
interactive metronome
JAMES F CASSILY
Founder, IM Training
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THE TIMEDOC

JAMES F. CASSILY

up to 1999

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SUMMARY

A record of over 25 years of accomplishment in the corporate, finance, supervision, trade show, product conceptualization, development and launch, manufacturing, patent procurement and protection, out-sourcing, subcontracting, offshore manufacturing, marketing, domestic and international distribution, environmental, investment, taxes, international agreements, trade exchange, communications, political lobbying and regulatory permit arenas.

Extensive experience in all accounting functions including: business plans, private placement memorandums, financial reports, balance sheets, profit and loss statements, taxes, operating budgets, sales analysis and profitability studies. Strong contacts and capabilities in the political, regulatory and government contract arenas. Years of hands-on legal experience working with such firms as Dykema, Gossett, Spencer, Goodnow and Trigg (Detroit); Morri, Robinowitz & Anderson (Imperial legal firm, Tokyo); Warner Norcross & Judd (Grand Rapids), Everette Casey (Patents, Orchard Lake) and Owen Sloan Assoc. (L.A./N.Y.).

Areas of Major Accomplishment

Industry Launches

Recognized for pioneering three new industries worldwide, private satellite television, broadcast / recording psychoacoustic audio signal processors and accretion based coastal expansion technology.

Business and Financial Plans

Developed and executed long and short term formal business plans, private placements and accounting functions for companies in the start-up, growth, maturity and turn-around stages of development.

Manufacturing

Product conceptualization through distribution. Directed manufacturing operations including design, prototyping, sourcing, inventory control, in-house assembly, subcontracting and transportation.

Off-Shore Manufacturing

Successfully negotiated and secured off-shore manufacturing, licensing and trade exchange agreements in European and Asian countries.

Marketing, Sales and International Distribution

Installed market planning functions, worked closely with engineers, designers and product planners in determining product life cycles, market roll-outs, competition analysis and engineering support to sales. Established and directed successful international distribution networks covering 22 countries as well as domestic networks covering the U. S. and Canada.

Trade Shows, Publicity and Advertising

Successfully directed and organized over 30 international trade show presentations at Consumer Electronics Shows, Nat'l. Assoc. of Home Builders Shows, Auto Engineering Shows, Nat'l. Assoc. of Music Merchants Shows, Audio Engineering Society Conventions and Boat Builders Shows. Featured speaker at national shows, conventions and symposiums. Established long term relationships with writers, publishers, reviewers and editors of professional trade and consumer magazines. Generated over 60 favorable articles on company products in a one year period. Advertising, conception through placement.

State and Federal Gov. Liaison

Drafted bills and secured legislation and regulations favorable to certain industries. Secured major government grants, contracts, pilot projects and studies. Filed, appealed and secured Federal and state regulatory permits. Lobbied European Economic Council and Asian governments to support international policy and regulatory changes pertaining to certain industries.

Senator Robert Kennedy - Midwest Advance Team - 1967 through June 8, 1968

Cass Productions 1968 to 1979

Record production, engineering, artist management and promotion. Produced charted albums for Atlantic, Warner Brothers, Westbound, Capital, Columbia and other record companies. During the Detroit/Ann Arbor political music heyday was involved with a wide variety of artists such as Teegarden & VanWinkle (Atco), Bob Seger, Destroy All Monsters (The Stooges), Motor City Mutants and also R & B groups such as Ohio Players and Funkadelic. Designed and operated A-Square Recording Studios in Ann Arbor, MI.

EXR Corporation, President & CEO 1978 to 1985

Designed, manufactured and marketed psychoacoustic audio processing equipment for use in recording and broadcasting industries in 22 countries. Products included *The EXR Exciter.* Achieved number one market share in product category, worldwide. Worked with top artists, producers and engineers in over 200 recording studies worldwide, demonstrating use of products (primarily on final mixes).

