

ANIMAL MUSIC:  
SOUND AND SONG IN THE  
NATURAL WORLD

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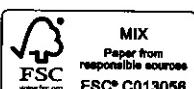


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## AN IDEAL AUDIENCE: THE WORK OF MAREK BRANDT & DAVID TEIE

*Marek Brandt and David Teie are composing music for insects, gnats, frogs and monkeys. What happens when animals turn into listeners?*

Marek Brandt doesn't even own a pet. And yet, over the past few years, he has shared some of the most magical moments of his life as an artist with animals. Once, he went looking for elks in the Swedish forests only to end up giving a concert for gnats. On another occasion, he waited for hours to play recordings of the mating song of frogs from his hometown, Leipzig, to their remote relatives in a French pond. On Gibraltar, Brandt drove a borrowed car up the island's spectacularly barren chalk cliffs; once he'd arrived at the top, he heard a strange sound to his left – and a tiny monkey's arm squeezed its way inside the vehicle. At the Polish-German border, he and a group of befriended musicians imitated howling wolves, much to the bewilderment of the passers-by.

By all accounts, the German sound and visual artist, photographer and designer has garnered plenty of success with his events: Despite its inherently experimental nature, his work has been featured on German cultural TV station 3SAT and local radio, from underground publications to nation-wide newspapers, at small-scale events and major festivals. And yet, although not a single animal has ever been harmed during any of his events and response has generally been positive, there has been plenty of criticism as well – and not all of it has merely been verbal. In February of 2007, Brandt presented his installation 'Mouse House' to the public. It consisted of a small shelter inside a cage made of plexi glass, a miniature-scale reconstruction of Barcelona's Formula 1 race course, a feeding dish, speakers emitting a sound art composition as well as the installation's inhabitants: two African harvest mice. It seemed a perfectly innocent set-up. Still, on the last day of exhibition, two activists associated with the vegan scene misappropriated the rodents as well as their temporary home, destroying the artwork in the process. For such a small endeavour, it seemed a somewhat overblown statement – what on earth made these people so angry about Brandt's work?

*Emotions & symbols*

Brandt was initially shocked by these reactions. Today, he can see why his 'music for animals' should garner such heavy emotional responses. After all, the notion of entertaining animals and writing pieces for them is merely a superficial layer on top of a far more complex and, as the artist puts it, symbolically charged project – one he's been labouring over for roughly a decade. In the early stages, Brandt intended to transfer the heart sounds of sheep to the meat counter of a supermarket. The idea would have been hard to realise even under the best conditions, but was, in the end, stopped dead in its tracks by the outbreak of foot-and-mouth-disease in the UK, which meant farms became inaccessible to the public. This setback didn't deter him from his ideas, however, and in 2004, he received a travel grant from Saxony's ministry for science and the arts specifically for his animal-music concept.

What followed were six months of travelling and performances. Brandt began visiting the Max-Planck-Institute to gather information for his pieces: 'I'll always begin with researching the species. A question I'll ask myself is whether there are any insights about which sounds and instruments are accepted by particular animals. If you're playing in front of ants, for example, you shouldn't use any extremely deep bass frequencies, since they could potentially endanger the hive – even the tiniest of vibrations are transmitted through the earth and the ants will direct their senses towards them. Bulls, on the other hand will, despite your best intentions towards them, run away from noise and reflections from metallic objects. When it came to gnats, in lack of prior experience, I had to come up with a solution myself. In the end, I opted for a combination of flute and electronics.' Does it work? Not always, as Brandt freely admits – some of the recipients simply decided to swim away or sting him. Then again, there were moments of success, which made up for all the disappointments. In Leipzig, he flew a balloon with a speaker close to a group of crows in a tree, which seemed intrigued. And back in Gibraltar, where that tiny monkey had invited himself into his car, the reaction was almost human: The animals listened with seeming interest for 15 minutes, then went off to do other things instead.

Needless to say, some people consider Brandt somewhat of a Gyro-

Gearloose. Which is wrong in more than just one way. For one, he is not a scientist. The biological and neurological aspects are merely departure points for him, never a goal in themselves. And, as much as he is honestly interested in his audience's response, there is a variety of adjacent topics which play into his music for animals: 'The original idea was to consider and reconsider our perception of animals in a society, which is increasingly losing touch with nature – at least in Western European cities and metropolitan areas. It was also important to me to examine their historical importance as symbols both in the world of the arts and in society. One shouldn't forget, after all, that many species have become an integral part in flags and religions as symbols and heraldic animals. And yet, how many of these identifiable codes and symbols are still in place in our contemporary, hyper-fast society, which mainly regards animals as productive livestock? What made the concept interesting was that it provided me with new insights even in case of a "failure" and to include the imponderable into my work. I am an artist and a musician, so my task is different from that of a scientist.'

