

THE PHYSICS OF AUTISM



- **Particles that Matter**

- How can providers identify the particularities of a client in the Autistic Spectrum?
 - Quantum physics is the study of the behavior of matter and energy at the molecular, atomic, nuclear, and even smaller microscopic levels. In the early 20th century, it was discovered that the laws that govern macroscopic objects do not function the same in such small realms.
 - ASD translation: The Autistic Spectrum is a world that does not obey the laws of the Neurotypical world

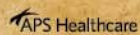


Neurotypical World is social

ASD world is singular



WWW.FOTOBANK.COM DV04-9624 Digital Vision
Six People Sitting Together on Leather Sofas



June 17, 2010



Within The Microscopic World of ASD

INDIVIDUALS IN THE AUTISTIC SPECTRUM HAVE UNIQUE CHARACTERISTICS (just like our world). DIFFERENCE IS THE LAWS THAT APPLY TO THE TWO WORLDS.

AUTISM

Persons with autism may possess the following characteristics in various combinations and in varying degrees of severity.



Quantum Physics vs. Classical Physics



Quantum Physics:

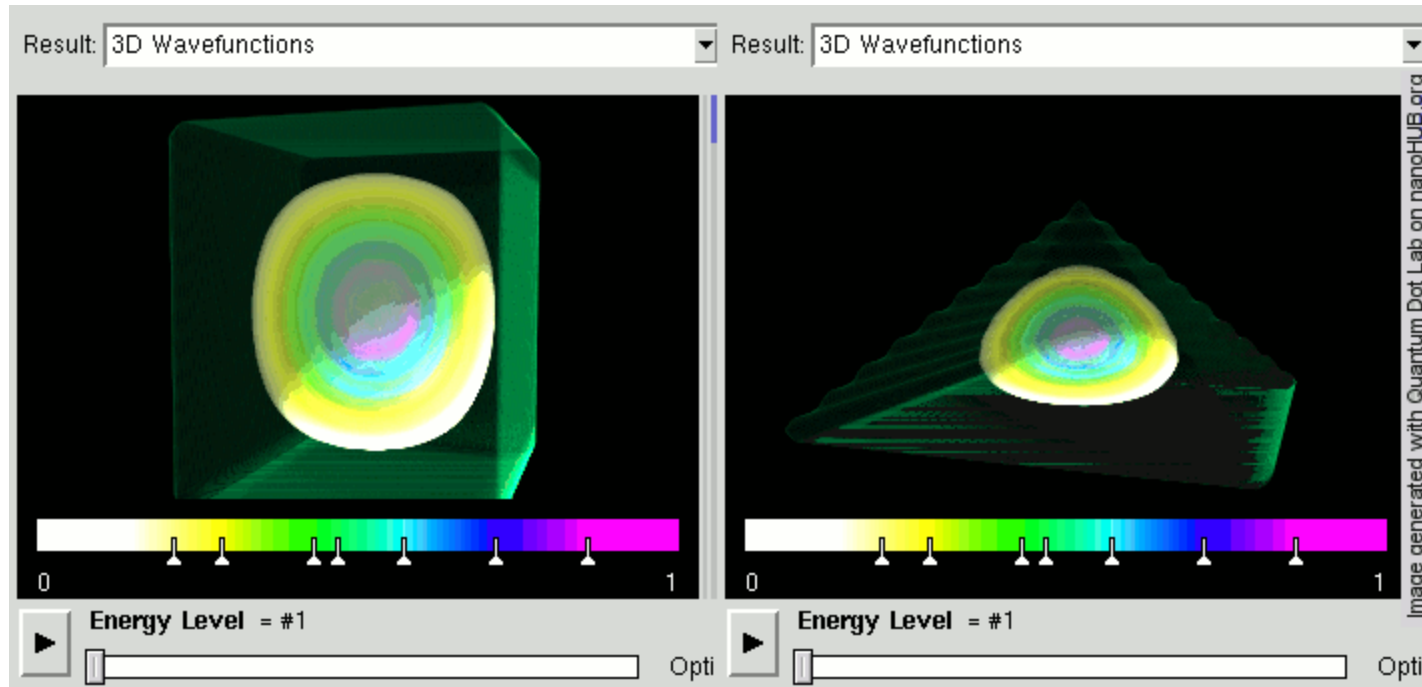
The seemingly exotic behavior of matter posited by quantum mechanics and relativity theory become more apparent when dealing with extremely fast-moving or extremely tiny particles

Translation: *Inside the Autistic Spectrum everything is different. It is a very small world and the laws that apply to the Neurotypical World do not apply in the Autistic Spectrum. As a provider, your predictions of what could and should happen are likely flawed by your experience in the neurotypical world. ASD is a microscopic world.*

The laws of classical Newtonian physics remain accurate in predicting the behavior of large objects.

