**Making the Arts Accessible - Transcription**

Episode 13: Tim Yates

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AG: So in this episode of Making the Arts Accessible, I am delighted to be talking to Tim Yates. Tim is a musician, a lover of weird electronic music, an audio expert, and he works with Drake Music. And in that organisation, he's involved in creating, and coordinating other people who create instruments for people with disabilities and help people make music together. Would that be a fair description of you, Tim? And welcome.

TY: Yes. Hi, Alice. Thanks for having me. That's more or less what we do. So I run the research programme at Drake Music and our overall mission is that we work at the intersection of music technology and disability. We do lots of different kinds of work with a long-term goal of a vision of making it possible for disabled and non-disabled people to make music together as equals. The bit that I'm responsible for is the research and innovation program, which is all about making sure that everybody can have an instrument they can play. So that can be, sometimes we develop our own instruments, we work with other people to develop instruments, we run grassroots groups to bring technologists and musicians together, and we work with the audio tech industry to try and make the stuff that everybody has that's available in every shop more accessible. So we've got a kind of fairly broad program trying to tackle this from lots of different directions.

AG: Amazing. And can you just go back a bit, Tim, and just sort of describe how you came to end up at Drake? Like, what's your background in music and audio?

TY: Sure. So, yeah, so I'm actually, a classically trained musician originally, but I also used to be a programmer. And so during my classical training, I decided I didn't want to be a classical musician anymore. And I kind of, I took up building interactive instruments, installations, that kind of stuff. I ran a laptop orchestra, those kinds of things. So I kind of combined technology and music…

AG: Can I just stop you there? What's a laptop orchestra – it sounds brilliant.

TY: Okay, a laptop orchestra is basically a kind of collection of people with laptops making networked performances, trying to find different ways for people to perform together in kind of new and innovative ways using kind of networked hardware and software. So I was kind of interested in building, and I still am interested in building instruments that require more than one person to play. So I would interfaces across different machines and you'd have to have more than one musician playing at the same time. to make a sound and things like that. Just trying to kind of explode the idea of what an instrument is and how it can be, you know, how you can play one and the kind of music that you can make as a consequence.

AG: Wow, that's really interesting. I've not even thought of a musical instrument that more than one person has to play. I mean, I suppose I'm just suddenly thinking of going back to existing instruments. It’s like when you have a duet at the piano and there's something fun about being side by side and playing in that way.

TY: Yeah, so those kinds of things I'm really interested in. When I was a classical guitarist, you kind of get locked into a very narrow pathway and I was really interested in you know in kind of practice and the history of it. I was really interested in kind of exploding that and just seeing you know how else could we do things that might be interesting and might kind of result in different kinds of music that you know come out of it.

And that kind of skill set, or doing that kind of work led me to then be employed as Drake Music, initially developing instruments for one of the one of their programs, and then I just kind of gradually got more and more sucked in because it's a great place to work and the work is so interesting. So now I find myself spending a lot of my time doing that. But really, my practice as a creative musician and as a technologist and Drake Music is all kind of one large practice that all more or less kind of focuses on the same kind of thing.

AG: Yeah. And I with a lot of the instruments that Drake Music helps develop, do you have close links with places where people can play them together. So, for instance, like the Paraorchestra - I think you've worked a lot with places like that?

TY: Yes we do. I mean, the basic approach we always take is a co-design approach, which means that we essentially, we work with the musicians themselves, to meet their requirements and their access needs. There's a long and undistinguished history in accessibility in general of engineers deciding that they know what the answer is for accessibility, building something in a workshop somewhere and then presenting it to the world as the answer and it turns out to be useless and nobody wants it. That happens all the time so our approach is always to work with an individual musician to find out precisely what they need for their genre of music for their access requirements those kinds of things because then you know that you're going to end up with a successful thing. And then that ideally then generalizes to more people if it works for one person it will work for other people.

So yes, we do a lot of work with Paraorchestra. In particular we did a hackathon in partnership with them and Sony in September which was a really exciting project. Sony brought engineers from seven of their different companies: Sony semiconductors, Sony Global, Sony Europe from all over the world. And we teamed them up with one musician from Paraorchestra really to just design new and exciting things meeting that particular musician's requirements. So some of those things were explicitly to do with access. Some of them were to do with furthering their practice. It was really broad remit. But as a result, it was only a three-day hackathon, but there were five or six really, really strong and interesting things that came out of that that are continuing to be developed.

