

Engineering Through a Peacebuilding Lens: Supporting Locally Driven, Locally Owned Peace Processes from Within in Somalia, Colombia, Kenya, and Beyond

Jerry McCann

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Jerry McCann is a Senior Advisor and Peace Engineer with Build Up and returned to Juniata as a Baker Institute Fellow in Spring 2020.

Experience turned me from an engineer into a peacebuilder and allows me to call myself a peace engineer. First, I want to take you on the journey that I went through over the last 27 years. It actually started even longer ago than that. I went to California Polytechnic State University, San Luis Obispo, which is in central California, where I got my degree in structural engineering.

I graduated in 1984 and decided that I was going to do what everybody does with a structural engineering degree: become a structural engineer. I went to work in Newport Beach, California, living in Laguna Beach. If anybody's been to that part of the California coast, you know it's probably one of the most idyllic places in California. I passed the civil engineering exam in structural engineering, was making a lot of money, had a convertible, lived on the beach, did body surfing, volleyball, frisbee—the life. After seven years, I can remember the night I sat on my bed and said, “What am I doing? This is not what I want out of my life.”

Somebody had planted the idea in my head that there was an organization called the United States Peace Corps. I decided I was going to leave behind the frisbee and go to Uganda, where I was asked to teach civil engineering to Ugandan college-level students, which I did for three years. It was there that I realized that my understanding of what's going on in Africa, and certainly what's going on in Uganda, was completely wrong. The students I was teaching were so smart, so passionate, and so committed that it scared me. I almost felt that I couldn't meet their expectations. It compelled me not to try to get them to understand my world but for me to be able to satisfy their world. That started a bond that I had with them because I was showing them, honestly and from my heart, how much I appreciated what they had been through: twenty years of civil war. These kids growing up hadn't seen anything but civil war, and here they were in a small rural town in a technical college just giving their heart and soul into learning civil engineering, which really struck me.

I decided then that I didn't want to spend the rest of my life in the United States. I had a great mentor who told me, "Why don't you go back and get more skills? Because, if you want to really have an impact in post-conflict developing nations in the world, you need more skills than you have now." I went back to the University of California (Cal), Berkeley and got a master's in construction engineering and management. Instead of rushing back overseas, which I really wanted to do, I decided to take the skills that I had learned at Cal Berkeley and put them to work. I got a fantastic job in San Francisco as a project manager for a 60-million-dollar medical office building construction project. It was a thirty-month project. At the end of that, I had the skills and was ready to go back. In the Peace Corps, I had met my wife, Elizabeth, from Wisconsin, and we had gotten married in East Africa before we came back to the United States, so I also had the love of my life with me, which is an important part of life.

I was asked by Habitat for Humanity to run the program that they had in Kenya. Are people familiar with Habitat for Humanity? Low income housing? You can imagine how that looks in the United States, and then you can think about how it might look in a place like Kenya. It was there that I had a staff of about fifty Kenyans. Once again, I recognized that these Kenyans, who were committed to helping the communities that they were engaged with create better housing, certainly understood Kenyan communities much better than I ever would. A lot of the communities we were working in were rural. That's when I realized that if I wanted to be somebody of value to the Kenyans rather than of value to the people at Habitat headquarters, I needed to give up my authority. I needed to give up my control, and I needed to empower and liberate them in their work. They told me after several years, "You know. We were so tired of the white man coming and telling us the things they thought could work that we knew couldn't, but they wouldn't listen to us. Then we'd watch them fail in their efforts to get things that didn't work to work." I went about it in a completely different way, and it paid off. We went from building 125 houses a year to building over 500 houses a year in the four years I was with Habitat.

After four years, I realized the Kenyans should really be running this program, and Habitat for Humanity was ready for that, so I needed to find a new direction. I joined Interpeace. This is when I started to really see the world. I was asked to join a peacebuilding organization with little knowledge of peacebuilding and no formal knowledge of Somalia, which is where they wanted me to work. The reason that they hired me is because they recognized that I was somebody who believed in empowering from within the people who were central to the solution. That was the ethos of Interpeace. They allowed me to start out as operations manager. I was promoted to regional director in 2005, and, from then until 2010, I was overseeing our work in Somalia, Rwanda, Burundi, the Congo, and Kenya. In 2010, they asked me to take on operations around the world. I was promoted to deputy director general. I said I would take the job under one condition: I wouldn't go to live in Geneva where their headquarters were. The only way that I could feel connected to the work I was doing was to remain in Nairobi, Kenya, where my wife and I

ended up living until 2016. During that time, I had the chance to get out into the world. I was responsible for starting the regional offices in Nairobi; Abidjan, Ivory Coast; and Guatemala. I oversaw the operations in the Middle East and Southeast Asia as well. My real house at that time was an airplane. I get excited just getting into a taxi to go to an airport, so it wasn't hard for me to take on that responsibility.

