theory*² approach to define Fred’s problem in ways that led to misguided solutions. These failed efforts contributed to frustration, failure, and increasingly punitive and expensive interventions as well as discouragement for everyone involved.

Part Two, which is presented later, illustrates a very different trajectory following the implementation of a neuro-behavioral approach.

Fred Part One

At seven, Fred already had a history of multiple foster care placements and traumatic abuse. His accumulated diagnoses included Failure to Thrive, Post-Traumatic Stress Disorder, Attention Deficit Disorder, Serious Emotional Disturbance, and Oppositional Defiant Disorder. He was further described as explosive, controlling, avoidant, resistant, socially inappropriate, and easily

¹ Lee Lorenz, *THE NEW YORKER*, April 26, 2010, at 61.

² This term refers to a composite of theoretical approaches, including cognitive and cognitive-behavioral theories. Behavioral techniques, which are prevalent in juvenile justice, are based on these theories; yet, neither the theories nor the techniques have been systematically analyzed for their assumptions about brain function and their compatibility with neurobehavioral conditions.

frustrated. Services provided over time had included a classroom aide, individual therapy, behavioral classroom placement, medications, and day treatment. At the time of identification, Fred was in the process of being referred to residential treatment as none of the community-based treatment interventions had stopped his inappropriate behaviors. These failed behavioral interventions had become increasingly restrictive: from verbal warnings, time outs, and other consequences to isolation and physical restraints. He nevertheless had daily meltdowns--temper tantrums resulting in the application of four-point physical restraints at home and in day treatment.

Fred had been given standard academic, intellectual, and behavioral assessments that identified learning disabilities, an IQ of 75, and myriad behavioral problems. This information generated interventions that focused on academics and behaviors. Because he had a history of prenatal exposure to alcohol and positive findings on a neuro-behavioral screening tool, he was provided a multidisciplinary neuro-developmental assessment. This time, his diagnosis was Static Encephalopathy Alcohol Exposed (non-progressive brain dysfunction).

Consideration of Fred's case leads to the following questions:

- What's the brain got to do with it? (Thank you, Tina Turner.)
- What if clients like Fred have brains that work differently?
- What is the N-B model, and how is it different from standard practice?
- What makes standard interventions ineffective?
- What is it like to put the N-B model into practice? Are there strategies and techniques that can work for Fred and countless kids like him that end up in the juvenile justice system?

First, a word on brain function and invisibility: Have you ever considered your own brain function—the complex cognitive tasks your brain performs every day? The answer to this question is probably no, because for many of us brain function is invisible—both physically and conceptually. Now, take a minute to think about your brain. What is it doing? Reading, decoding, formulating arguments, managing emotion, comparing what you're reading with what you know, wondering where all this is going, thinking about picking up the kids or tonight's dinner menu?

Most of us have the luxury of being completely oblivious to our brains, the organ without which nothing is possible. And this obliviousness is precisely the problem. Without awareness of our brains, we do not have a basis for comparison for how our clients' brains may work differently. We proceed on the basis of pre-verbal assumptions that others' brains work pretty much the same as ours.

There lies the fallacy—and a key point of this article. If we can become aware of our brains, perhaps we can begin to comprehend the real issues and to think creatively about workable solutions.

I. Linking Brain Function With Behaviors

Thousands of studies conducted in numerous countries over the last forty years have found that prenatal exposure to alcohol and other teratogens can have a debilitating effect on the developing brain and central nervous system. There are 50,000 teratogens—pre- and/or post-natal agents which can affect development—and factors such as genetics, illness, sustained abuse, anoxia, or head injuries that may affect brain structure and function. *Any one of these may cause the same neuro-behavioral symptoms, so the same N-B principles apply regardless of the cause.* This article focuses on the effects of prenatal exposure to alcohol because of the wealth of accumulated knowledge on this particular teratogen, and the importance of educating advocates, judges, and other stakeholders connected with the juvenile justice system about this issue.

