

## Mixing Time and Space: A Conversation with Steven Feld

by Alice Apley, PhD, Executive Director, DER



Ulahi Gonogo and Steven Feld review song translations, Bona village, Bosavi, 2018

**ALICE APLEY:** What inspired you to make the original 1991 recording and audio CD?

**STEVEN FELD:** Quite simply, the first thing I heard in the Bosavi rainforest: the constant interplay of ambient and human sounds, and, after some research, learning how the local music of nature was precisely the local nature of music.

After those first years of field work, 1976-7, I read R. Murray Schafer's book *The Tuning of the World*, and came across this phrase: "soundscape research should be presented as musical composition." I had that in mind when I prepared my first LP, *Music of the Kaluli*, for publication in 1982. I opened the A side with a twelve-minute long track of men, women, and children cutting trees overlapping with their whooping, whistling, talking, laughing, and singing song fragments, set in the ambient surround sounds of the birds and insects. In response to the idea of an "anthropology of music" I called this an "anthropology of sound," impressed with the fluidly crossed and blurred sonic spaces between human and non-human, work and play, verbal/vocal and instrumental.

But the recording was only partially successful to my ears. Although I had a stereo Nagra recorder and very good AKG cardioid and short shotgun microphones, I knew too little about recording environmental sounds in a dense rainforest environment. So I began to seek out recordists from natural history units at BBC and Australian Broadcasting, to learn more about their recording techniques in tropical rainforests. When I went back to Bosavi in 1982 I had both the more specific equipment and knowledge of the recording techniques to make a thirty-minute soundscape radio program for NPR, *Voices in the Forest*, using the twenty-four hour “day-in-the-life” format. But this time I had more control of how to record and mix ambient sounds from different heights and depths of the forest. I was also able to create that piece with much more playback, feedback and dialogue in Bosavi, focusing on how all of those overlapping, interlocking and alternating forest sounds are heard, mimicked, and layered together with human soundmaking.

Grateful Dead drummer Mickey Hart heard that recording when we first met in 1983. His instant response was: “This is great, it sounds just like a Grateful Dead jam! Why is it a secret?” So he started playing it as an intermission soundtrack at Grateful Dead shows, and soon enough the GD hotline was lighting up with requests for copies. That’s when I was inspired to imagine that there really was a world of interested listeners out there, and not limited to academia, connecting music and environmental politics. Once Mickey started producing his CD series “The World” on Rykodisc, he called and said “I want to do a day in the rainforest with equipment on steroids; Dolby and Lucas are in; are you ready?” So I recorded for ten weeks in Bosavi in 1990, spent five months editing in Mickey’s studio, and we released *Voices on Earth Day 1991* at George Lucas’s Skywalker Sound.

**AA:** How did you prepare for recording in the rainforest? And how did you construct the original recordings, in terms of microphone placement, different levels of the canopy, different times of day, and so forth?

**SF:** On the technical level it certainly helped that I had a background in recording and composing film soundtracks, and making sound art for radio. And by the time I made the 1990 recordings for the *Voices of the Rainforest* CD project I already had fifteen years of experience listening to the Bosavi environment, and knew the performers and styles.

A good stereo image of a singer singing a song in the rainforest is not difficult. What is difficult is to get a correct mix of the singer and what s/he is hearing in the surrounding environment. The only spatial solution, at least with the equipment I had, a stereo Nagra, was to make and mix multiple recordings. Take the scene in the film and on the CD where Ulahi is singing at a creek, sitting on a rock three feet from the bank. I waded into the water and made a stereo recording of her voice. Then I made stereo recordings of the water in

front, to each side, and behind her. Then I recorded the ambience behind her at different heights. Then I made a wider ear-level recording from the bank.

People ask me why record and mix eight different stereo tracks to get that sound image? Wouldn't this be easier with a stereo A-B recording? The answer is no. In the rainforest there are too many reflections to record with A-B stereo; this creates phase problems. The only way to do this is with X-Y stereo. The other question people always ask is: how could you mix so many tracks and not add noise? The answer is that Mickey Hart arranged with Dolby for *Voices* to be the field beta-test for portable Dolby Bryston SR noise reduction. As a result, the noise floor was pretty much dropped to zero.