Translation: *The Neurotypical World is predictable because you, as a provider, have likely been in that world all your life. You know what to expect and how to predict.*

PHYSICS TEACHES US THAT:



THE BEST WAY TO GET CLASSICAL AND QUANTUM PHYSICS TO OPERATE UTILIZING THE SAME LAWS IS TO SLOW EVERYTHING DOWN

AUTISM IN SLOW MOTION



Autism is a COMMUNICATION DISORDER

- Communication is transferring information from one entity to another.
- Speech is a sub-component of Communication.
- Communication is a two-way and sometimes multiple way transaction (particles bouncing EVERYWHERE)

SLOW IT DOWN



Western Department of Mental Health
and Substance Abuse Services

APS Healthcare



June 17, 2010



IN THE AUTISTIC SPECTRUM

AUTISM

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HOW MANY OF THESE CHARACTERISTICS ARE DUE TO ERRORS IN COMMUNICATION??

Communication 101



- As a provider, you probably talk too much.
 - It helps to use short, concrete statements
 - Don't try to offer a long abstract explanation
 - » Learn your client's obsessions.
 - » Use your client's obsessions.
 - » "Thomas the Train takes turns."
 - » "Your brain is like a computer"
 - » "Don't hit or they will hit you back."
 - » "When people smile, smile back."
 - » "Show me "smiling."—great job of smiling
 - » Communication problems cause "melt downs"

Was Newton “Asperger’s Syndrome?”



ISAAC NEWTON, AUTISTIC????



Threatening my father and mother Smith to burn them and the house over them.

Newton's father was a wealthy farmer who could not sign his own name.



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Newton, the Student



He seems to have shown little promise in academic work. His school reports described him as 'idle' and 'inattentive'

He was taken away from school but showed he had no talent or interest in managing the family estate

In his young life, he suffered 2 “nervous breakdowns” and was known to have temper fits and would go into “rages.”

Had no early training in mathematics or physics; yet, went to Trinity College, Cambridge. Read a book in which he read one phrase that propelled his curiosity into mathematics. *“he read that parallelograms upon the same base and between the same parallels are equal.”*