There's a lot of potential in technology at the moment to solve many of these problems. And they’re actually very tractable. A big part of actually what we're trying to do is to just put the infrastructure in place to support the work happening in the first place and then when it does happen, to kind of get it out to the people who need it which is also a massive problem but yeah it's actually really exciting because you know a lot of the people that build instruments for us come from the maker movement you know makerspace and those kinds of things there really is a massive democratization of technology especially at this kind of level that means that things that might have required a team of people with electrical engineering PhDs 20 years ago really can be done by someone with an Arduino and an enthusiasm now. So that's really very exciting.

But the downside to that is getting that work out into the world. Previously, that work would have been done in the context of maybe a company or corporation who would have the means to then distribute it. Now, because it's more grassroots, that stuff, that's way harder. And so a lot of what we're trying to do is to bridge that gap.

AG: And building those relationships with the companies like Sony and everything surely is part of that, isn't it?

TY: Exactly right, it is. It's a massive part of it because they know how to do that. There's a real sense at the moment, and it's really genuine amongst the tech industry, that they want to solve these problems. They want to make their stuff more accessible, but it's not always obvious how to do that. And so working with those organizations is really valuable. Ultimately, there's always going to be an element of bespoke solutions in this domain, but what you want is for that bespoke component to be as small as possible and for the standard ‘off the shelf’ stuff to be as accessible as possible so that you have to do as little bespoke as you can manage, because that's always going to be challenging. It's always going to be more expensive than an off the shelf solution.

And so really to get to really kind of start addressing these problems systemically, we need to get both sides of the sector working together in that way to really solve those problems, which is achievable. It's not easy, but it is doable.

AG: Yes, amazing. And it’s so essential that you start from the person first of all and there's even like a call out on the website isn't there on the Drake Music website saying if you want to play an instrument and you have a disability come to us and talk to us and we’ll get going on something and try and match you with someone, is that correct?

TY: Yes exactly right. So we run a programme called DM Lab which has been going for well over 10 years now which brings disabled musicians and technologists together. And that is really specifically to address that problem - it's not always easy or obvious at all if you need an instrument to know where to go. So we're trying to provide at least a way in so if somebody needs something or wants something, there's somewhere they can go, have conversations, meet the people who can do it. We have some seed funding available for projects and those kinds of things so that we can get a little bit of money out there so that things can happen. We're also looking to dramatically expand that programme. It is a really valuable thing and we're hoping that it's going to be available very soon in many more places. So watch this space.

AG: And it's interesting to me how it involves also not just the sort of technicians, but instrument makers too. I was looking at a video on the website about is it the Kellycaster for that guy, and he was just saying how beautiful his instrument is because a guitar-maker made one especially for him didn't he?

TY: Yes that's right

AG: So it’s also the aesthetics of it - it's the enjoyment of that beautiful instrument. It's not just a sawn-off, butchered instrument with lots of wires hanging from it. That that's just really important I think.

TY: Yes, that really really matters actually. One of the things that you find in access is often things are medicalized. And you'll get a thing that is ugly and it looks like a piece of medical equipment or it's just an iPad or something. And instruments are so much richer than that as objects. So we run a program we've been running for a long time partnership with the London Philharmonic Orchestra called Orch Lab. We work in residential centres for disabled adults and we take musicians from the LPO in with workshop leaders and a bunch of our technology. And we run music making workshops based on the kind of repertoire of the LPO. But a big part of that is an instrument development program so every year we develop a new instrument co-designing it with the workshop participants and the latest series is a series called the touch instruments and they are designed and made out of the orchestral instruments that the LPO musicians bring with them so that when somebody's doing a duet with a trombonist from the LPO they're actually playing a trombone. I mean it's an accessible trombone - we try and make them as flexible and accessible as possible but it is it's the instrument itself it's made of brass it's got a slide. And that's so important and it's so much more engaging and musical than just kind of swiping your finger across an iPad which is also fine and we do that a lot but to have that additional object with that kind of resonance and meaning really is it's fundamentally important.