**AA:** Can you explain more about recording with A-B stereo versus X-Y stereo?

**SF:** A-B stereo is recorded with two omnidirectional microphones; the space between them creates the separation heard as a stereo sound field. The distance between the microphones makes possible registering a large space with a variety of sound sources, for example, a symphony orchestra. But in the rainforest, an A-B stereo recording, due to the density of sounds, depths, heights, and reflections, actually makes it more confusing for a listener to maximally locate the sounds. One ends up head-bobbing to a spread of sonic ambiguities.

X-Y stereo is more typically recorded with two cardioid microphones at 90 degrees, almost touching, point to point or one just on top of the other. This does not record a wide-shot spatial image but a more intimate medium shot overlay of the double cardioid field, with a spread of off-axis side fields. X-Y stereo produces a much more accurate audio picture of an immediate niche, and has the advantage of mixing correctly to monaural as well. For the ambient tracks I always recorded X-Y stereo at three levels of height and two levels of depth. Mixing these height and depth layers was the best way to represent the biological richness of forest sound niches. It also made possible mixing the ambient sounds with more close-up recordings, of voices, or instruments, with the possibility to render height, depth, and presence more accurately and intimately.

Perhaps the most radical additional recording intervention was with the bird recordings, using a technique I learned at the Cornell Lab of Ornithology. Basically, I would record a distant bird with a parabolic or shotgun microphone, and then immediately rewind and play the recording back at distortion level over a really cheap small radio speaker. This had the effect of holding a broken mirror up to the bird, creating a WTF? moment and drawing the bird closer. After doing this for two or three weeks it is often possible to record the bird close-up with great sound detail using the X-Y stereo mics or a short shotgun mic. This close-up can be turned into a sample and mixed on top of the bird calls on a guide track, with complete control of volume and depth.

What all of this adds up to is that there is always a mix of real time/space, expanded time/

space, and compressed time/space in the soundtrack. When, twenty-five years later, I digitized the original analog tapes and recomposed *Voices at Skywalker* with Dennis Leonard in 7.1 cinema surround, we had considerably more control of all of these dimensions of height and depth, space and time, because we could calibrate the different ambient bed tracks, performance tracks, and sample tracks and place them in a fully mapped 360-degree sound field.

**AA:** Is the still photography in the film from your early fieldwork? Had you used those images in any works previously? For me, the stills read as a journal of fieldwork. What was your intent in using these older photographs?

**SF:** Yes, the majority of stills in the film were all taken during field trips in the 70s, 80s, and 90s. And no, most of them had not circulated or been published before. Most of what's there was my 35mm analog photography; there are also images shot by Bambi Schieffelin, and Shari Robertson during those early trips. And there are also a few newer images shot in 2018 by Jeremiah Ra Richards, who did the principal videography and editing for the film.

While working with me some years ago to begin the Bosavi Digital Archive for return to Papua New Guinea, Jeremiah digitized about 8000 images from my negatives and slides. After the first version of the 7.1 soundtrack was completed in 2017 for a series of 25th anniversary concerts, Jeremiah and I decided to make a fundraising demo reel. With no video to use we turned to the digitized photographs to mockup the first two sequences.

For the first sequence, moving into and through dawn, we used color images and for the second sequence, making sago, we used black and white. The idea was to slowly evoke multiple time/space depths while allowing people to encounter the density of the surround soundtrack. We experimented with different kinds of temporalities, dissolves, fades, and multiple image overlays in the first sequence, waking up with the forest. I wanted to provoke an experience like the one I had so often, of opening my eyes to the dawn light, only to find that it forced me to "see" even more with my ears.

The second sequence largely uses black and white stills, many from my earliest encounters recording Ulahi singing at her sago places with family and friends. Here Jeremiah and I wanted to evoke a past time but also to give a sense of the fluidity of work and play, of talk and song, and of women, men, and children being together in the forest. This was also an experiment with using images not to tell the story of the song lyrics (something we do later) but to tell the story of the sociality that indexes their singing.

