

## Interview Transcript

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Interviewee	Interviewee 50 - Learning Consultant, Charles Darwin University, Northern Territory, Australia
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### Research Question

*What are the socio-ethical implications of body worn video camera recorders on society?*

### Research Focus / Outcomes

*This research examines the historical developments and contemporaneous challenges that location enabled body worn camera technologies pose for humanity. The potential benefits, risks or harm on society from body worn camera technologies will inform the development of a socio-ethical framework to provide context, inform and address these issues where gaps in the literature have been identified.*

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Interviewee 50: You went pixelated and then we just lost connection.

Hayes: Just lost it, ok, no worries.

Interviewee 50: That sounds fine now.

Hayes: Yes, all good.

Interviewee 50: Yes.

Hayes: Ok so if you can introduce yourself, I'll introduce myself and then we will move into the questions. Is that ok? So, Interviewee 50 it is 10:04 PM, it is Thursday 29th November 2012 and my name is Alexander Hayes. I am a PhD candidate through the Faculty of Informatics, School of Information Systems and Technology, University of Wollongong NSW Australia and I have with me under the supervision of Associate Professor Katina Michael, co supervision with Teemu Leinonen from Aalto University, and also Professor Michael Keppel co-supervisor from Queensland University of Technology ...I have with me tonight Interviewee 50. Hi Interviewee 50.

Interviewee 50: Hi Alex...how are you doing?

Hayes: Good. So you are happy for us to commence recording?

Interviewee 50: I sure am and I'll just clarify Alex too that we have been working in the space of elearning and online learning for quite a period of time formally with Charles Darwin University and now officially with the [ redacted ] up here in the Northern Territory. I don't know whether that demographic is important to you? Do you want me to answer questions in the context of just my own personal expertise and opinions or in any of those capacities?

Hayes: I think in any capacity you like Interviewee 50. I am keen to hear from all of them and feel free to at any point if you want to break or want to have things restructured or rephrased, feel free to interrupt and we will go from there.

Interviewee 50: Yes.

Hayes: So Interviewee 50, can you give us a bit of a background as to what your current role is and what brought you into this space from the past.

Interviewee 50: Yes, my current role is essentially as an Online Learning Consultant for the [ redacted ] and my job is to influence the [ redacted ] sector in the uptake of information communication technologies and pedagogies with

an emphasis more on the pedagogy and the teaching aspect of it rather than the equipment. The two are to some degree inseparable and my current portfolios are large scale trial with Google applications, carriage of the online course management system which is a Moodle based system. I'm also involved with a major project where we are taking stock of reviewing thinking towards a future vision and directions for learning within the [ redacted ] so that's where I have landed mate.

Hayes: Mmm mmm indeed. It has been a long journey and we have worked together in the past which is a great thing as well. Interviewee 50, I am wondering if you are happy to proceed with the questions in chronological order or is there some particular structure you would like to follow?

Interviewee 50: Lets just go in the order you have there as it looks fine.

Hayes: Ok. Feel free, if you want to have a break just give me a yell. Essentially Interviewee 50, what does the term wearable computers mean to you?

Interviewee 50: Well, it's a great question because it is a term that I have been around for a long period of time. It has had different meanings at different times from the earliest state it was just simply a fashion statement. It was clothing that was made up of computer parts and bits and pieces and what is really interesting about that is that I actually saw Alex, that there was a progression in that because originally it was just that in fact it was a fashion statement and reusing computer parts and circuit boards and that but eventually people started using functionality to that. So it became a fashion statement of functionality and of course now its along a continuum that is highly complex. So I see wearable computers, in their current state meaning essentially augmentative devices that can augment your own physical space that you are in, that can be from enhancing vision, enhancing what you are seeing overalls of data. It can be you know, basically now we are sitting at the point where we are working with a lot of holographic technologies and that as well too. So I see it as all of those things but primarily, centrally, I see it as being an augmentative device to sort of enhance some kind of performance that you need to conduct.

Hayes: That's a very succinct answer. Do you think there are any key differences between handheld, wearable and body worn technologies? Are these terms familiar to you and how do you see it?