Here's what we know: (Otherwise known as the *Logic Model*)

1. Alcohol kills cells in the brains of developing fetuses. Even paternal alcohol use has been found to affect *epigenetics*, or the expression of genes.
2. Alcohol alters the structure of cells, reducing the number of interconnections among cells. It also affects the design, meaning that it alters how cells communicate. These and other changes affect memory storage and retrieval, processing speed, ability to abstract, analyze, make decisions, and other behavioral symptoms.
3. It follows that since these are *physical* changes, Fetal Alcohol Spectrum Disorder (FASD) is by definition a *brain-based physical disability with behavioral symptoms*.
4. Diagnosis of full Fetal Alcohol Syndrome (FAS) requires alcohol exposure during a very small window of time during gestation—between 18–21 days after conception. Full FAS is associated with particular physical features, such as a thin upper lip with no “cupid’s bow.”
5. Alcohol exposure prior to or after these few days will not alter facial features, although it can cause brain dysfunction. *Those without observable facial features are at greater risk for psychosocial failure since behavioral symptoms of their physical disability are treated as intentional.* No safe lower threshold has been found—meaning that there is no amount of alcohol below which there are no effects.
6. Confusion about the nature of problems is exacerbated by accumulated Diagnostic and Statistical Manual (DSM) diagnoses. These include and are not limited to RAD, ADD/ADHD, PTSD, LD, ODD, Conduct disorder, Speech and Language Disorder, Autism, Bi-polar, and others. The greater the number of diagnoses, the more likely etiology—brain dysfunction—has not been considered.
7. Attempting to change superficial symptoms of an underlying brain-based physical disability will be as effective as forcing the paraplegic to perform a high jump. *Instead of trying harder to change behaviors, we need to try differently.* In the N-B model, behaviors are cues for recognizing the disability. Then, we use a same approach as

would be used for others with more obvious physical conditions: we provide reasonable accommodations.

II. Redefining Behavioral Symptoms

The N-B Model redefines what we often think of as problem behaviors as *symptoms* of the underlying brain-based birth defect. For this purpose, it is useful to categorize behaviors as primary, secondary, and tertiary.

Primary characteristics are defined as those that most clearly reflect underlying brain function or dysfunction. The terms below reflect the category of functioning, and the description tells you what is typical for youth affected by fetal alcohol:

1. *Developmental level of functioning* (also known as Adaptive Functioning): *Dysmaturity* (see below) meaning a developmental level of functioning half the chronological age socially and emotionally;
2. *Sensory processing*: Difficulty prioritizing or filtering sensory input, easily overwhelmed by noises, bright lights, and other environmental stimuli;
3. *Language*: Very slow processing speed, hears every third word of normally-paced speech, and has difficulty comprehending, especially abstract concepts;
4. *Memory storage and retrieval*: Difficulty generalizing. Generalizing is required in order to retrieve information stored in one setting and apply it in another;
5. *Executive functioning*: Difficulty in planning, organizing, predicting, anticipating, initiating, and abstracting;
6. *Strengths*: Many have savant-like abilities in one or more areas, which often mask the severity of symptoms in other areas. This gap may contribute to the perception of greater overall ability and add to the confusion about deficits in other areas. Strengths may be in the areas of artistic ability, and music. Learning strengths may be visual memory, kinesthetic memory and others. Strategies and techniques should build on strengths, rather than deficits.

Secondary behaviors are defined as defensive behaviors that develop over time where there is a chronic poor fit between person and environment. These are normal human responses to pain and distress and are not intrinsic to the condition. They are what would be expected if a blind child were beaten for “refusing” to read the whiteboard and include:

1. Fatigue
2. Anxiety, low self esteem, social isolation, self-destructive behaviors
3. Avoidance, frustration, anger
4. Aggression, destructiveness
5. Depression, suicidal thinking or action
6. Feeling overwhelmed

Tertiary problems are now understood as the net effect of a chronic poor fit and patterns of secondary defensive symptoms:

1. Trouble in school, suspensions, expulsion or dropping out
2. Mental health problems: Accumulated DSM diagnoses, failed therapies and programs
3. Arrests, court appearances
4. Alcohol, drug involvement
5. Trouble at home
6. Social services involvement

III. The N-B Model And How It Differs From Standard Practice

The N-B model redefines problems and solutions in a manner consistent with research. It shifts the focus from superficial symptoms to underlying causation, and also reframes perceptions of problems. As a result, the N-B model generates more effective interventions—from trying to change the person to *achieving* changes by providing appropriate accommodations and building on strengths.