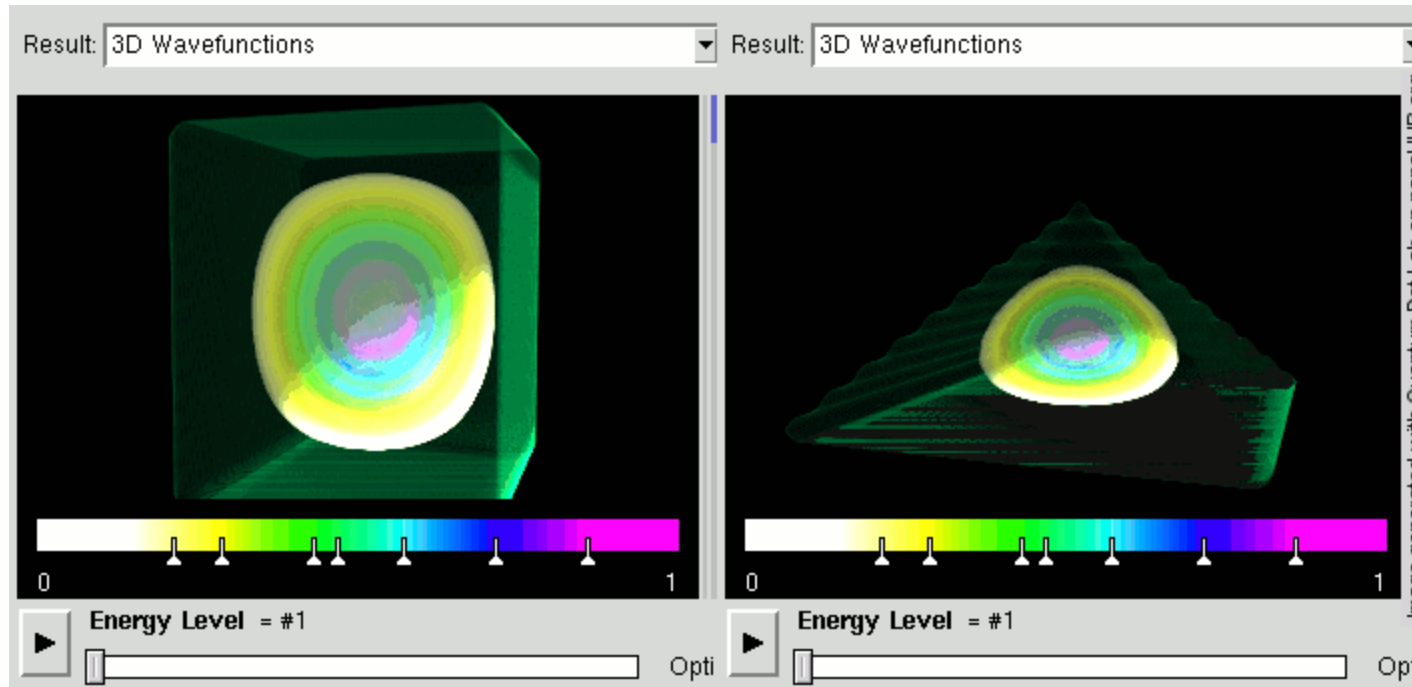
What Matters



- HIS ATTENTION, ONCE CAPTURED, WAS
- INTENSE
- OBSESSIVE
- VISUAL IN NATURE
- CONCRETE
- QUANTUM FOR HIS TIME
- SAFE IN ONLY 1 WORLD
- USEFUL TO BOTH WORLDS



CLIENTS WITH ASPERGER'S LIVE IN BOTH THE NEUROTYPICAL AND ASD WORLDS



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WHAT MATTERS



THOSE WITH “ASPERGER’S DISORDER” OFFER US AN INTERMEDIARY BETWEEN THE NEUROTYPICAL WORLD AND THE ASD WORLD

TEMPLE GRANDIN



HER HUG MACHINE TEACHES US THAT IN THE ASD WORLD, SOME CLIENTS MAY SEE RESTRAINTS AS A REINFORCER.

WHAT MATTERS: “IF I SLOW DOWN, I CAN SEE INTO MY CLIENT’S WORLD INSTEAD OF INSISTING THEY SEE MINE!”