Interviewee 50: They are familiar to me. I think the overlay of those terms also is wearable computers in terms of implant, things that you don't see. These computers as becoming part of the human biology and that crossing over. I am trying, maybe give me the three distinctions if you wanted me to comment on those again Alex.

Hayes: Ok. So what do you think the key differences are between handheld, wearable and body worn technologies?

Interviewee 50: Ah I see. We are a right on question 2 if I'd actually looked at it (laughing)

Hayes: No, no.

Interviewee 50: I thought it was an extension of number one. Listen, I think the ultimate difference between them is just proximity...a handheld you can drop, you can leave, you can put down, you can pick up. Wearable, it's more attached to your physical body. Body worn technologies... I am not sure of the exact meaning of that definition but when I think of body worn technologies, I think of stuff that is in a more solid state of permanence on your physical being. I think that the differences between them being, you know, loose devices that you can discard quite easily to devices that are integrally linked. In fact, some body worn devices you can't shed because some of those body worn devices may actually be keeping you alive.

Hayes: Well that's it! Yes, so, we are not just talking about popular smartphone technology. We are talking about a whole range of other technologies as well?

Interviewee 50: You know, biometric stuff that's linking to machines that are keeping you alive or giving you information in terms of blood sugar levels and taking care of yourself.

Hayes: And Interviewee 50, unbeknownst to the audience but they soon know your vast and long association with the concept of mobile learning. In fact, where these technologies have cognisance and where you have actually hosted events and other forums where people come and talk about it, share experiences and similar, so in what way have you been involved in past, current or proposed use of these technologies?

Interviewee 50: Well, my interest sits in two domains. First and foremost my professional domain of education and training. I have had a long held interest in educational technologies and assistive devices. Certainly as mobile phones began emerging, I think back probably around 2005 or 2006, it was becoming so pervasive. With youth uptake and adoption of mobile phones we thought that we ought to actually really begin to interrogate it on an annual basis and so we started [ redacted ] which was a national and indeed international conference that kept looking at the notions of where is mobilised learning really going? We kept our eyes very closely on the Horizon reports ( New Media Consortium ) and often circulated discussion around that, so I guess that really where I initially started in on the educational side of things as I guess if you will, the first of wearable or handheld device that potentially could and at that time we were

playing around with issues like polling, you know just getting peoples opinions, grabbing user feedback, through SMS. We were also exploring different, you know, what flash mobbing could do. Youth getting together and creating events and drawing attention to events and all of that, so the mobile phone to some degree at that earliest point of time was...we were just toying with being able to actually get user feedback or user input into questions and polls. We were sort of getting into could we actually use these to do any type of assessment? One of the things that started happening with the phones own capacity to take photographs and record voice and you know, send these little gems back and all of a sudden we were into another realm or level of the handheld or mobile phone as a possible assessment device. I think that's really where things were going about the time I met you Alex. You were very interested in those devices also connecting into accessible spaces online, you know blogs, wikis. How in real time and this is really what we were doing at that time was actually capturing real time events and data and getting it up online, and sharing it and tagging it and making it accessible. I think what we were doing at that time is that we were helping the average person have global reach and very much in a real time kind of environment. I think that from an educational perspective we started to see students being able to do that and have expectations that they can do that. We saw a huge shift from students and learners who had previously just been recipients of information that was given to them, we then saw them as wanting to and being able to co-create, be creators of things. I remember at a major elearning showcase event that I think you convened in Sydney and I think it was George Siemens who was speaking at that. I remember he hurled it and the point of view is that the fora was big people talking to little people, now its little people talking to lots of other little people. Its that liberating effect and I think that what has happened is that particular process has really disrupted education. Education, the model of education still has been steeped in the teacher as the expert and that the big person talking to little people so we have been going through this huge, huge process of just keeping our eye on that and of course it has just grown exponentially The collaboration tools that are available and one of the big things is just the volume of free tools. We were using them tonight for an earlier meeting, you know the whole Google Hangouts capacity and for no costs you have got 9 people who can meet with online in real time video conferencing that was quite expensive.

Hayes: I just notice that it has been published...sorry to interrupt. I just notice that it has been published about a minute ago, already.