Current practice in juvenile justice (and elsewhere) defines the problem as the young person's behavior. From this premise, it follows that solutions target the behavior for change. When these strategies and techniques fail, they are interpreted as that youth's failure, lack of motivation, or unwillingness, or as parental failure. *Where there is failure, frustration and blame, there is usually missing information.* Neuro-behavioral theory recognizes behaviors as cues for exploring underlying causation. The difference—which is pivotal—is that one targets superficial symptoms for change, while the other recognizes causation.

The starting point for the N-B approach is factoring in brain function and dysfunction; *brain trumps behaviors*. This does not require a degree in the neurosciences; it requires different questions.

IV. What Makes Standard Interventions Ineffective

Current practice is based on the deeply rooted beliefs, values, and principles we refer to as *learning theory*. A basic tenet of learning theory is that all of us are capable of learning from our mistakes once we become aware of them. This belief about behavior is so familiar, and so widely shared, that it is invisible, preverbal. When there is a clash between closely held expectations and neurobehavioral symptoms, the first reaction is often emotional: feelings of distress and discomfort, even anger, are typical. Such reactions are useful if they can help us to re-examine our value systems in light of new information.

We can examine the clash between our beliefs and values and the real science of brain-based disabilities by using the example of one of the primary characteristics of neuro-behavioral disorders: dysmaturity. This is distinct from immaturity, which suggests that increased skill-building will allow the young person to function in an age-appropriate manner. Dysmaturity means that the developmental time frame will have to be greatly expanded. Meanwhile, the

reigning values and expectations are that *appropriate* behaviors be more or less consistent with chronological age. “Act your age,” “be independent by eighteen,” and “be socially appropriate,” are all age-based expectations. So, when the seven-year-old is still engaging in a toddler’s parallel play, he is seen as being socially inappropriate. When the fifteen-year-old is not following through on directives, he is seen as irresponsible. What if he is actually a competent six-year-old in a fifteen-year-old body? The interpretation generally assigns willfulness to behaviors. When behaviors deviate from *our* expectations, the logical extension is to try to change the behaviors using all of the typical behavioral methods currently available.

A similar analysis applies to secondary behaviors, such as tantrums, aggression, shut down, anxiety, depression and others. Young people with brain-based disabilities are being asked to do something that is not an option for them—they would if they could. These expressions of frustration are indicators of a poor fit between expectation, intervention, and ability. Secondary behaviors do not develop unilaterally; they are shared by children, parents, and professionals. The downward spiral is in place; secondary challenging behaviors are then seen as being the problem and are themselves targeted for change using variations on the theme of behavioral interventions.

Yet these learning techniques have remained unexamined for their assumptions about brain function. We need to ask the following: In order for standard techniques to be effective, what does the brain have to be able to do? An analysis at this level helps clarify the gap between assumptions and reality.

Consider the common strategies:

- Cognitive behavioral
- Consequences
- Level system, token economy
- The “Look”: non-verbal hints, body language, and other cues used to change behaviors
- Therapy
- Time out, suspensions, probation, detention

In order for these to work, to yield expected and sustained changes in behaviors, what does the brain have to be able to do?