Third Wave Communications, Founder & Chairman 1978 through 1983

Developed and introduced first integrated private satellite television reception system to be displayed at an International Consumer Electronics Show - June 1979. First TVROs awarded admission to CES International Design and Engineering Exhibitions - 1980 & 1981. Satellite industry spokesman at trade shows, legislative hearings and media. Successfully lobbied Federal Communications Commission Chairman Senator Barry Goldwater into dropping mandatory licensing requirements for private satellite reception equipment (TVRO) ownership. Negotiated first consumer use licenses for satellite broadcast programs with Ted Turner (CNN & TBN) and Pat Robertson (CBN).

Introduced MTV satellite music concept to professional recording industry in a Audio Engineering Society demonstration suite at Waldorf Astoria convention.

Direct Broadcast Cable (DBC), Chief Operating Officer 1983 through 1985

With partner Andre Blay (founder of Magnetic Video and inducted into the Video Hall of Fame as "the pioneer" of the home video movie industry) introduced the first privately owned interactive mini-cable systems to small communities and the hotel/motel/apartment industry. Launched concept of pay-per-view addressable cable television. (Shortly after he won his non-competition suit against CBS-Fox, DBC was disolved so that Mr. Blay could become head of Avco-Embassy Video.)

Conceptual Engineering Corporation, President and CEO 2/83 to 9/87

Introduced new high tech audio and video electronics concepts and products to OEM auto, boat, special vehicle and architectural industries. Negotiated product development / supplier contracts with GM Corp., Ford, Cars & Concepts, Greenwood Automotive, Chris Craft / Murray Yachts, Holiday Inns, JBL, Crown, Kenwood, etc..

Coastal Environmental Consultant and Activist 1985 through 1992

Consultant specializing in coastal environments. Coastal issues advisor to Great Lakes & Atlantic coast governors, U.S. Congressmen and Senators. Formed and directed Great Lakes Coastal Research Center.

Kinesthetic Training Systems 1989 - Present

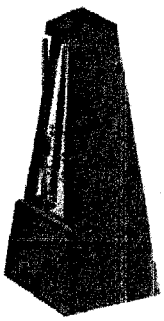
Designed, produced and field tested world's first interactive metronome (patents pending) and developed training method for helping children with debilitating motor skill impairments and afflictions.

Education -Western Michigan Univesity, Kalamazoo MI - Marketing & Psychology

Professional References -

Andre Blay, Beverly Hills CA, Governor John Engler, Lansing MI
Ted Turner, Atlanta GA

My name is Jim Cassily. The very special kids I work with gave me the nickname "Timedoc". I invented and patented the world's first physically and aurally interactive metronome. It is trademarked under the name Interactive Metronome®.



The original purpose of the (Win95/98) PC-based, Interactive Metronome was to help athletes and musicians improve their timing, rhythmicity, coordination and focus.

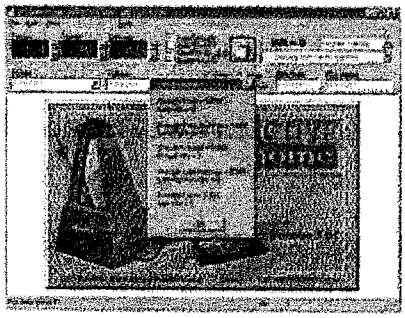
However, it was quickly discovered that training with this physically and aurally interactive version of the traditional metronome yielded unprecedented improvements in children with debilitating cognitive, as well as, physical based disorders. Two directional goals were immediately set and have been maintained ever since.

Goal One - Bridge the gap between new high tech brain research and practical application

Shortly after witnessing the unexplainable dramatic positive "effect" IM training consistently had on children, I realized that there was a major responsibility inherent in such an obviously important discovery. In the fall of 1999, after seven years of research, development, testing and documentation, the Interactive Metronome was made available for the first time to qualified teaching and training professionals.