We liked moving from the first sequence, with the light coming up and forest places coming into focus, to a sequence where the forest was in soft tones of black and white. Jeremiah

later had the idea to occasionally use the green sago palm frond overlays, the green colors both masking and being masked by the black and white. Later we reframed the sequence by entering and exiting with drone shots to the sago places. That was also a way to contrast the new videography with the older images.

All to say, that yes, indeed, the “fieldwork journal” look was something we very much wanted to do with the still image montage work. To me it seemed a way to evoke the sensation of looking slowly through a scrapbook of memories while listening with ever more feeling for the spatial complexity of their sound world. In his book *Poetics of Space*, Gaston Bachelard, writing of the experience of home, coins the oxymoronic phrase “intimate immensity.” That’s the sensation I hoped to evoke by opening the film with the still images.

**AA:** You mention that the photo archiving was done to create the Bosavi Digital Archive. Where is that going to live in PNG? Is it part of a larger collection or archive? There is such extensive anthropological documentation in PNG and I’m wondering about the accessibility of that to local communities.

**SF:** The Bosavi Digital Archive is meant to digitally join all the Bosavi recordings, images, notes, publications, and ephemera by myself and Bambi Schieffelin for community memory and history use in Bosavi. It is also intended to make Bosavi better known to other citizens and researchers in Papua New Guinea, and, of course, to the research community around the world. In current form it exists on a 5 TB hard drive and includes materials from our original work of 1967-2000 as well as the more recent work from the 2018-2020 visits. We want Bosavi people to have access to their family history materials and we want others – with appropriate restrictions stated locally for privacy, intellectual property, and copyright concerns- to be able to appreciate the range of work we’ve done on language, poetics, song, stories, ecology, and local history. And we want other researchers to have a wider context for our published materials, especially the *Bosavi-English-Tok Pisin Dictionary* we did with five Bosavi collaborators, and the CD and filmic versions of *Voices of the Rainforest*.

As you say, accessibility is a key issue in local communities, and we hope to create the infrastructure to begin making this available, testing its uses and utility in Bosavi. We would then discuss other uses and users with Bosavi people, before taking steps to leave appropriate copies elsewhere, like at the University of Papua New Guinea, or National Museum, or Institute of Papua New Guinea Studies, and institutions elsewhere. Another key issue for Bosavi people is that others should not have the right and ability to exploit their recordings or images without local permissions and compensation. In today’s digital Wild West that is obviously a big concern, because it is virtually impossible to guarantee that access and appropriate use will be poacher-proof. Still, the important thing to Bambi and me is that this is not just a bunch of boxes in the basement to be relocated to another Western

basement once we are dead. It is meant to be an active archive whose uses are elaborated in dialogue with Bosavi people now, many of them the third and fourth generations of families we have worked with.

**AA:** You have talked about your collaboration with folks in Bosavi throughout your work. Can you give a sense of how that has evolved over the years, and in relation to the different phases of work -- from your earliest fieldwork, learning about the local birds, etc., to collecting audio and visual materials, to editing of the various works.

**SF:** Collaboration takes many forms. Growing up making music in ensembles of various sizes, working on film crews, and in recording studios, I intuitively knew that most art was collective and collaborative labor long before I read the wonderful sociological description of exactly this idea in Howard Becker's book *Art Worlds*. Overlapping layers of expertise, conversation, and collective enterprise in time are fundamental to as many forms of intellectual production as artistic production. I was no stranger to the idea of collaboration going to Bosavi, because I went not as a solo anthropologist but as the most junior member of a research group with another cultural anthropologist, Edward Schieffelin, and linguistic anthropologist, Bambi Schieffelin. I was introduced in Bosavi as Bambi's younger brother so we could all work from the same base because other communities complained that Bona village already had two researchers. Learning language, getting access, making connections, and doing overlapping work, often together, or with the same local people and families, was a daily lesson in collaboration at multiple levels. This also involved an important reciprocal relation, mother's brother/sister's son that I shared with Zach Schieffelin, who was six years old at the time.