The following briefly explores the brain function required to benefit from being talked to and compares those requirements with research findings on what affected brains are actually able to do:

Learning theory-based assumptions:

Process language quickly
Store in memory, integrate information
Form associations, conceptualize
Abstract
Retrieve from memory, generalize
Flexible, adaptive

Possible neuro-behavioral symptoms:

Process slower (thinking, hearing)
Problems storing, retrieving information
Difficulty forming associations; has gaps
Literal, concrete learners; difficulty abstracting
Need re-teaching, difficulty generalizing
Rigid, difficulty shifting set

Predict, anticipate
Congruence between words, actions
Understand and comprehend

Difficulty predicting, anticipating outcomes
Disconnections; may say one thing, do another
Grasp pieces, rather than concepts

Of course, not all young people have difficulty in all areas. The question is how effective the technique would be even if the young person only had difficulty in two or three areas. The alpha and omega of most strategies is language. And that is a problem for young people with difficulty processing and comprehending language, which is by definition abstract.

We need to consider the cognitive requirements for standard approaches currently used in the juvenile justice system. How many of these approaches have been examined for their assumptions about the brain, or its theoretical foundations? The problem is that learning theory-based behavioral techniques are applied in all systems, which may help explain chronic failures across systems.

This is not to find fault or assign blame. It is to support exploration of the current limits of practice, program design and policy in view of existing research and emerging best practices based on a neuro-behavioral construct. Armed with this type of intellectual curiosity, juvenile justice professionals can become more proactive, and can be open to a wider range of more effective options.

The second part of Fred's story illustrates what can happen when we try differently.

FRED Part Two

Fred's neurobehavioral assessment found the following:

- ✓ Significant dysmaturity: At seven, he was functioning developmentally as a competent three-year-old;
- ✓ Memory problems: He had difficulty storing and retrieving information, forming associations, and generalizing;
- ✓ Slow auditory and cognitive processing speed: He heard every third word spoken to him; it took him longer to understand directions and finish assignments;
- ✓ Rigidity and perseveration: He had difficulty stopping an activity and was unable to shift gears; he would become frustrated or combative when forced;
- ✓ Significant difficulty comprehending language-based communication: He had poor short-term auditory memory; he could complete one direction of three;
- ✓ Significant sensory issues: He was easily overwhelmed, easily over-stimulated, easily fatigued, and slow to settle.

As the source of Fred's primary and secondary symptoms were identified, different interventions became obvious:

Dysmaturity: Once Dysmaturity was recognized, instead of continuing to be punished for socially inappropriate behaviors, expectations were adjusted to be developmentally appropriate.

Memory problems: His “intentional” rule-breaking was reframed as a memory problem. He remembered a rule in one setting but was not able to retrieve and apply it in another. Once this was recognized, adults knew to re-teach him each rule in different settings in order to prevent problems.

Slow auditory pace: Understanding his slow auditory and cognitive pace explained his agitation when too many words were used. Recognizing his slow pace and language processing problem, instructors slowed down and used fewer words. Fred had fewer problems.

Rigidity and perseveration: Fred’s slower processing pace often meant he did not finish tasks on schedule. When he was interrupted, he would resist and have tantrums, which were seen as controlling and oppositional behavior. Because he had the diagnosis of Oppositional Defiant Disorder, a treatment goal was compliance. The treatment therefore was “do what I say, now,” which only exacerbated Fred’s resistance. When adults understood his need to finish as symptoms of rigidity and perseveration, they accommodated by reducing the amount of work so that he was able to achieve closure in the time allotted. Temper tantrums and four-point restraints ended.

Language-based communication problem and poor short-term auditory memory: Adults were frustrated by Fred’s failure to follow through on directions. Originally viewed as noncompliance, this behavior was reframed as incompetence, and accommodations were developed such as giving him only one short directive at a time.

Sensory integration dysfunction: Both home and treatment environments were highly stimulating. Fred was overwhelmed by sensory input resulting in his becoming fidgety, overactive, exhausted, and prone to tantrums. Rather than insisting he sit still and pay attention when he was over-stimulated, he was provided with breaks and opportunities to move and to regroup. Classmates were taught that fair is not “same.”

As team members explored the fit between Fred and his environments, they recognized that although certain settings, goals, expectations, and techniques might be appropriate for other children, the fit was poor for Fred. One staff person said, “We have to rethink our program. We’re required to write treatment plans with age-appropriate treatment goals. These goals are clearly unrealistic given his developmental level of functioning and need to be rewritten to reflect his actual developmental ability.” They negotiated changes with administrators and implemented accommodations recognizing Fred’s developmental level of functioning.

