

Making Music, Finding a Voice: New Technology Bridges the Gap Between Art and Music for Those with Epilepsy Who Struggle to Express Themselves Verbally

Many people living with epilepsy experience developmental delays or cognitive impairment in addition to seizures, making it challenging for them to verbalize or connect with others. This is particularly common in severe seizure conditions such as Lennox-Gastaut syndrome (LGS), Dravet syndrome and tuberous sclerosis complex (TSC).

These individuals often turn to art and/or music therapy as a way to express themselves. But what if their art could be converted into a musical sound that never before existed? Such a form of expression could offer a unique way for individuals who struggle to express themselves to connect with their loved ones.

That is exactly what a new, breakthrough technology called *unspoken symphony* does for the epilepsy community: it translates a person's artwork into a melody that's as unique as the individual behind it, giving voice to a resilient community.

Inspiration from a remarkable girl

Fifteen year-old Riley has been living with both LGS and TSC since she was a baby and has never been able to speak. Although she can't use words, Riley has found other outlets of self-expression – art and music – that deepened her connection with her family.

As a little girl, Riley loved expressing herself by using markers, paints and paper to create her own works of art. At a local fundraiser when she was five, Riley made her artistic mark – literally – on a canvas, along with other children with TSC, that an adult artist turned into a finished piece for auction.

Riley also has an affinity for music, which is a big part of her family's life. Her fascination with her dad Tim's guitar-playing led him to put a guitar in Riley's own hands. After that, she would strum along with him as they pretended to sing together, often for an hour at a time.

The company that makes one of her medicines – Greenwich Biosciences – listened to her family's experience and was inspired to create the web-based technology that translates artwork into music. In *unspoken symphony*, these two universal languages that speak to us all – art and music – are married together by converting artwork, created by Riley and others like her who struggle with verbal communication, into individualized expressions of sound.

Creating a personal symphony and sharing a sound that never before existed

unspoken symphony can work with any kind of art – drawings, paintings, finger-paintings and even computer-generated images. After taking a photo of the art with a mobile phone or scanning it into a computer, the user uploads the art to unspokensymphony.com.

The site takes the user through a series of prompts to ensure the artwork will produce the best results, such as editing tools to crop the uploaded image and adjust its brightness. Then, using a breakthrough image-recognition technology, the *unspoken symphony* software translates the shapes and lines within the artwork into a series of musical notes – a melody – within seconds.

Users can play their melodies within the website and watch as the notes animate over the art. The *unspoken symphony* software also creates a video of the animated melody and a printable

piece of the corresponding sheet music. A download link for the sheet music and video are sent to the user by email. These items can be saved and shared with family, friends and loved ones or via social media channels.

Visitors to the website can also check out the website's gallery, which features the unspoken symphonies of those living with LGS, Dravet syndrome and TSC. [They can also submit their own symphony for consideration to be featured in the gallery.]

Getting a glimpse of the inner world

For Riley's family, the ability to use *unspoken symphony* and "hear" Riley through her artwork has brought them immeasurable joy and a fuller understanding of their daughter's inner world.

"Hearing something that she created turned into music is a magical experience," said Katherine, Riley's mom. "It gave me more insight into her, even though I can't talk with her."

"Connecting with Riley through her artwork has been amazing," said Tim. "It's less like peeling back just one layer of an onion and more like peeling a potato into one long spiral that keeps going and lets you see deep inside. It's like getting a gift from your child."

unspoken symphony helps Katherine and Tim cherish their memories of Riley's creativity by keeping her art alive as music. "We are proud to be a part of *unspoken symphony* and excited that families like ours in the epilepsy community will have the opportunity to connect in a new way," said Tim.

To learn more, visit unspokensymphony.com.