

TEDTalks, Daniel Kish

How I use sonar to navigate the world

00:12	(Clicking) I was born with bilateral retinoblastoma, retinal cancer. My right eye was removed at seven months of age. I was 13 months when they removed my left eye. The first thing I did upon awakening from that last surgery was to climb out of my crib and begin wandering around the intensive care nursery, probably looking for the one who did this to me. (Laughter) Evidently, wandering around the nursery was not a problem for me without eyes. The problem was getting caught.
01:09	It's impressions about blindness that are far more threatening to blind people than the blindness itself. Think for a moment about your own impressions of blindness. Think about your reactions when I first came onto the stage, or the prospect of your own blindness, or a loved one going blind. The terror is incomprehensible to most of us, because blindness is thought to epitomize ignorance and unawareness, hapless exposure to the ravages of the dark unknown. How poetic.
02:01	Fortunately for me, my parents were not poetic. They were pragmatic. They understood that ignorance and fear were but matters of the mind, and the mind is adaptable. They believed that I should grow up to enjoy the same freedoms and responsibilities as everyone else. In their own words, I would move out – which I did when I was 18 – I will pay taxes – thanks – (Laughter) – and they knew the difference between love and fear. Fear immobilizes us in the face of challenge. They knew that blindness would pose a significant challenge. I was not raised with fear. They put my freedom first before all else, because that is what love does.
03:00	Now, moving forward, how do I manage today? The world is a much larger nursery. Fortunately, I have my trusty long cane, longer than the canes used by most blind people. I call it my freedom staff. It will keep me, for example, from making an undignified departure from the stage. (Laughter) I do see that cliff edge. They warned us earlier that every imaginable mishap has occurred to speakers up here on the stage. I don't care to set a new precedent.
03:40	But beyond that, many of you may have heard me clicking as I came onto the stage – (Clicking) – with my tongue. Those are flashes of sound that go out and reflect from surfaces all around me, just like a bat's sonar, and return to me with patterns, with pieces of information, much as light does for you. And my brain, thanks to my parents, has been activated to form images in my visual cortex, which we now call the imaging system, from those patterns of information, much as your brain does. I call this process flash sonar. It is how I have learned to see through my blindness, to navigate my journey through the dark unknowns of my own challenges, which has earned me the moniker "the remarkable Batman."
04:46	Now, Batman I will accept. Bats are cool. Batman is cool. But I was not raised to think of myself as in any way remarkable. I have always regarded myself much like anyone else who navigates the dark unknowns of their own challenges. Is that so remarkable? I do not use my eyes, I use my brain.
05:16	Now, someone, somewhere, must think that's remarkable, or I wouldn't be up here, but let's consider this for a moment. Everyone out there who faces or who has ever faced a challenge, raise your hands. Whoosh. Okay. Lots of hands going up, a moment, let me do a head count. (Clicking) This will take a while. (Clicking) (Laughter) Okay, lots of hands in the air. Keep them up. I have an idea. Those of you who use your brains to navigate these challenges, put your hands down. Okay, anyone with your hands still up has challenges of your own. (Laughter)
06:10	So we all face challenges, and we all face the dark unknown, which is endemic to most challenges, which is what most of us fear, okay? But we all have brains that allow us, that activate to allow us to navigate the journey through these challenges. Okay?
06:35	Case in point: I came up here and – (Clicking) – they wouldn't tell me where the lectern was. So you can't trust those TED folks. "Find it yourself," they said. So – (Laughter) And the feedback for the P.A. system is no help at all.
07:04	So now I present to you a challenge. So if you'd all close your eyes for just a moment, okay? And you're going to learn a bit of flash sonar. I'm going to make a sound. I'm going to hold this panel in front of me, but I'm not going to move it. Just listen to the sound for a moment. Shhhhhhhhhh. Okay, nothing very interesting. Now, listen to what happens to that same exact sound when I move the panel. Shhhhhhhhhh. (Pitch getting higher and lower) You do not know the power of the dark side. (Laughter) I couldn't resist.
07:59	Okay, now keep your eyes closed because, did you hear the difference? Okay. Now, let's be sure. For your challenge, you tell me, just say "now" when you hear the panel start to move. Okay? We'll relax into this.
08:19	Shhhhhhhh.

08:23	Audience: Now. Daniel Kish: Good. Excellent. Open your eyes. All right. So just a few centimeters, you would notice the difference. You've experienced sonar. You'd all make great blind people. (Laughter) Let's have a look at what can happen when this activation process is given some time and attention.
08:50	(Video) Juan Ruiz: It's like you guys can see with your eyes and we can see with our ears.
08:57	Brian Bushway: It's not a matter of enjoying it more or less, it's about enjoying it differently.
09:03	Shawn Marsolais: It goes across. DK: Yeah.
09:06	SM: And then it's gradually coming back down again.
09:10	DK: Yes! SM: That's amazing. I can, like, see the car. Holy mother!
09:21	J. Louchart: I love being blind. If I had the opportunity, honestly, I wouldn't go back to being sighted.
09:27	JR: The bigger the goal, the more obstacles you'll face, and on the other side of that goal is victory. [In Italian] (Applause)
09:50	DK: Now, do these people look terrified? Not so much. We have delivered activation training to tens of thousands of blind and sighted people from all backgrounds in nearly 40 countries. When blind people learn to see, sighted people seem inspired to want to learn to see their way better, more clearly, with less fear, because this exemplifies the immense capacity within us all to navigate any type of challenge, through any form of darkness, to discoveries unimagined when we are activated.
10:39	I wish you all a most activating journey.
10:45	Thank you very much.
10:47	(Applause)
10:55	Chris Anderson: Daniel, my friend. As I know you can see, it's a spectacular standing ovation at TED. Thank you for an extraordinary talk. Just one more question about your world, your inner world that you construct. We think that we have things in our world that you as a blind person don't have, but what's your world like? What do you have that we don't have?
11:21	DK: Three hundred and sixty-degree view, so my sonar works about as well behind me as it does in front of me. It works around corners. It works through surfaces. Generally, it's kind of a fuzzy three-dimensional geometry. One of my students, who has now become an instructor, when he lost his vision, after a few months he was sitting in his three story house and he realized that he could hear everything going on throughout the house: conversations, people in the kitchen, people in the bathroom, several floors away, several walls away. He said it was something like having x-ray vision.
12:02	CA: What do you picture that you're in right now? How do you picture this theater?
12:09	DK: Lots of loudspeakers, quite frankly. It's interesting. When people make a sound, when they laugh, when they fidget, when they take a drink or blow their nose or whatever, I hear everything. I hear every little movement that every single person makes. None of it really escapes my attention, and then, from a sonar perspective, the size of the room, the curvature of the audience around the stage, it's the height of the room. Like I say, it's all that kind of three-dimensional surface geometry all around me.
12:50	CA: Well, Daniel, you have done a spectacular job of helping us all see the world in a different way. Thanks so much for that, truly. DK: Thank you.
12:57	(Applause)