Fred’s strengths were also identified—friendliness and cooperation, good visual processing, contextual and experiential learning—and his behaviors were reframed in a manner consistent with the brain damage Fred had as a result of having FASD. As adaptations were provided, power struggles decreased at home and during treatment.

There was an almost immediate reduction in frustration for Fred and the adults in his life. Within a week there were no more four-point restraints; his placements at home and day treatment stabilized. He was no longer being considered for residential treatment. Parents and

staff were less frustrated, and accommodations that prevented problems were more consistently applied.

Implementation of the neuro-behavioral construct was achieved by understanding Fred *differently* and applying the same principles as those used with people with more obvious physical disabilities. The necessary steps to apply the neuro-behavioral construct are to recognize the nature of the condition, identify strengths and learning abilities, and provide appropriate accommodations in all settings to prevent problems and improve outcomes. In Fred's cases this approach has reduced problems, reduced the need for multiple expensive resources, and prevented waste in human and economic terms. This has been the case for many others as well.

V. How We Can We Do It Differently: Setting Up The External Brain

Here are three additional stories gleaned from David Boulding's own practice and from his encounters with enlightened judges. Each demonstrates a concept developed by Dr. Sterling Clarren, a renowned expert on FASD, which he fondly called the *external brain*. Because individuals with brain-based birth defects are missing brain cells, effective prevention and intervention requires that caring professionals, as well as friends and family, organize themselves as informed, caring networks that can functionally replace the missing cells and effectively adapt environments to the person, rather than the usual and predictably unsuccessful expectation of doing the opposite.

The specific strategies and techniques illustrated by these examples are not intended as a cookbook recipe. Rather, they demonstrate, as creative applications of the N-B approach, that effective solutions may well be simple, and easily available. The key is to begin by seeing the brain in front of you.

❖ Donald the Dog Walker

Donald had a long criminal record for mischief and minor assaults. All of his convictions seemed very much like first time offenses—except there were twenty-five of them. He did not get social cues or understand much in social interactions. A number of his convictions resulted from outbursts in public places such as department stores.

The judge had seen Donald several times and had heard plenty about his temper, his frustration, his not fitting in, and his not changing as a result of jail. After considering many other options, he sentenced Donald to a year of probation, with the main condition that he go to the local humane shelter to walk dogs.

Upon Donald's arrival at the shelter, things began to change for him. He walked dogs from nine to five, Monday to Friday. There he found for the first time uncritical love in masses of adoring dogs who wanted to get out and walk. Donald loved dogs and the reciprocal energy was life altering. Also at the shelter, several older gentlemen noticed that Donald had other problems. These gentlemen helped him with his shopping and getting to his probation appointments.

His two most grievous offenses, said the judge, were failing to appear in court when ordered and missing probation appointments. The retired fellows kept him on a short leash (pun intended) by making sure he kept his probation appointments and accompanying him to the stores where he used to get into trouble. The success was an end to his criminal behavior because his committee helped him where he needed help, while the dogs gave him reason to live and to keep going to the pound.

❖ **Rapid City Roy**

This young man was a drug mule, a willing accomplice for all kinds of minor crime. For example, he was once asked to go behind the drug store at 11:30 p.m. at night to help load some boxes. He said okay.

He had few friends. He would carry the dope for dope dealers and deliver the money faithfully. A probation officer decided to do something differently. She changed his probation order to “you must be home every night by 7:00 p.m.”

Then she took a copy of the order and a photo of him to all his usual haunts—the video arcade for example—and showed a copy of the order and photo to everyone there. This process took a couple of weeks. She asked the staff of the various commercial establishments to help her and to help him by making sure he followed the order.

So, now the stores and video arcades remind Roy when it is 6:45, and he is home before 7:00 p.m.

His participation in crime plummeted.