Finally, in 2016, after twelve years with Interpeace, I got really interested in an organization that sprang out of Interpeace—a group of young peacebuilders from different parts of the world who believed that technology wasn't being utilized enough in peacebuilding. They all believed deeply in the concepts of peacebuilding and saw that technology was being used by young entrepreneurs in countries like Syria, Colombia, and Burundi. It was really exciting work that was being overlooked by the peacebuilding world, which was fixated on dialogue processes and wasn't technologically advanced as a sector. We recognized that young people who really had no direct connection with peacebuilding but who had a lot of passion for peace in their countries were doing some really interesting things. This organization sprang up as what's called a peace-tech organization, seeking ways that technology could amplify and broaden the participation and engagement of stakeholders in peace processes. I am twenty years older than the second-oldest person. I get to hang out with a lot of young people. It gives me a lot of energy. I'm no longer the authority; I'm an advisor for them. They can take or leave the advice that I give, which I'm happy with because young people are the future. They have energy and ideas. They make me look archaic at times.

If anybody's interested in becoming a peace engineer, you have two choices. One is that you can take a path that's prescribed—I'm sure even at Juniata there are prescribed paths. The other is you can take a path that's not prescribed. I started on a prescribed path. I should have bought a house and had a wife and kids and then I would have followed the perfectly prescribed engineering path. I just decided that this wasn't enough. There were engineers that I worked with that, when I told them my plan, told me I was a fool. They said, “You're giving up your career, and you're giving up your life. We're not going to be able to accept you back if you're going to run off to Africa.” I said, “It's okay. I'll figure it out.” I saw some of those engineers thirty years later, and they've expressed to me how impressed they are with what I did with my life. They're still doing the same thing they were doing when I left, still with the same company, still engineering buildings. They enjoy their work, but, almost as an apology to me, they've said, “What you've done is something we could have never believed when we were discouraging you from going.”

I'm not suggesting everybody that wants to look at life abroad should go into the Peace Corps, but the beautiful thing about it is that it gives you a very strong safety net to get out into the world. They give you great language training. They have a lot of support in the background, and there's a lot of freedom. Once you get posted, you're really working within the community and within the institution that you're working with. Not everybody has the same experience I did. Some people have awful experiences in the

Peace Corps. It's important that you get a variety of opinions from people that have gone down this path, but, for me, not only did I find my wife, but it really was the gateway to everything I did afterwards.

I also want to talk about some things that to me are so important in peacebuilding. The realities are that peace is nasty. I live in San Francisco, and I know it's not about peace signs and flowers in your hair. I loved all that stuff. I grew up listening to the music and believing in John Lennon and what he was speaking to me, but peace is ugly. Peace is messy. Peace has sharp edges and horrible situations. Peace is also, though, about people who have the courage to believe in and pursue it. Peace requires that only those who are ready to fail can really pursue it because it doesn't come through success but through failure. If you really, honestly want to pursue this, know that it's not a game, it's not easy, and even the path to it is going to be hard.

For me, it has been amazing. The most amazing part of peace for me are people like the three people I'd like to tell you about. The first is Abdirahman Raghe, a Somali man who lived through horrors you can't even believe. When I joined Interpeace in 2004, Raghe was the one who decided whether I was going to join or not. The organization said, "If this guy doesn't want you, then we're not going to hire you." For whatever reason, he decided that I was worth bringing on board. Then for the next nine months, this man took me throughout Somalia: to Mogadishu, up to Garowe in northeastern Somalia, and to Hargeisa in the northwest—places I could never have imagined going. That was after living in Kenya for four years. In my mind, Somalia was the scariest place on the planet. I didn't know what this guy was getting me into, but what he showed me in those nine months as he took me all over, introduced me, and got people to believe that I was the right fit for what he was trying to do, was a different Somalia. He showed me a peaceful Somalia. He showed me the non-headlines version of Somalia, which we have no access to. There's no way that you can see what I was able to see without being with somebody like this. He also showed me that I have no reason to be pessimistic about Somalia or anywhere else in the world when somebody that's lived through what he has is optimistic. That's powerful, and that allows me to come back here and say, "Somalia will find peace." They've already found amazing levels of peace. You don't know that, but the Somalis and I know that. They're inspired and optimistic, and so I'm going to be optimistic too, not just because they're convincing me to believe but because I've seen it.