Some forms of collaboration of course are very particular, like work to record and then playback, transcribe, translate, and explicate poetic texts with singers. Or work with local forest guides to learn the trails, walk them daily, and in the course of being together learn, photograph, and record the forest features that are the components of song maps, like land forms, waterways, trees, gardens, birds, insects, and other forms of life.

Some of these kinds of collaboration involved developing relations with unique people with exceptional knowledge of the forest, like my work on forest birds with Yubi Meyo: and Kulu Fuale, or exceptional knowledge of poetics, like Ulahi Gonogo, the featured singer on the *Voices* CD and film. Days, weeks, and years of times together both in the forest and at my village desk, with playback and feedback of many different images, recordings, texts and translations led to both intellectual and artistic co-production about traditional knowledge. Other kinds of collaboration involved working with a crew of two or three forest guides, often walking together and stopping to record and photograph, with them becoming very knowledgeable about my practices as well, like mastering where to hold reflectors,

or set up microphones, or build bird blinds, or construct platforms in trees for me to make photographic inventories of the song paths.

In 1982, after I had been gone from Bosavi for five years, I returned and a copy of the newly published *Sound and Sentiment* reached me in the forest. That set off another kind of collaboration; translating and presenting parts of the book back to the community of origin to receive their questions and critical commentary. That led, some years later, to a postscript for the book that described this kind of work as “dialogic editing.” That phrase brought together for me overlapping intellectual genealogies that I became very aware of in the 1970s. In ethnographic film I was influenced by Jean Rouch’s emphasis on playback and feedback to create film as a “shared anthropology.” In linguistic anthropology, I was influenced by Mikhail Bakhtin’s ideas of dialogism and polyphony. And in music I was influenced by Simha Arom’s experimental uses of audiotape playback and feedback to gain a deeper understanding of the structure of listening and musical knowledge across cultural differences.

Making *Voices of the Rainforest* involved many layers of collaboration both in Bosavi and away from it. Of course, this started with the collaborative work with local forest guides and musicians in 1990 to collect a twenty-four-hour panorama of recordings with equal care to forest ecology and Bosavi musical practices. Then there was the post production collaborative work with producer Mickey Hart, his assistant Howard Cohen, and studio engineers Jeff Sterling and Tom Flye to conceptualize, compose, edit, and create the original CD. Then the years of feedback from Bosavi communities and listeners. Then, twenty-five years after, the opportunity to digitize the tapes, and to spend a year with Dennis Leonard at Skywalker Sound to recompose the piece in cinema surround sound. Then a year of concerts with that piece in Europe, Australia, and the US. Then a return to Bosavi to playback the recordings, show people test still image sequences for feedback, and to film together with Jeremiah Richards, working with Ulahi, as well as a new forest guide crew and a new group of enthusiastic villagers. Then a year of editing images and tweaking them to the surround soundtrack working collaboratively back and forth with both Jeremiah and Dennis. And then previews in the US, Europe, Canada, and Australia.

So yes, collaboration has been important to me at all levels, theory, method, personal rapport, and of course outcomes. It’s important that the style of doing fieldwork as collaborative practice naturally led to a kind of activist and engaged position on how to make the work not just bring respect and recognition but also financial benefits to Bosavi. Since the appearance of the *Voices* CD in 1991 all project royalties accrue to the Bosavi Peoples Fund, which I help manage with a local committee in Bosavi. BPF supports locally-defined initiatives in education, health, and village life, and completes the circle with collaboration to address concrete needs.

**AA:** Have you shared the film with the community in Bosavi? What was the response? I think of how community responses to ethnographic films is often to see them as a kind of home movie, and celebration in seeing one's friends and family on the screen, but this is a very different kind of film, and I'm wondering how that differs.

**SF:** For December 2019 and January 2020 I returned to Papua New Guinea with my linguistic anthropology colleague Bambi Schieffelin and with filmmaker Jeremiah Richards. We did a stopover film screening in Brisbane at the Griffith University Film School, and then a screening at the University of Papua New Guinea, generously hosted by Anthropology Department chair Linus rigim'Dina and Institute of Papua New Guinea Studies director and ethnomusicologist Don Niles. In the audience were some very excited Bosavi people, temporarily resident in Port Moresby, together with UPNG students, faculty, community members, and local anthropologists, like National Museum director Andrew Moutu. The Bosavis present were very aware that this moment was showing their remote world to mostly urban Papua New Guineans, people who were educated and held positions of authority. It was a moment of deep pride for them.