*Animal specificity*

More than 4,000 miles across the Atlantic, David Teie is working on a strikingly similar idea. Although most people will know him for his remarkable cello technique, his job as an instructor at Maryland University or his string arrangements for the side-project of Metallica's Jason Newsted, Echobrain, Teie's interest has always extended far beyond the familiar conventions of music. One of his projects is a multi-angle recording and headphone-playback-technique which could revolutionise recorded music. He has also added to the debate about the origins of music, arguing that human music is the way it is because it was written by humans for humans. As it turned out, he had to turn to animal song to prove his hypothesis: I began by trying to come up with a theory on why music affects our emotions. I separated music into indivisible components and asked the question of each: why would this element induce an emotional response? After a few years of research and conjecture I had gathered plausible answers for each element and thought I had something of a complete theory of the origins and affective

processes of music. Any good theory is testable, and one of the tests of the theory would be that I should be able to take the principles of human music and apply them to other species. I studied the emotions of animals to see what kind of sonic triggers to their emotions I could find. If my theories were correct, I should be able to create species-specific music for animals.' It was a perfectly plausible consideration. At the same time, it would provide him with his biggest challenge as a composer.

Teie's first step was to send his book to renowned Stanford neuroscientist and author Robert Sapolsky. Sapolsky seemed an obvious choice: For more than a quarter century, he'd observed and analysed the behaviour of a single group of baboons in Africa and gathered extensive knowledge about their behaviour. Unfortunately, although he seemed interested enough, the baboons in question were, as Teie put it, 'nasty and not good subjects for my kind of study'. However, Sapolsky did provide Teie with another contact, Charles Snowdon, Professor of Psychology and Zoology at the University of Wisconsin-Madison. Since Snowdon wasn't prepared to jump right into the project, it took a little convincing to get him on board, as Teie remembers: 'One time he sent me two new recordings of two recently discovered calls of the cotton-top tamarin monkeys. The calls were named similarly: the SL multi and the SL trill. I analysed them and wrote back to him that I thought they did not belong in the same category based on a musical analysis of the calls. One sounded like a threat and the other sounded like an in-group vocalisation. As it turns out I was right even though he hadn't told me the context of the calls. He liked the idea that based on a musical analysis I was able to tell him generally what the context and meaning of these calls were. After that he decided to pursue this study with me.'

#### *Tuning into the monkeys' system*

Teie's approach was simple: Study the vocal expressions of animals to arrive at a sonic syntax tailored directly at them. An article for the *Washington City Paper* correctly established that it was wrong to conclude that monkeys did not like any kind of music just because they preferred silence to human music – or that, as Joshua McDermott of New York University claimed, music 'is only going to obscure sounds'

that are meaningful to them, like the sound of an approaching predator or the call of a nearby monkey.' Instead, Teie was convinced that one had merely to tune into their sensory system to leave an impression. He used vocalisations of the cotton-top tamarin found in an online library and slowed down the recordings by a factor of anything between four and ten to adjust them to the human vocal range and to transcribe them. To Teie, it was clear from the outset that the two determining factors for writing species-specific music were the vocal range as well as the respiratory rate of the adult female – the latter of which was in tune with the notion that the heartbeat and breathing rate experienced by the foetus in the womb are of seminal importance to their appreciation of sound. After hours and hours of work, he finished two different compositions for his new audience: 'exciting monkey music' and 'monkey lullabies', both of which sounded equally disturbing to human ears. He took them with him to Madison to observe their reaction. Before the tests began for real, meanwhile, he couldn't resist the temptation to try out his work in practise: 'In one visit I tried a simple version of what would eventually be my music for tamarin monkeys and it was very interesting to me that it was immediately quite successful. I whistled a tune that was something of an improvised set of variations of affectionate tamarin vocalisations. The monkeys stayed in place (very unusual for this species that is constantly hopping from place to place as a defence against potential predators) and stared at me. It was a stunning and magical moment for me.'

It wouldn't be the last and only magical moment. When Snowdon and his team played Teie's compositions to the monkeys, they reacted just the way they had anticipated and hoped: The exciting music sent the monkeys into a state of heightened activity and induced them to mark their territory. The relaxing piece sent them into a state of tranquillity. In their paper, published in the *Biology Letters* later that year, the results still sounded fairly dry. The bottom line, however, was remarkably in your face and as spectacular for zoologists and musicologists as for the average visitor of the local zoo: 'Music composed for tamarins had a much greater effect on tamarin behaviour than music composed for

humans.' The implications of this statement were so far-reaching, that they seemed to mark a watershed: Were humans at the brink of truly communicating with animals? Were animals at the brink of appreciating art? The questions got increasingly spectacular and speculative and suddenly both Snowdon and Teie found themselves at the centre of media attention, conducting dozens of interviews a day and receiving more attention within a few weeks than over the course of their entire professional careers.