❖ **Arctic Allan**

A judge in the Canadian sub arctic had a fellow who was more than a pest. Nothing seemed to work. The judge, in his seventies and working part-time, had learned about fetal alcohol and made the following probation order:

“Every time you see Ms. Smith you must tell her **SOMETHING GOOD YOU HAVE DONE TODAY.**”

Ms. Smith is the community probation officer, court worker, police liaison, and the general professional in this small remote community tasked with “dealing” with Allan.

The judge explained to Allan that the good deed could be as small as smiling at one of the older people in the community. It could be shoveling snow. It could be helping someone feed their dogs, or anything else that was good.

The judge reports they have had few if any more problems with Allan. It appears Allan is trying hard to always have something good to say, as the community probation officer sees him about three times a week around town—not in her office. And it seems others in town have caught on and are now ask Allan the same question. The involvement of the probation officer as a talking

partner—not as strictly as a source of discipline—seems to have triggered something in Allan’s limbic system and he is no longer as obstreperous.

Concluding Thoughts and Questions

Whether our primary concern is providing effective representation of young people in the juvenile justice system or protecting the public, we must do something differently, because what we are doing is not working.

The focus cannot be on changing *them*. Instead, it is we who must change—we must reconfigure the world around these young people, the families, friends, and helping professionals in their lives—to replace the brain cells that they lack through no fault of their own. As one parent said, “It would be so easy if my daughter had a missing arm. Everyone could see her disability. I get it now. *She* has the disability. *I* get to do the changing.”

Questions we anticipate you might ask, with our responses:

- *Won’t this approach be too risky in terms of our need to protect the community?* Community safety will only be improved if we find more *effective* ways to address problems in behavior; we know that what we’ve been doing until now has not worked.
- *Won’t it cost too much?* What is more expensive in human and economic terms—“kiddie prison” or preventive support and appropriate accommodations? The current juvenile justice system (and adult criminal justice system) create immense and indeed, immeasurable costs. These costs include actual dollars invested in what is often referred to as our “prison industrial complex.” They also include the untold social and emotional costs to the affected youth, their families and communities, and our society as a whole, from perpetuating an unworkable model.
- *Won’t a lot of kids just try to manipulate the system: how do you know if the underlying cause is truly brain dysfunction?* The N-B approach requires use of a different assessment protocol, including identification of particular flags, and if enough flags are present, application of a Neuro-Behavioral Screening Tool. (For additional information or to access the screening tool, please contact: dmalbin@fascets.org.)
- *How can we expect the juvenile justice system to fix these kids if, as you say, this is a much bigger social problem?* Of course, the juvenile justice system can’t be the whole answer. By adopting this approach, it can potentially become part of the solution, and can begin to influence other systems. The goal is to for juvenile justice to contribute to establishing and sustaining *informed* systems of care and to work toward prevention.

Other Questions to Consider:

- *How can we create positive interventions that lead to better outcomes for young people and their communities?*

- *How can we educate judges, other lawyers, police, probation, and residential facility/prison staff about young people with brain-based disabilities?*
- *How can we learn to see the brain of the client and notice our assumptions about brains?*
- *How can we distinguish between primary disabilities and secondary disabilities?*
- *How can we show the system that a different approach is worth a try?*
- *How can we reduce the daily stress experienced by all juvenile justice professionals?*
- *How can we create a sense that all of us in the system have made a lasting contribution to improving the well-being of youth while enhancing public safety?*

We suggest that many of the answers can be found in modern brain theory. Embracing this scientific knowledge means we need to rethink our assumptions, our expectations, and even our values, in light of what we now know about the differences between our brains and the brains of many of the youth we encounter every day in the juvenile justice system. Just as we would not expect a young person who is blind to read a white board, we cannot expect a young person with FASD or other brain-based disability to learn from his mistakes or from standard behavioral interventions.

Ironically, trying differently may actually be *simpler*. Of course, simple does not mean simplistic or easy. The work is changing our thinking. Yet, simple solutions may well be less costly in dollars and cents, and, perhaps more importantly, may ultimately succeed in a similar way as they did for Fred.

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