Once we reached Bosavi we screened the film a number of times in the village, using a large portable roll-up screen and projector with solar rechargeable batteries. Of course, there was much pleasure and much vocal exclamation when audiences watched the mixture of still and video images past and present. There was also sadness, and public wailing, in response to images of those no longer living.

As we expected, the most important part of showing the film in the public was not about the content; it was about the social relations. More than anything the screenings were a ritual of making good on a promise to complete the film and to return it to the source, ratifying many long-time friendships and connections within and across villages. In general I would say that having experienced so much prior playback, of songs, images, and mockup sequences, Bosavi people, particularly the generations that had known and worked with us, were not surprised by the look and sound of the film. They liked the slow and deliberate pace; in fact for them it could have even been slower and more deliberate. And they liked the idea that people outside Bosavi could see and hear their place, could listen to the world they listen to, and could get some appreciation of how they sing to, with, and about it. In those senses, of course, it was a "home" movie.

In addition to the larger public screenings, I did a number of more private ones, particularly for people who had a major role in the work. The most emotional and telling of these was with Ulahi, the featured singer, and her children. She sat intently and watched with the same modest and humble demeanor that we've experienced from her since the 1970s. Her



daughter Kisi and son Bage, now in their mid 40s, watched with tears in their eyes, a mixture of intense pride and amazement that something they've had in the mundane background soundtrack of their lives, this singing by their mother, could possibly be so meaningful that a bunch of foreigners wanted to bring it to the rest of the world.

What I most anticipated was the typically more bittersweet conversations that the film inevitably brought forth. Many Bosavi people feel that the more we do with, for, and about them, the less we come back. They have seen our monographs and understand that this is what we did as students, when we spent very long periods in residence. I have brought back LPs, radio shows, and CDs before. Twenty years ago, Bambi and I returned with the dictionary, equally the product of a very long collaboration, and there was a huge party. This time too, to celebrate the village and the work, we launched the film with a big celebration, buying pigs to feed the community and visitors. This was expected, and understood as placing the film in a history of exchange relations; the necessary enlargement of what one gives in relation to what one takes, and how time makes the reciprocal commitments and obligations have more depth and meaning. Usually just after such large displays of pride and solidarity, friends shift demeanor from exuberant to a bit down, asking if now, following this work, we will ever come back. They ask if we will now go home to die. In other words, all of the real emotion, and displays of social relations brought forth through the return of the film, and the screenings, really focus on remembering, renewing, and questioning the affective dimension of what it means to live and work together. This is PNG sociology 101 and was hardly surprising. All the same, it becomes more powerful and moving with each major project, and this was certainly true with the return of *Voices*.

In many ways, fitting right in with this affective history of the gift, the best and most important part of the film for Bosavi people was the way it ends, that is, making clear that our work is not finished; that this is just the opening of a story. Ending the film with Monica Degelo's poignant speech about the new generational voices of the rainforest, the relation of forest birds to mission and government radios, and now, personal cell phones, worked perfectly in Bosavi. It says what the people always want to say: just wait, we have more to tell you. In fact, in 2018, Jeremiah and I filmed, in addition to Monica, fifteen other people speaking about their hopes and desires for more connection in the world.

In 2019 and 2020 village audiences understood that ending the film with just one of these younger voices set the ground for a follow-up film with the others, as well as for our work to record more contemporary activities and interviews. And of course, in response to the film, and all the feeling and memory it evoked, people again worked very enthusiastically with us to film activities and interviews that will allow for a substantial enlargement of the story with *New Voices of the Rainforest*, which we hope to get to the test screening stage by the end of 2020. ■

**This is a full transcript of the interview “Mixing Time and Space: A Conversation with Steven Feld” which appears on the Documentary Educational Resources website:**

<https://www.der.org/mixing-time-and-space-a-conversation-with-steven-feld/>

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