So I think when we're developing instruments we really do have to take those kinds of considerations into account. How many different kinds of electric guitar are there? And it matters that one is red with a flame finish and you know it's a semi-acoustic and it sounds a bit more like a jazz guitar that you know one is a B.C. Rich with like lightning bolt shaped and that kind of stuff that stuff is really important and you've got to build that into it - we try and build that into everything we're doing as well.

AG: Amazing. And you were telling me that one of the exciting and important things you're doing is building a sort of database or a collection a central hub where people can find out about all the different types of instruments that have been developed and then perhaps even work on them or adapt them for themselves. Is that right?

TY: Yeah, that's right. So this is the kind of big central focus of our program for the next five to seven years. At the moment, if you need an accessible instrument, it's really hard to find what's out there and to find out how you get one, whether it's commercial or whether it isn't. A lot of the work that gets done gets done in little bubbles. You know, an instrument will get developed for one person in a workshop or something, and it's great, but there's no route out into the wider world for that. So if you're not lucky enough to kind of be next to a DM lab or to be in a school where somebody happens to know about this and most people don’t, it's really really hard.

AG: Sure, I mean you probably don’t even know what words to kind of Google really do you or what route to go down?

TY: That's right. It’s really very hard and very frustrating from our point of view because loads of really good work is being done and there are actually loads of really good instruments out there but it's very hard to connect people so the plan the long term plan is to build have a building with a comprehensive collection of everything that we can possibly get in it, ranging from all the commercial stuff that's out there to as many of the bespoke instruments that are available and put them all in one place. Most of the people who make this stuff really want to share it. They want it to be out there. They want it to be used.

And where people are prepared to share IP, so source code and design files, we'll also host those kinds of things so that people can make them for themselves. We need to find ways that we can make that more available. So just a source code file and a design file probably isn't enough. It's going to need making instructions and things like that. Yeah. But yeah, all of those kinds of things, the plan is to make those radically more available in person, but also online in a searchable database so that anyone anywhere can kind of get access to this.

AG: So it'll be like a music shop, but of accessible instruments that you can try.

TY: Exactly. That's the plan because really you need to try things to know. We're a long way from achieving it. It's a challenging project, but that's absolutely what we're going for because we feel that if we can do that, it really will change the game in terms of what is available to people. And also, you know, inspire people to build the next generation of instruments.

We also want to have a workshop so we can tweak things, we can adapt things when somebody comes and there isn't anything that works for them, which will happen quite a lot. I'm sure, actually, we have the capacity to make those things or at least find the people who can. Because one of the other issues is that nobody really knows what's out there because there's no central place for it. What's missing, what are the instruments that people need, or that aren't being made because everything's so kind of ad hoc in terms of the way it's developed.

And are there instruments that have commercial potential, are there instruments that a large manufacturer could make and there's a market for and therefore by scaling they become cheaper they become more available and you know those things are also massive advantages because affordability is a massive issue in this sector. There's no question bespoke instrument development is expensive and it always will be. And so the more that we can reduce those kinds of costs and make things more available to people, the more successful, ultimately, the more music will get made, the more people will have the instrument that they need.

AG: And I'm glad to hear that you have got people like Sony interested because I'm thinking about it from how these things often then spread into just general practice. Because there are lots of things out there that are so complex, and I'm speaking for myself here. And if you're a musician and you're thinking, I'd love to know how to do that, but it looks intimidating. You just want an easy dial that does a filter or an easy thing that does reverb. Hopefully, then the access spills over into just better technology for everybody as well.

TY: Well, I mean, that's definitely what will happen. I mean, greater accessibility is greater accessibility for everyone. And, you know, surprising numbers of things out in the world actually started off as accessibility things and turned out into general use. The typewriter is one. Apparently someone was telling me the other day that the typewriter was actually invented for somebody who was unable to write. And so many of the things that we take for granted are absolutely developed as accessibility objects. And so the same thing will happen.

AG: And do you see a sort of a greater sort of inclusivity of music groups then? So if someone does play a different type of instrument are they still welcome in their local youth orchestra and stuff like that? Is that happening because I know Paraorchestra obviously is the great beacon of inclusivity but..