A rapidly growing number of IM providers are now personally witnessing the unprecedented effect this new educational tool has on children (and adults) with special needs. Consequently, there is a steadily growing optimism that IM Training will help special kids have a more equal opportunity to become productive and happy citizens.

Some now believe that, since IM Training also benefits "gifted" individuals, it will likely raise the performance "bar" in sports, dance and music to new heights of artistry and consistency. However, as the inventor, I am personally dedicated to helping special kids have the opportunity to "catch up" before IM Training is formally introduced into broader "normal population" based markets.



Goal Two - Fill an important assessment need

There is an immediate need for an accurate, objective and affordable means of assessing and correcting children's fundamental learning capabilities before related learning problems lead to school failure, negative self-images and societal misconduct. The Interactive Metronome assessment capabilities are currently undergoing documentation and standardization. Upon completion of this ongoing process, a new stand-alone Interactive Metronome Assessment System will be made available to certain qualified testing related providers in addition to specifically trained and licensed IM Therapists.

Historical Background - In search of the "cook", "holy ghost" and "zone"

Note: The following information is meant to be informational and stimulate clinical investigation, rather than be scientifically definitive. It is not my intention to do or say anything that could slow the process of making the IM broadly available to the special people who I know will greatly benefit from it.

I spent over twenty years in record production, engineering and recording studio equipment design and manufacturing. My formal education in child psychology and personal research interest in audiology helped me pioneer psychoacoustic audio signal processing in the recording, sound reinforcement and broadcast fields.

My hands-on record and concert production experiences with musicians led to the development of the Interactive Metronome. My original intent was to create a means of helping aspiring musicians (and athletes) acquire the "natural timing" that is absolutely critical to long term success in their crafts.

In music, this natural timing is simply called *the cook*, in sports it's called *being in the zone*. The musical cook allows musicians to play very accurately, yet smoothly and expressively, for extended periods of time *without conscious effort.*

The *cook* also acts like a magnet that pulls the musicians together into a cohesive unit. It gives music the special feeling that creates hit records and pulls concert audiences cheering to their feet. Similarly, the *zone* gives Michael Jordan the ability to do what he does on the basketball court. I have no doubt that Michelangelo Buonarroti was *in the zone* when he was laying on his back, painting the ceiling of the Sistine chapel.

In the music business, the extremely rare musicians that can consistently cook usually become rich and famous because of it. Even if they knew how, they have no financial incentive to share it with others. In fact they rarely will even jam with someone who doesn't have it: "It's like playing with someone whose instrument is totally out of tune and they can't hear it." Consequently, serious musicians who aren't "accidentally born" with *natural timing* have no way to experience playing with it long enough to acquire it.

I thought about inventing an interactive *cook* training tool for nearly two decades, but it was not technologically or financially feasible. In the late 1980's the cost of digital sound technology and high speed computers became reasonably affordable. Shortly thereafter I developed and filed patents on the first working prototype of the Interactive Metronome. I fully expected that training with it would produce noticeable *natural timing* improvements in musicians.

By chance, it turned out that my first IM beta field training experience wasn't with musicians . At the urging of a personal friend who was also my doctor, my first IM trainees were children with severe motor skill development problems, and a man who had suffered a traumatic brain injury which destroyed much of the motor control area of his brain. Everyone involved in the initial IM beta training quickly realized that the Interactive Metronome had *profound* human learning and analytical capabilities that go far beyond its original limited intent.

Years of research to figure out how and why

From the very beginning I realized that it would take a number of years of study and research to understand what I had inadvertently come upon, but knew it was a worthwhile investment of my resources. Luckily, a number of individuals who experienced the results of IM Training first hand also recognized the major importance of my discovery, and were willing to help me in this major undertaking.

The obviousness of the *IM effect* helped to accelerate the learning process. It allowed me to pose very specific, fundamental scientific questions that apparently had never even been asked before. In turn, this ability allowed me to look at existing scientific data and studies in a new light. The bibliography pages on this web site and neural imaging studies on the web were instrumental to my research.