Interviewee 50: That's right so it's broadcast through Youtube and that so we see that continued growth. What I see happening is that it is a real disruption to some old systems that have been in place and working in the sector. It's quite amazing how slow the sector is to grapple with and deal with that level of disruption.

Hayes: It's been a big shift.

Interviewee 50: The other area that I have been involved in is the creative arts sphere and in fact the original [ redacted ] was really wrapped around musical performance and where that is going. It is pretty amazing to be on stage with something not much larger than a mobile phone and being able to have all your tracks and resources and mix yourself live on the sessions. So now when I am performing and I feel like a little bit more of my vocal in my monitor I just bring it up because it is right down there in front of me. What these devices are letting us do is quite incredible and one of things I am yet to do is and I've talked about this with our band is begin wearing and using wearable devices. What we want to do is use point of view cameras for when we perform so what goes up on the screen. Not always visions and shots of all the artists performing but what the artists are seeing as they perform.

Hayes: Hmm hmm and also maybe frets and fingers.

Interviewee 50: Exactly that, but also that beautiful view of what we see in as how the audience is responding to us. Capturing that for a performing artists is really powerful because you can review it later. Sometimes you perform and don't see the people in front of you to because you are concentrating on so many things at once, so being able to do that is so powerful. Wearable computers and recording devices really are all, you know, it's an exciting time to be around really.

Interviewee 50: Interviewee 50, on the topic of the handheld wearable or the body worn, what do you think some of the benefits, risks or harms could potentially be for users of this technology?

Wade: Well the obvious. Then there is a bit in the news and legislation that is just the disruption, like if you are doing an important task like driving or almost anything that requires or has safety concerns. There is a possible risk that these devices will draw you attention away and cause accidents or serious human error mistakes because you are distracted by something. I think there is an inherent risk in some of the high end wearable computers that you are involved with where there is critical...where you actually have to have that information or you may be at risk and you know there is risk of failure. Any of us that have been around technology long enough, we just know it. It is inevitable that stuff is going to break, that something is going to glitch out on you. I guess that there are some potential downsides to over dependence on devices. I do think there is a risk of disconnect from present space and place. I'll just give you an example Alex of this. A year ago just down on, there is a beautiful jetty, the famous nightlife jetty in Darwin and the most spectacular scenes that we get, the kind of things you only get to see a few times in your lifetime. This was going on, this incredible sky and everybody was mesmerised by it and there was

massive wave action happening on the shore. There is somebody there and they are completely missing it, filming with their wearable computer and so that's a curiosity. Do you or is there a risk of losing the present moment, so engaged with being connected elsewhere from where we are actually currently connected to?

Hayes: ...and it was interesting there that you drew a parallel between people connected but ostensibly they were elsewhere. They were connected in but they were elsewhere and missing what there was in reality.

Interviewee 50: Yes, it's the connection disconnection paradox really isn't it.

Hayes: Well it is one way of looking at it for sure. Are there any other...actually I forgot to mention there, are there any other proposed uses? You talked there about a proposed use in terms of musicianship. Can you see or think of any other sorts of scenarios or any other proposed uses?

Interviewee 50: Sure, but we could talk a long time on it. There is obviously health benefit issues and I think that there is also opportunities for and you have seen this in the travel market for the breaking down of cultural barriers when you have an assistive device that is helping you talk and speak in a different language, very useful. The obvious and huge impact is just geo-assistance, how can you find stuff and how can you find information about stuff that you are looking at. So all that augmented reality stuff that is capable to extend an experience, get you somewhere where you need to go, get to there safely, help you make critical decisions. In terms of future, the sector that I have been a bit surprised about this Alex, I don't think that some of the training sector has adopted wearable technology and wearable computers as much as I would have thought. There is a lot of work for point-of-view technology and how that could be utilised for gathering assessment evidence of students particularly in vocational and competency based training. I still think there is a lot of room to go there but I think the issue really that has been, it is peoples concern for storage, how to serve it and bandwidth, choking bandwidth. I think there is still a lot of room for education and training to take that on board.