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SLOW IT DOWN





COMMUNICATION MATTERS

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MOTIVATION MATTERS

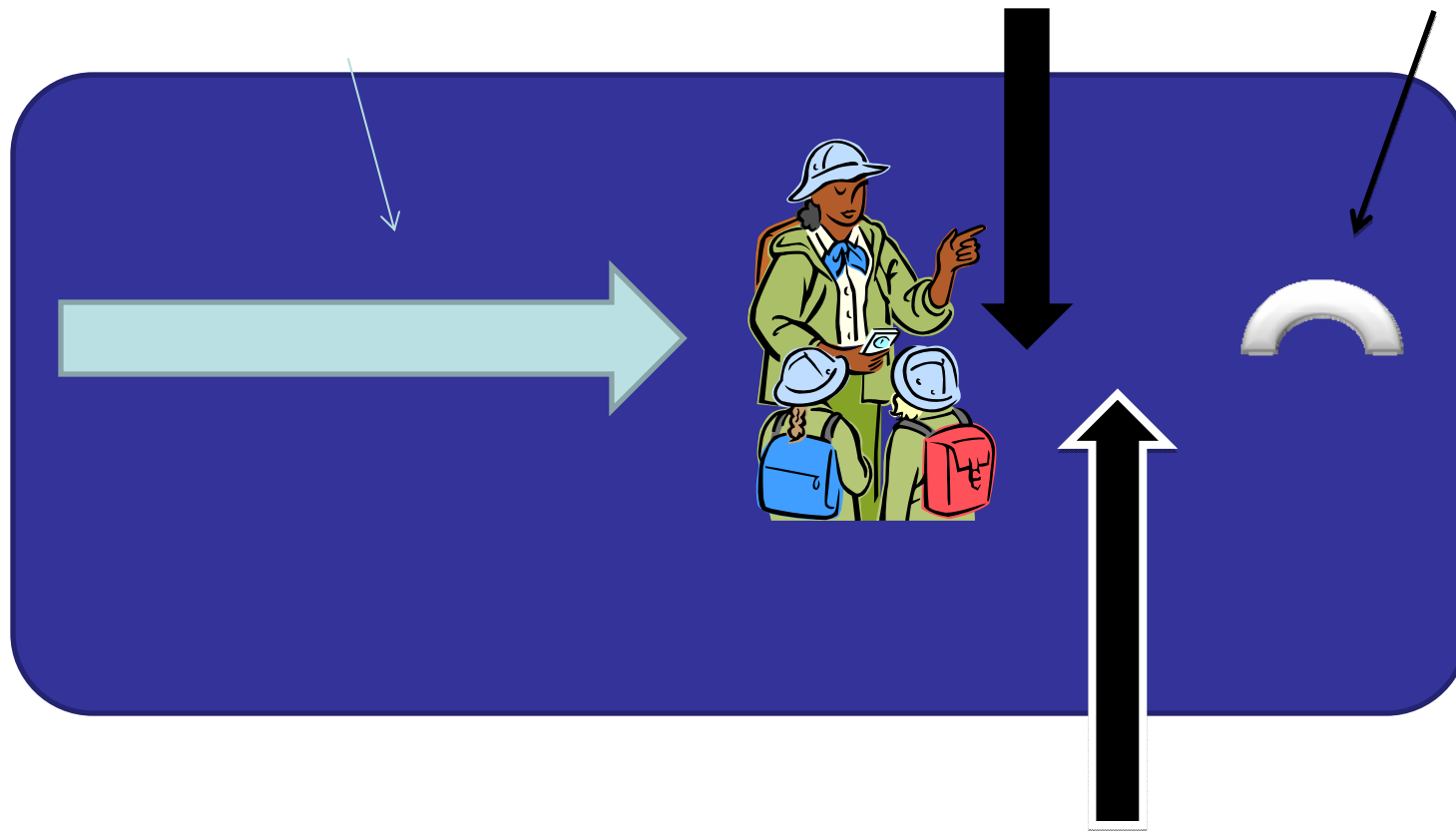


- Motivation is Goal Directed (or Driven) Behavior:
- To Get Reinforcement →
- By Sensory Stimulation →
- To Escape →
- What Does Behavior Do? It functions to:
 - Get you something
 - Get you out of something
 - Postpone something

PARTICLES OF MOTIVATION



- GOAL DIRECTED BEHAVIOR + or -- valence



The Goal Has To Have + Valence



- MOTIVATION AND REINFORCEMENT GO HAND IN HAND

Day is Hot, Dog is Hot
Dog likes Water,
The feel of the water
alone is reinforcing
(sensory motivation)



WHAT MATTERS:



- IF DOG DOES NOT LIKE WATER [If he is not motivated by that particular sensory experience]

Day is Hot. Water has a [– negative valence]



I'm Not Going



MOTIVATION MATTERS



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THREE PRINCIPLES MATTER



- COMMUNICATION
- MOTIVATION
- REINFORCEMENT



Antecedent—Behavior—Consequence.



Simply Put:



- I SEE LOTS OF ANTECEDENTS
- I SEE LOTS OF BEHAVIORS
- I SEE LOTS OF CONSEQUENCES
- I DON'T SEE MUCH REINFORCEMENT

REINFORCEMENT



- NEUROTYPICAL

1-Built from concrete to abstract

2-Built from primary to social

- AUTISM

1-Everything in quantum land is concrete

2-Social reinforcement is hard to establish because a lack of social understanding is part of the physics of autism.