Along the way I was personally helped by a number of highly capable scientists who shared a similar dedication to understanding the foundational basis of neural disorders in children.

However, Dr. Stanley Greenspan was instrumental in helping me understand the role emotions play, and how to refine the IM's intervention capabilities, especially with autistic children. Dr. Greenspan and I have developed a strong working relationship and he has recently become the Director of Interactive Metronome Clinical Research. It was his insights into the emotional aspects of child development that crystallized my Theory of Sequentially Timed Learning .

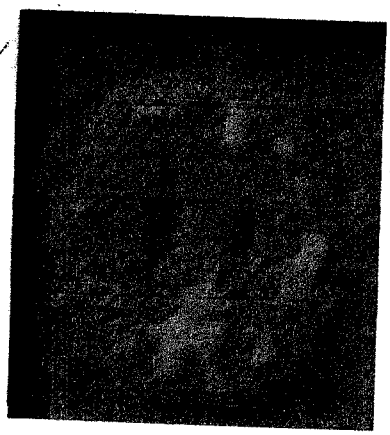
The following human developmental sequence of events helped to explain why the IM's simple and repetitive limb movement exercises and continually changing sounds trigger a fundamental mental re-learning process in trainees:

- The first conscious awareness of a fetus is believed to revolve around touch.
- The first conscious learning the brain undergoes is believed to involve the simple movement of the different limbs.
- During the third trimester hearing is developed and sounds thereafter to play a role in the infant's foundational process of learning-how-to-learn. (Sight comes along much later and is much less influential.)
- Simple mental and physical actions and reactions that are repeated often during a child's first 18 months form the deeply embedded foundation (and habits) upon which their overall learning abilities are built.

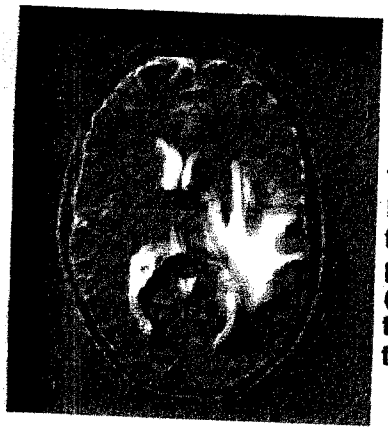
Real-Time Brain Imaging

SPECT/PET (single photon/positron emission computed tomography) and MRI (magnetic resonance imaging) are two of the most promising technologies currently being utilized in brain research. They produce real-time images of the activity taking place in the human brain. These new neural imaging capabilities are expanding our overall knowledge and helping

us better understand a number of brain related diseases and disorders. Neuroimaging Primer by Keith A. Johnson, M.D., Harvard Medical School



In April 1995, I attended a symposium in Chicago titled: Sports, Dance, Movement and the Brain: A Symposium. Many of the world's leading neuroscientists, doctors, educators, physical trainers, athletes and artists participated in an event. One particular high-tech brain imaging based study presented at this symposium helped bring many of the IM research puzzle pieces together. It became the foundation of my continually evolving theory of human sequential learning.



The above research project involved a woman learning to copy her neuroscientist boss's signature while she had electrodes attached her scalp. The electrodes were connected to electromagnetic scanning equipment, high speed computer imaging devices and television monitors.

The equipment produced real-time images of the activity taking place in her brain during her *signature learning* process. The series of pictures showed that many different parts of the brain were active during the beginning of the learning process, then fewer and fewer parts were activated as it became memorized. They also indicated that the striatum (motor control) area within the basal ganglia of the brain plays an increased role in triggering both physical and cognitive actions once such actions were memorized through repetition.

Additional Background Information:

Click Here to Learn How to Become an IM provider.