Hayes: So when you say storage are you talking about where these devices, sensors create data and the data needs to be transferred somewhere so it can be visualised or reviewed?

Interviewee 50: Yes. I am talking about the centralised repository kind of notion and it still amazes me to be honest that I have discussions with the information and technology arms of organisations that are still talking about "...well that is going to cost a lot to stop that" and I just keep thinking you know I can walk out for \$50 and buy a 5TB drive.

Hayes: That's it.

Interviewee 50: Personally, so why is that an issue for them? I still struggle and I think what that is doing is driving this huge and current interest and wave of putting everything in the cloud and offline in a significant amount of those storage challenges.

Hayes: Definitely, Interviewee 50 there are concurrent issues that we could go on all night about I'm sure...Interviewee 50, in terms of this is slightly switching it slightly but what do you think the term location enabled means? What does it mean to you, location enabled within the context of location enabled body worn technologies?

Interviewee 50: Well I understand location enabled meaning your allowing others to acquire your geolocation and data so that is what I understand location enabled to mean. If you have got something on you and you are engaging with an application or an environment elsewhere that essentially you are trackable in that moment. I'm always curious about location enabling (laughing) you know from my point of view, most applications will ask you, they will say, Twitter is asking for access to your location right? Where you are as an example of that and certainly what I find curious about it is that I really do ask why is it relevant? Is it really necessary and I might be a little bit more old school on this but I'm not always sure I want to be broadcasting my location.

Hayes: So if, just on that point, do you...the term location enabled that you are talking about it being a geographical point and perhaps it is transmitting or connecting with services that give away that presence or that place where that person is, do you have or do you currently have mobile technologies that you have turned those facilities on?

Interviewee 50: Sure, yes, my iPhone, my iPad. I've certainly enabled that at different times and often when I'm taking photos I like to enable that because it save you a little bit of extra effort on the geotagging side of things. When you want to upload data ...yes, when I think of location enabled I can't help but feel the connection to the issues of a surveillance society. Why is it so necessary to broadcast your actual location? On the other hand, I mean, the location enabled is an incredibly powerful metaphor and in the past I have thought about this in the context of remote and Indigenous Australians (Aboriginal). The environment where I am engaged in where the land or country is the source of the story. The simple fact that if you are telling a story you are telling it in a photograph and if you do location enable, the location and the spot is identified. It probably should be identified with the story you are telling at the time or the image you are sending up or the video footage and so from a cultural point of view location enabled is a very attractive concept as well too.



Hayes: Well that is something that I'd like to go into a little further when we cover the next question which really you were starting to hint on it there which is, which issues if any, are you aware that involve this type of networked technology?

Interviewee 50: Yes, I mean, I think there are issues of, I think there are quite a few different issues but we should stick with the cultural one for certain. You know wearable technology that is recording experiences and that there is the obvious risk of invasion of privacy. There is also the risk of cultural laws being broken. There are certain environments where there is men's business and women's business in Indigenous culture. I think there is a risk that if we have wearable computers and devices on us, we sometimes forget that we are a walking broadcast station. There are responsibilities that go with that so I think privacy, the risk of cultural invasion...but there is a real curious one Alex and that is, this was brought to my attention from a colleague who has been working a lot in remote environments Dr. Linda Ford and that is naming...on our devices we have to have a name and with students we have to have a true first and last name so we can track their progress, their learning all of that. Well in that culture it's not uncommon in a 12 year cycle of 12 years of schooling for an Indigenous youth to have to change their first name and last name up to three and sometimes four times.

Hayes: Gee...

Interviewee 50: ...because of the passing on of family members and that they have been named after and that they are then not allowed to use that name. It is intense as culturally they are not allowed to tell you what their name was before because they are not allowed to repeat it.

Hayes: Hmm hmm...incredible.

Interviewee 50: So if we have devices that are very linked to us naming them and attaching them to our name and then our person, how do we deal with the situations where in certain cultures they are not a permanent asset of ours? This sort of stuff leads into wearable computers and biometrics and possibly a better way of identifying people.

Hayes: I think there is a minefield that we could go into and being placed where you are geographically there in Darwin (Northern Territory, Australia) that your in proximity to some amazing stories and also some very pertinent things to consider.