*Yet more questions*

In truth, as with any meaningful scientific study, Teie and Snowdon's may have answered one or two questions, but merely opened up even more in doing so. One of them was related to the notion of 'form' in animal music. To arrive at his monkey pieces, after all, Teie had mainly worked with sound and pitch, in a bid to reproduce and rework certain characteristics of the tamarin language. His compositional procedures, meanwhile, had been entirely human and consisted of repeating the sounds or pitching them up and down certain intervals. Shouldn't monkey music take monkey syntax into consideration as well? 'The question of the adaptation of forms to a given species is one that I have yet to consider, although it is a very interesting and valid consideration', Teie admits, 'For now I am adapting our forms, ABA for example, to the music for animals. It does seem fitting that the pace of variation in our music is calibrated to human perceptions. Brahms, for example, often changes patterns every 10 to 30 seconds or so. Surely this is accurately attuned to our own pattern sensibilities. When Tchaikovsky seems to go on a bit too long with a pattern, such as the French army retreat passage in the 1812 overture, many think it gets a bit tedious. Perhaps animals who process sounds 10 times faster than we do and whose vocalisations need to be slowed down 10 times in order for them to be heard in our own vocal range would find pattern changes to be optimal every 1 to 3 seconds! This is a very discouraging thought to me as a composer of species-specific music, considering the amount of time it takes to research, write, and record a piece. I imagine spending a week producing 12 seconds of music.'

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Other questions directly affected the process of actually composing the music: In which way was there still a sense of satisfaction when writing in an entirely foreign musical tongue, the results of which would never be open for his own appreciation? And what constitutes quality in an environment when the only gauge of a track's effectiveness was how soothing or stimulating it was? Teie was able to resolve at least part of the dilemma when taking on his second big animal music project: Music for cats. Compared to the tamarin experiments, the endeavour had two decisive advantages: With many millions of cat owners, for one, Teie was able to test its efficacy on a far wider audience. And should his music truly work in improving the moods of felines all around the world, he finally stood at least a chance of financial remuneration for many years of hard, unpaid work.

In terms of artistry, on the other hand, the challenge was even bigger than the monkey music. Much of cats' hearing is situated in the ultrasonic range, meaning that desperately little is even audible to humans. To keep things interesting for himself, he decided to compose two pieces at the same time: 'I found it difficult to continue writing music for cats unless I included that portion of the songs that is intended for the cat owners as a part of my inspiration. There is a frequency range within the hearing range of cats that is below their vocal range that I presume is not subject to their appreciation of music. We humans, for example, hear sounds above and below the frequency range of our own voices but we don't recognise pitches in these ranges. If this is true, then the range of the male human voice is not of interest to cats in terms of the same kind of emotional response they would get from a vocal communication from one of their own species. I use this range then to write music for the cat owners. The music in this stratus may be something like background noise to the cats. It is like writing music with traffic noise included. It should be ignorable in the background for the cats and intended for the *Homo sapiens* in the room. I have found that it's easier for me to write music when I consider this layer of music to be the pathway through which I communicate as a composer.'

Surprisingly for someone as immersed in writing music for animals as Teie, a two-way communication is not even remotely on his radar.

Miracles, as he has noted, mean nothing in the world of 'savage beasts' and music is unlikely to calm a raging manatee. And yet, what he does believe in is furthering a deeper understanding of animals and, by means of comparison, ourselves. It is a remarkable similarity with the work of Marek Brandt. For Brandt, playing his music for animals, we reflect upon ourselves and our own perception of sound, because animals represent possibly the ideal audience: One which may be listening to their very first piece of music ever (or, as in the case of the one-day-fly, their only piece ever), without any preconceived notions, expectations or suggestions about how to react. It is the fulfilment of an age-old dream of every true music aficionado: To be able to return to that state of perfect naiveté and bliss, which filled us when being exposed to music as a child. To be able to get in touch with this wonder again, the world of animals offers sound artists and composers a unique opportunity, according to Brandt: 'Whenever I'm playing for animals, I get the feeling of being able to work much more open and experimental than with humans. It is a lot harder to predict the response of the public. But that is precisely what makes it so exciting: To constantly re-invent myself for the animals.'

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Charles T Snowdon and David Teie, *Affective responses in tamarins elicited by species-specific music*,  
Department of Psychology, University of Wisconsin, Madison

<http://www.musicforcats.com>

## THE GRASSHOPPER AT TWILIGHT

*But ... is it music?*

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