REINFORCEMENT IN PERSPECTIVE



- **PARTICLES THAT MATTER**
 - REINFORCEMENT IS CRITICAL TO BUILDING SOCIALLY RELEVANT BEHAVIORS
 - REINFORCER USED HAS TO HAVE VALUE TO YOUR CLIENT
 - TO ESTABLISH A BEHAVIOR THE REINFORCER HAS TO BE GIVEN CONTINUOUSLY AND IMMEDIATELY UNTIL BEHAVIOR IS ESTABLISHED.—WITHIN A FEW SECONDS

AFTER THE BEHAVIOR IS ESTABLISHED



- YOU CAN SHIFT TO A REINFORCEMENT SCHEDULE.
- SHAPING AND CHAINING BUILD CLOSER AND CLOSER APPROXIMATIONS TO THE BEHAVIOR YOU WANT TO ESTABLISH

PARTICLES THAT MATTER



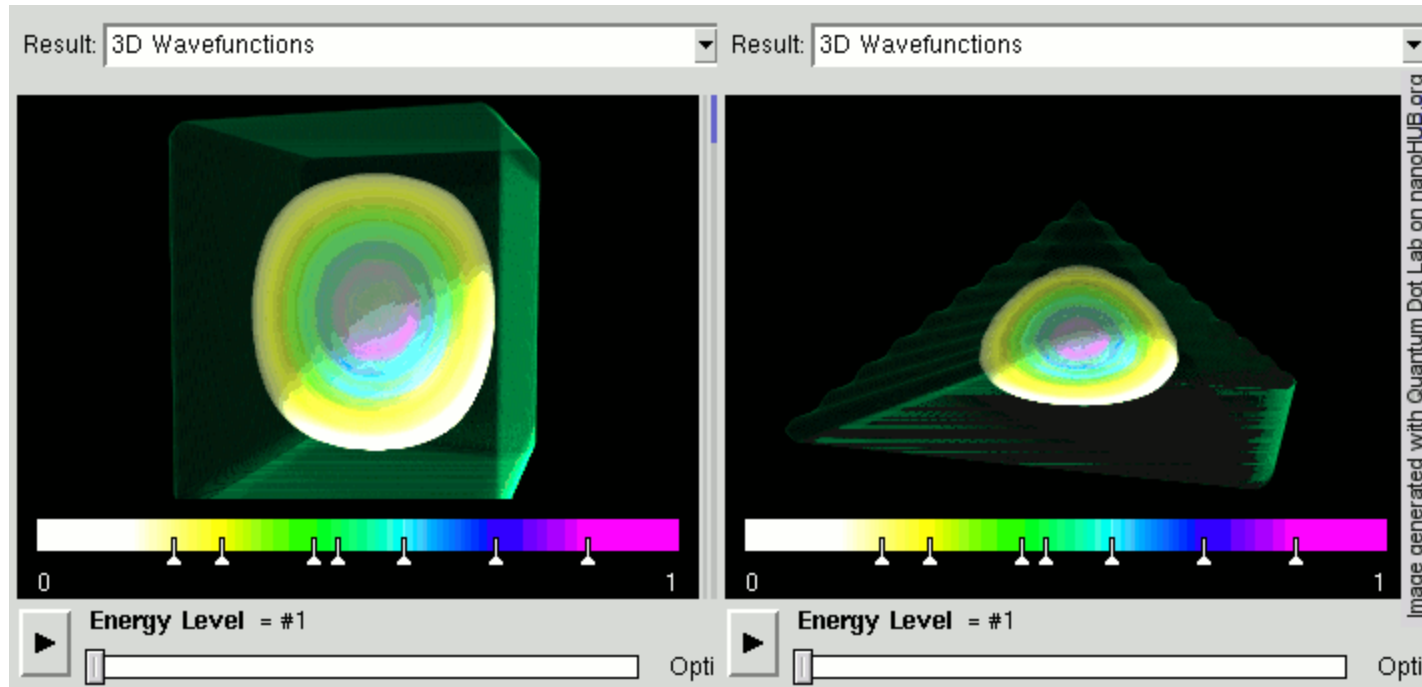
- YOU CAN NOT EXTINGUISH (GET RID OF) AN UNDESIRABLE BEHAVIOR UNLESS YOU REPLACE IT WITH AN INCOMPATIBLE BEHAVIOR
- REINFORCEMENT OF THE BEHAVIOR YOU ARE WANTING IS A COMMON LANGUAGE IN BOTH NEUROTYPICAL AND THE QUANTUM WORLD OF AUTISM

The Physics of Autism—What Matters



- **Communication-- SLOW DOWN and analyze comm. between the 2 worlds.**
- **Motivation is harder to see in the quantum world of autism UNLESS you slow it down.**
- **Reinforcement is the key to establishing socially relevant behaviors –(behavior THAT IS IMPORTANT not just convenient for others). SLOW DOWN & WATCH WHAT YOU ARE REINFORCING.**

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