Interviewee 50: What do you think then, what impacts have these particular body worn technologies had or in your opinion likely to have on yourself,

educator, musician and other, your colleagues or your industry? Sort of going from you and out.

Wade: Let's start with me, myself. I have resolved to absolutely never answer my phone while I am driving (laughing).

Hayes: Ok right.

Interviewee 50: I have had a couple of, not close calls but where I would have said gee, I am really being distracted here you know, so I'd better get back to you you know so, in terms of an impact there is no doubt that having the connected devices certainly has invaded and even become an occupational health and safety risk to me. I can say and I think this is a pretty common experience for a lot of people that certain tones have a Pavlovian response retain to certain tones. I mean the bloody Marimba! I don't think any of us enjoy the sound of the Marimba anymore (laughing) because for me every time that you are being called in the work environment for a phone call or a blip or a message comes in, you know there is an amount of stress involved with that so I would have to say having body worn technologies and wearable and handheld devices with me all the time you know have certainly added an element of stress when you are all the time in demand. It has required some decision making about setting boundaries and setting barriers to accessibility so that you have time for other things for example. In my own case, in myself, the creative process that I engage in as a songwriter and producer, sometimes you know I can need a solid six to eight hours uninterrupted in mixing and producing of a song. So I have to make those kind of decisions and what is interesting is that there is a bit of shame involved in that because i sometimes feel like you know...should I be more connected, like should I be in these various spaces and my Twitter account more than I am, you know, should I be involved more in posting more to my Google stream so there it is...expectation management you know...what is the right amount you know?

Hayes: Oh, I totally get you.

Interviewee 50: So for me personally that's part of it. On the other hand there has been hugely positive impacts of overcoming isolation. I mean I live in Darwin and there is just over 120 thousand people up here and by global standards I am in smallville (laughing) To be able to monitor and be able to distribute music on a global level and monitoring...like now I am monitoring how some songs of ours are doing on a Miami radio stations. I can do that by walking home and I'm checking it from my device so there is pros and cons and benefits to having the connectivity when you want to, but I think it is about being able to make healthy choices and having the device work for you rather than invade you if that makes sense.

Hayes: Well they are very salient words to me and particularly being a Father of four children...I'm sure you can kind of correlate.

Interviewee 50: Lets talk colleagues and industry hey?

Hayes: Yes, let's do that. What about that, because that is of a great deal of interest to me. I am really keen to hear from you Interviewee 50 and this is a subset question, but, is there likely to be in the near future a point where a learner can using a hand held body wearable technology, capture data, prove that it is them, that the data is where they are standing, it is them because their auditory or whatever...facial recognition? They are also recording some video and sending that to a repository and that being assessed by and assessor and accredited from that learning environment. Do you think that's likely to happen?

Interviewee 50: Oh yes. It's more than likely, it's already happening, you know in certain environments and place just not as pervasive. If your question is, do I think it will become more pervasive then I do think that it will happen. I think what will also happen are robotic analytics around some of that stuff. For example it is already there, so in one training scheme if I give you an example we can, there is a voice training tool for competence. You need to become component on a particular scale and you sing the scale...well you don't really have to send it off to the Professor who is getting paid x number of dollars per hour because there is a little tool right in the device itself you know to give you that instant feedback on performance. I think what is really cool is not only will what you're suggesting might happen but I think there will also a huge growth of assistive and adaptive assessment tools that can do a lot of assessing without the need of a human doing that assessment piece.

Hayes: Right, right.

Interviewee 50: Yes?

Hayes: Yes, yes and that is obviously answering your point there around your colleagues.

Interviewee 50: Yes. I do need to say something about colleagues though and this in the teaching profession in education. What body worn technologies are doing I think is creating a massive divide and it is occurring between adopters and non adopters.

Hayes: Ohh, ok.

Interviewee 50: In the educational field it's about keeping current. Its about being there with devices and technologies that your students are experiencing everyday, so a huge discussion right now of course is what are we going to

about BYOD's and BYOA's in a school environment. There is a lot of divide because, no doubt, there is a cohort and these are smart people. They can find really good rationalisations, they just want to hold it back. They want to stick their finger in the hole in the dyke for as long as they can because it is too disruptive and it is too discomforting and they personally don't want to put in the time and put in the effort to engage with it.