Dr. Naasson Munyandamutsa, a Rwandan, is one of the most beautiful people I've ever met. I worked with him until he passed away from cancer two years ago. Raghe, in Somalia, also passed away from pneumonia one year ago, so I've lost both of these beautiful people. Dr. Naasson was educated in psychiatry in Switzerland and came back to Rwanda to help his people get through the trauma of their genocide and direct a local organization that Interpeace partnered with in Rwanda. He and his wife, who is also a psychiatrist, are beloved throughout Rwanda.

I also want to tell you about Ana Glenda Tager from Guatemala. She also has been through a horrible civil war and is another remarkable human being. These three people have touched my life and shown me that it's not about me. It's not about my version of peace. It's not about my desire to help the world. It's about paying attention to people like these people. If you decide that you want to get out in the world, don't get out in the world and look for recognition. Get out the world and recognize those around you because, if you meet people like these three, it'll change your life and inspire you.

Failure is a part of the process, and there has been lots of failure for me. I think because I'm an engineer I had confidence; I couldn't think of failures that couldn't be fixed. The question was: could I endure the backlash that I was going to get for the failures before our team could fix them? The first thing I did was to really ask the Kenyans (and the Somalis later on): "Are we ready to fail? Because if we're ready to fail, then, first you have to know that I'm not going to blame you for any failure. I, as the director, will take responsibility, or we can take it collectively. I'm not going to hang you out to dry. Second, are you committed to fixing whatever we screw up?" Those Kenyans were ready for that. They loved that because a lot of the rejection that people like me had of their ideas was that they weren't confident that they could work, and they didn't want to take the risk. I was ready to take the risk if they also were ready to really take the risk. When you enable others to take risks, you don't penalize them for the failures of taking those risks. They manage the risk much more effectively than if you're forcing them to take risks that they're not confident in. You get built-in mechanisms of risk management by empowering people and working collectively. I always say, "I'll take the hit if we fail, and I'm going to let you guys have all the credit if we succeed because this is coming from you." Then you have to live by that. I always told my staff, "There are going to be times where I'm going to forget that I told you to hold me accountable, and I'm going to get upset when you try to challenge my leadership." I said, "Don't listen to me in those times. Just challenge me." You've got to empower people, and then you've got to make sure that there are built-in mechanisms so that you're not going to fall back on the easiest way out of a problem: authority.

For me, it's always been about trust. I've known those three people, Raghe, Dr. Naasson, and Ana Glenda, since 2004. Ana Glenda is still around and doing amazing work now in Central and South America. Every one of them at one point or another felt betrayed by me and felt that I had a Western agenda, a colonizer agenda, that the trust that they decided to put in me was a mistake because I said something that I didn't mean to say or I did something that I didn't mean to do. I had no idea that I was doing it or saying it. Because there was trust, the backlash was harmful. I mean that I say I have scars on my back from these people. You've got to be ready to wear those scars, and I thank them for their honesty and fearless challenge of my intentions because I was able to learn from my missteps and ensure them

that it wasn't my intention. It still took a long time to regain their trust, and that's the burden that we carry if we want to get involved in the world and accept there will be suspicions as to our intentions.

For me, peacebuilding is really about moving societies incrementally away from violent conflict. They move away from violent conflict in small steps, not in big leaps. We want to see results, right? The reality is that peace is not a linear path from conflict to peace. It's a messed-up, circuitous path that sometimes goes backwards before it can go forward again. It's incremental, but, as I tell people who are willing to listen, one step away from a really bad violent conflict is still a really bad violent conflict. Two steps away, you might have a little less violence, but you still have a really bad situation. It's really hard for us living in a pretty privileged part of the world to accept the fact that progress can look really ugly. Most of the people in peaceful contexts aren't ready to accept an ugly, incremental step as success. In fact, I've been through many different ugly, incremental steps and, in total, after 15 years, they're pretty beautiful, and they're clearly of interest to those who fund peacebuilding. Unfortunately, donors still want to see fifteen-year successful processes achieved in one or two years. They're still not getting the fact that the path to peace is slow and incremental. We build peace through reconciliation and social healing. We do it through institution building and do-no-harm development. We do it through political, economic, and social transformation, and we do it through innovation, peace tech, peace arts, and peace engineering.