TY: Yes, I mean that can be challenging and the thing is the instruments themselves are really important and they're kind of prerequisite but they're not actually enough - you also need repertoire you need to have a kind of education system that has teachers who can teach the instruments, you need repertoire that they can play, you need an exam system.

For instance, can you do your grade seven in MiMU Gloves? Well, right now, it's hard to see how that might happen. But the really encouraging thing is that a lot of work is being done in all of these sectors, actually. There really is a kind of groundswell of effort to make these kinds of things happen. So, you know, there is a long way, I think, between where we are now and an accessible instrument being an integral part of, say, one of the major classical orchestra.

That's probably the most challenging thing because you know it's also about you know the people in those orchestras have been learning since they were small children they've been supported through school orchestras and local youth orchestras and there's an entire system in place kind of set up to support that. And if you haven't got an instrument, you know many of the disabled people that we encounter have never even been in a music class at all because without an instrument to play they're effectively excluded from all music so there's obviously an enormous continuum of different kinds of experiences that people have and different kinds of impairments and things. But yes, there are a lot of challenges and a lot of them are social and a lot of them are to do with kind of the societal structures and kind of general accessibility. You know, is the lift working? Is there an accessible entrance to the building? Can the musicians get onto the stage? Maybe a venue is accessible for audiences, but for a performer it isn't. Maybe the wind section sits on a block on the stage and the there's no ramp up to the block. And so if you're a wheelchair user who's a wind player, you can't play in that orchestra. There's a lot of nuts and bolts practical stuff that still does act as a massive barrier. And then you add that on top of all the instrument and the other stuff as well, and it can be seriously challenging. But there is a lot of work being done and change is happening. It feels like a really optimistic time.

AG: Just on that note, I was talking to someone recently all about access equipment in theatres, and he's an expert in loop systems for assistive listening, and I asked him if most places also have the loop set up backstage so anyone who's a performer that needs the hearing assistance can use it, and he said well often it’s not because I didn't realise this but instrument pickups and things like that can affect the ability of the loop to work, so very often times there's nothing backstage..

TY: Yes, that's right often audience accessibility is considered but performer accessibility is not.

AG: Just going back, you referred there to the MiMU gloves, just to say to people, they're the ones that Imogen Heap pioneered, didn't she? So you can play any sound and be super expressive with it. Can you describe just a couple of instruments that you know of that are really innovative that people might not have heard of? And I heard of the haptic baton as well, which makes sense that a conductor can use.

TY: Yeah, so the haptic baton is a really great project that's made by Human Instruments, which is a guy called Vahakn Matossian who runs that organisation. So that if you're a blind musician and you can't see the conductor, it's very hard to be in an orchestra because you can't get the cue that the conductor gets. So the haptic baton gives haptic feedback to musicians, blind and visually impaired musicians, detecting the gesture of the baton movements and then transmitting it over radio to a vibrating kind of pad, either attached to the wrist or the leg or part of the body somewhere, so that then they can get the beat of the conductor and the nuances of the conductor's movement and thereby be able to play in an orchestra. So it's such a great project and you know it's another one of those ones it's really challenging to get it out there but it's technically possible and it can be done so that's really exciting.

There's a really cool instrument called the Arcana Strum which is a commercially available MIDI controller which is initially designed as an accessible guitar there's lots of really cool videos so that's a really interesting one to check out there's an instrument called the Digit Composer made by an organisation called Digit and they've adapted a motorised wheelchair controller and kind of built a MIDI controller based on that format, the idea being that people who use motorised wheelchairs have a great deal of fine motor control that's very very practised in terms of controlling their wheelchairs and so if you can translate that into a MIDI controller actually that's a really kind of clear skill set into a musical instrument. So they've designed a MIDI controller on that format, which is great. They put a lot of work and thought and care into it, and it's really a well-made thing. So that's one worth checking out.

Another interesting one is the Clarion, which is made by an organisation called Open Up Music. They also run the National Open Youth Orchestra. They also run a lot of open orchestras in schools across the country. I think they've got a large number, 50 or 60 or something like that. And they've invented the Clarion, which is an eye gaze instrument that they use in a lot of their ensembles. Eye gaze means that you use your eyes to control the software. So where you focus your eyes on the screen then is detected and you can have musical results. And that's a great instrument. And they also spend a lot of time working on the repertoire and supporting materials that go with that so that then that instrument works really well within their kind of orchestral and their ensemble setups, which is really interesting. So that's a digital instrument. It is now available It's available only in the UK, but it is available. So you can kind of get that. It's an app, so it's low price and it's really an excellent thing, very low cost and great.