Timing Is Everything

Interactive Metronome gives everyone good time

BY LAUREL FISHMAN

Fonnmhor is the ideal "guinea pig" to undergo Interactive Metronome's high tech training program. "Right away at the first testing, it lets you know who's dragging and who's rushing, pinpointing it by milliseconds," says Curt Tramel, vocalist, guitarist and bouzouki player for the Celtic band. Technical proficiency and exceptional timing are essential to creating Fonnmhor's music, a blend of fast-tempo, melodically intricate traditional Irish music mixed with contemporary rock rhythms.

But while Interactive Metronome was originally conceived as a method to help musicians improve their time, now this computer-powered timing technology is making an amazing difference for children with attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), autism, cerebral palsy, and other physical disabilities and learning problems. Students of all ages are experiencing improved academic achievement, focus, concentration, coordination and motor skills by using Interactive Metronome. Training on the invention also benefits the performances of pro athletes.

"When you're playing, there's always a part of your brain that's thinking about tempo and rhythm," says Tramel. "After using IM, I can put my mind on 'auto pilot' and concentrate on singing and playing." Or as IM inventor Jim Cassily, a former producer for Atlantic Records who has also worked with Bob Seger and Janis Joplin, puts it, "As long as you don't think about it, you 'cook.'"

So just what is IM, and how does it work? The concept behind IM builds upon its predecessor, the traditional metronome, invented nearly 200 years ago to measure and maintain tempo — but not to teach timing. With the metronome, a musician has to teach himself timing, figuring out where his playing tempo is in relation to correct time.

Riding on the Metro: Users get interactive

Cassily's idea was to take away that precondition. When he made his first version of IM in 1993, he built a box with a processor chip in it that analyzed how closely hand claps and toe taps could match a beat. After analyzing accuracy of response, this then-named Time Machine instantaneously created a sound that moved left to right — using altered pitches, changing phase and tone — to indicate whether responses were early or late.

Cassily had discovered that if the feet were trained, it helped the hands, so he incorporated both with his innovation. Yet he ultimately found, "It's not about hands or feet. It's about learning to control your own mind, control the concentration."

In the early stages, Cassily was held back by the limitations of existing technology. "Building it was really tough," he recalls. "It had to be fast, and computers weren't fast enough." At that time, Microsoft guaranteed only 20 milliseconds' accuracy for its DirectX, which ran the computer audio.

Today's IM system utilizes state-of-the-art technology with headphones, hand and foot sensors and interactive exercises, and its accuracy is better than a half-millisecond. All the core timing and sound functions are now in a separate master control unit. In response to a repetitive reference beat, participants press the sensors and attempt to match beat while receiving visual and auditory feedback.

In more than 800 clinics, hospitals and other facilities throughout the United States and Canada, more than 1,000 practitioners administer IM Training to help patients systematically improve motor coordination and concentration. Occupational, vocational and speech therapists, child psychologists and educational specialists give IM Training to address a variety of challenges related to timing and attention.

In the first IM study involving children with ADHD, all participants experienced breakthroughs in different areas, with greatest improvement in behavior. Last summer, hundreds of students at elementary and secondary schools across the country took IM Training. Test scores showed increases of more than two grade levels in reading fluency and an average of 1.36 grade level improvement in math fluency, the measure of speed and accuracy in solving problems.

Dozens of schools, as well as several colleges and universities nationwide, have added the IM system to their curriculum. After a trial program, St. Thomas Aquinas High School in Fort Lauderdale, Fla., became the first U.S. high school to offer IM Training to its entire student body.

Athletes and the military have also benefitted from IM. Underway are several more studies, including one to improve high school band conductors' performance. Preliminary study results are showing progress for patients with Parkinson's disease, characterized by tremors causing shaky hands. "They're back to writing their own checks," Cassily smiles.

Meanwhile, Tramel and his band members are musical role models for thousands of special-ed children undergoing IM Training. Cassily is proud his invention is being used to help kids who need it the most, and he is working on a portable, cost-effective unit that won't require clinic visits — making it practical for musicians to use.

Cassily believes that through the use of IM, musicians would have no more of need tape loops or computers to capture the groove. "Everything is in the cook," he says. "It's all a matter of time."

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