In the peacebuilding that I've been involved in, we don't even go into a country unless we're invited by the people of that country. Key individuals within the country who have come to appreciate our work in other countries and believe we are committed to peace are the ones who come to us seeking our support. The last thing countries in conflict or coming out of conflict need is another organization to come in and exploit their hardships. After we've gotten a call for support, we do an assessment to see whether this really makes sense for us.

We don't want to be somewhere where what we have to offer doesn't match their needs. After that, we are always trying to identify the local team, the local institution, the local individuals that are going to drive the process because it's not our role to drive the process. If we don't have the right local teams, then, ultimately, we're not going to be able to support ways forward for peace. Then we get into the interesting part, which is the strategy design. That's when we use the local teams' insights and understanding and guide them through a strategic design process or let them guide us through a process, depending on who has the strongest sense of the best methodological approach to take.

Next, we start to engage the population. When I say "we," I don't accompany, monitor, and evaluate the local teams. I recognize that what will come out of their work will be evidence of whether we're succeeding or not. They're basically getting out into the country and identifying key representation, getting the broadest and most inclusive representation, both horizontally from the marginalized to the privileged and vertically from the political elite down to the grassroots. The broader the horizontal axis

and the deeper the vertical axis of engagement, the more likely it is that change is going to happen. It's that group of stakeholders that starts to set priorities that we then turn into recommendations. Then there's the implementation. If you compare this peacebuilding process to a common engineering cycle, you'd see that an engineer's idea of planning is to design the project. It's not about engaging with the context. That's changing, but oftentimes in common engineering, we still find that a large part of the planning is trying to understand the complexity of the engineering problem, not the complexity of the socio-political dynamics of the community or society.

There were times when, because I was an engineer, I could see engineering opportunities: constructing a three-story parliamentary building in Somalia, doing road irrigation in Liberia, creating peace centers in Timor-Leste. These were times when my skills and my ability to engage directly with engineers in these countries was very helpful, but there were many times when the solutions dealt with public fund management, how the taxes they collect were going to be more transparently used to deal with the issues within the country, or with local governance, how they were going to allow the mayors of towns to be held more accountable by the people in a more participatory type of government. These are things that an engineer doesn't necessarily think that they have the skills for. What's very interesting is that processes of change can benefit from the thinking of an engineer. As an embedded part of a peacebuilding team, even if I'm not fully conversant in electoral processes or constitutional reform, I was able to bring in experts who would support our efforts and who would come in through our lens and our process so that we could make sure that they were coming in not to dominate, but rather to support.

As we combine peacebuilding and engineering, we ask, "How do we put on our peacebuilding lens and innovate?" I don't believe that technology should disrupt societies into peace. I believe that technology should be a tool that peacebuilders can use to broaden the engagement and amplify the voices of the people. We're seeing a lot of examples of that around the world. One project of this type that I'd like to share with you is a collaboration between a computer animator and a peacebuilder. There are two men in Damascus, Syria, who came together and started creating animation for peace in their country and putting it on YouTube. After a while, they started to get a lot of likes. In one case, one video they did together got over 20,000 likes, and they realized that they didn't know who these people were and couldn't interact with them. They tried to reach out to some of the people that were following them, but they couldn't establish an online dialogue. They then came to Build Up (<https://howtobuildup.org/>) and shared this idea they had and asked if we could support their development of a more interactive way to use this technology. We helped them to think about this: instead of having a full story from beginning to end, have a part of a story. Instead of the animation being in a book they'd already written, we suggested, "Let it be the first chapter in a book for which you have no idea about where the story's going to go. Instead of taking a survey to decide where it's going to go, turn the protagonist of the story into a chat bot

that reaches out to the viewer in the middle of the story and asks the viewer, ‘What should I do next as the protagonist?’” They came up with this awesome storyline. We were able to integrate the bot into it by creating algorithms so that the bot could be responsive. The bot asked at the end of the communication with the viewer, “How would you like this story to move forward?” We were crowdsourcing the way forward in that story. Being done by Syrians, having a style of animation that was quite powerful but very much something that they knew would resonate with the Syrians, and having a storyline that was totally embedded in the Syrian experience was what made that tech innovation so special. We were able to give them some coding support and some thinking around how they could get greater engagement and greater interaction between the viewers and their message.