AG: Amazing. And so what are you excited about then that's coming up in the future, Tim, like in terms of Drake music or things that you're working on right now?

TY: Well, one exciting thing that we're working on is we've been invited to be part of the Royal Society Summer Science Exhibition. at the Royal Society in London in July, which is an enormous six-day science show where the general public is invited to come down. There's going to be a whole range of different exhibitions all about quantum mechanics and all sorts of different science and research things. And we're there with a musician, Zen Olenski, who has developed an instrument called the Photosynth as part of our DM Lab program. He was one of our instrument commissions last year. And this is a smile-powered synthesizer So it takes facial expressions and turns them into music as an accessible instrument. So we're going to be there demoing that along with a bunch of our other instruments, which is going to be really exciting. So do come down and see that. That's going to be a great event. We're really looking forward to that.

AG: And didn't you go to America recently?

TY: Yes, absolutely. I've been to America a couple of times recently. So we went to Berkeley College of Music in Boston. Rhoda Bernard runs an amazing conference there called the Able Assembly, which is all about accessible music education. So we went there with a delegation of different organizations, the Musicians Union and UK Music, Falmouth University, RNIB and Sound Without Sight. So that was really exciting, kind of presenting the kind of cross section of work that gets done in this sector in the UK making connections there which is great actually. They're doing fabulous work over there as well so that's really nice. There's a really strong international community of organisations working in this sector and you know it's the kind of connections are starting to build and there's a really strong movement to kind of make change which is exciting.

AG: That's fantastic. I think and going back to the idea of hackathons as well I love the fact that you just get really kind of interested and excited people engaging in things like this, and the fact that it touches kind of arts and science and technology always brings in people who are really fascinated in everything really working together and that's where you get great steps forward

TY: Yes that’s right and I think that's another nice thing about this area is that there's ways in from lots of different angles and we need lots of people with lots of different kinds of experience to make it work. You don't need to be a super duper programmer to make a really valuable contribution. There's so many ways that people can contribute and in a space like a hackathon it becomes really apparent you know the designer is there the look of a thing really matters the physical making really matters the electronic design the code design the musical interaction stuff really matters and then also the creative purpose of the thing you're making really matters so there's you know so there's yeah it's incredibly interesting work and really varied and there's lots of ways in which is which is great it's one of the reasons I love it so much

AG: I can tell! And so to round up, I always like to ask people what would be perhaps one of your favourite or most special memories of making the arts accessible for someone or some people?

TY: Oh I don't know there's so many. But actually one of my recent most favourite memories is John Kelly who came to Boston with us who we talked about earlier with his Kellycaster that he performed - he did the opening concert at the conference. And he is an amazing musician, really amazing musician. And seeing him perform there at Berkeley with his, with his guitar, absolutely smashing it. You know, he sang a bunch of protest songs. He kind of, he brought that, you know, he's been a disability rights campaigner for a long time. He brings that with him and just seeing him perform in that place in that way was just spine tingling, absolutely loved it. So that's, that's my, probably my favourite most recent memory at least.

AG: I love that fabulous. And then are there any sort of places, I mean the Drake Music website obviously is a good place for people to go and look if they're interested in hearing more about this stuff. But are there any other specific websites or things that you want to mention?

TY: Well I mean all of the organisations that I've mentioned have websites so you know they're definitely worth checking out. And with Drake Music we've got a newsletter, we have an event in London, our DM lab is on the 16th of June so come along to that we run those in London every couple of months they also run in Manchester and there will be more coming. So do come along to those. That's a great way to get involved if you're interested and to meet people and those kinds of things. So that's a great way in. Check out the Royal Society.

AG: All right. Amazing. Well, Tim, thank you so much for talking to me. It's such interesting work. And yeah, I can't wait to follow what you do next.

TY: Great. Absolute pleasure. Thanks for having me.

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