A project that I've been involved in since 2004 is in Somaliland, which is an autonomous part of Somalia. There, they've established their own homegrown democracy, and they have their own electoral commission. They ran their own elections and then wanted to strengthen the technical election process. They invited us in to support them, already knowing we weren't going to impose ourselves on them. They wanted to establish a voter registration system because, until then, they were just inking fingers. In a lot of countries where they don't have the sophistication to register voters, they use indelible ink on the fingers of voters. It would take days to rub off. The problem is that technology stagnated, and the sophistication of people to get that ink off of their fingers got better and better. We got to the point where the electoral commission wanted to use the strongest ink possible, with 25 percent silver nitrate, which is actually illegal in the United States. It's toxic. This was a case where I knew it was wrong. We told them it was wrong, but we weren't going to refuse. They were going to do it anyway.

The people still got the ink off their fingers. In Somaliland, the young people said, “Make sure you vote today and vote often.” It was almost like a game. How many times can they vote in one day? The cool thing about it is that all the young people were doing it, so it really didn't favor any one side, but the bad part about it is that they were really corrupting the system when they were trying to make it stronger. With our support, they explored biometric voter registration. In 2017, Somaliland, which isn't even a formal country, was the first place in the world to introduce iris-scanning voter registration. I was central to that work. In fact, I'm a consultant for their electoral commission now, and, on Tuesday, I'm going to Nairobi and from there to Hargeisa in Somaliland. We'll be working with them as they move forward onto the next elections. That was a locally driven, technologically focused intervention that I was so happy to support.

In Mogadishu, Somalia, there's still a lot of destruction and car bombings. There is a lot of incursion of the extremists. They're called Al Shabab. They're related to Al Qaida, and they're no joke. They continue to wreak destruction on Somalia's largest city. However, if you look beyond the signs of destruction in Mogadishu in photographs, you can see something new: communication towers. Not

military installations. Not government installations. Not embassy installations, but private-sector telecommunications. In Somalia, I get better cell phone coverage than I do in San Francisco because, in San Francisco, you have to pay to put up repeater antennas to make sure that you have full coverage. Verizon, Sprint, and AT&T have to put out a lot of money to get antennas everywhere they need to get the full coverage of the city. In Mogadishu, you don't have to pay much at all, and there are antennas everywhere. Of the entire adult population in Somalia, 52 percent have a mobile phone. I guarantee you that if I had asked you beforehand what you thought that percentage might be, you'd probably have guessed a lot lower. In a place like Mogadishu, it's even much higher than that, and these mobile phones are almost all smartphones.

Smartphones are a tool in one of the most impoverished and war-torn countries in the world because there is a fiber optic line that runs along the Indian Ocean coast that has three terabytes per second of internet speed running through it, and it's getting pumped into East Africa. Every coastal country has access to this line; even landlocked countries like Rwanda have access. I can stream Netflix in Mogadishu, which I'm pretty sure you wouldn't have guessed. What's cool about this is that the people that make this happen are all Somalis: engineers, businessmen, and telecommunications companies. They're the only ones who have had the understanding and the guts to do this because, to put in this kind of infrastructure and maintain it, you really have to understand what's going on, and they do. They're hungry for business and progress. Four thousand Somali businesspeople own shares of Hormuud Telecom, the largest of the telecommunication companies. Somalis are fantastic businesspeople. While that's all happening in Mogadishu, Somalia is also a very nomadic society. Out in the countryside, which is largely what Somalia is, there are nomadic camel herders. I've seen them using smartphones to find out where the next grazing areas are and where the next water points are for their camels. It's quite remarkable. They created apps themselves. They got Somali coders, young men and women coming out of Somali universities, creating apps so that camel herders can communicate with each other. This is what you're not seeing when you see images of Somalia, right? What you see is the death and destruction. There's no question that the death and destruction have to stop. My friend Raghe is one of the people who dedicated his life to stopping the violence. But projects like the telecommunications network I've described here are actually what's happening inside Somalia but invisible to those outside its borders.

So, this is what's happening. This is my journey, and this is the message I want to leave you with: It's not about changing the world. It's about understanding it.