Hayes: So can you just, can we drill down a little bit further into that? BYOD and BYOA. Can you extrapolate that a little bit?

Interviewee 50: The acronyms themselves? Bring Your Own Devices and Bring Your Own Applications, right?

Hayes: Right.

Interviewee 50: So school systems generally like homogeneity and in the digital education revolution that's been happening here in Australia, where we want to roll out a device to every student, many of the schools again are managing that from a homogenous point of view. They want all kids to have the same device and the standard central operating environment.

Hayes: So sort of brand centric?

Interviewee 50: Yes, yes. You know it's about the fear because the issue is, can we support it? Can we protect them? Can we honour duty of care and assure that they are being educated in a safe environment? They are in a cyber-safety kind of environment and now all of a sudden a rollin of bring your own device and bring your own application, you know the control just isn't there.

Hayes: Ah ha.

Interviewee 50: Yes?

Hayes: Yes, look.

Interviewee 50: So unpacking what that means is then what really is the role of a school and an educational system. Is it really about learning or is it about controlling the learning (laughing)?

Hayes: Mmm.

Interviewee 50: You can do your project or assignment using 23 or 24 different applications and your favourite happens to be one you have on your iPad mini that you just got. What does it matter whether you submit the assignment in that? The education system is freaking about that because they say well you

know how will I? I can't be sure that I can read that file format or we can't protect whether or not that device has access to Youtube of all things? It's really disruptive and it's quite different concerns and these are...I am not really talking about high level body worn technologies. I'm pretty much just talking about hand held and carrying devices you know...

Hayes: What I'd imagine what your talking to there is a smart phone?

Interviewee 50: Yes yes exactly that.

Hayes: Which essentially is a calculator, calendar, is a connection device ...its a tracking device.

Interviewee 50: So for our colleagues in education this is a very, very disruptive moment in history because, we know to keep current and to keep relevant we have to engage with and address ....you know, became a little bit more congruent with the kind of learning and environments that our students are engaged with outside of the school environment. They have much more powerful technologies the minute they walk off the school grounds.

Hayes: So, ostensibly there is no point in saying "...no, don't turn it on."

Interviewee 50: (laughing)

Hayes: Or...is that putting words into your mouth?

Interviewee 50: Well, I believe that but I also understand the complex issues, the issues of duty of care, the issues of having rules and policies about usage or devices and tools and consequences for violations. There needs to be a consequence when somebody snaps the photo of their year eight buddy in the washroom and puts it online for everybody. The solution isn't to block every device. That can never occur. It's about educating people to be proper digital citizens.

Hayes: Great terms. Interviewee 50 in that respect and with the knowledge of a number of technologies that I have pointed to others in the past, even in the present such as Google Glass and other types of technologies. How or what do you think, what do you envisage these are going to mean in terms of for educational purpose...like, where are we heading?

Interviewee 50: Well, we are absolutely heading towards a greater level of accessibility of education. I think that the mantra of distance education, online education for many many decades really has been that it's been about giving equitable access and equitable opportunity to all people. That still is an issue in this country, where we have 7 percent of the country that isn't even being

considered for NBN service provision. I think it's just a matter of time and we are finding better body worn technologies that will connect, it doesn't matter where we are and we have them and if you have the dosh or the cash, you can get some pretty amazing stuff that you can be connected from anywhere ..true?

Hayes: Yes, if you have got the money you can yes.

Interviewee 50: So what does technology do but eventually brings that higher level, that higher capacity to us at cheaper and cheaper rates until eventually and I mean, we are seeing our comment earlier in the interview, having a Google app and a nine person video conferencing tool right on your desktop for free, that's pretty big stuff.

Hayes: Oh, huge.

Interviewee 50: You know? So what do I see for educational purposes...

Hayes: Educational purposes in the future.

Interviewee 50: Educational purposes, well we mentioned it a little bit earlier but biometric verification is going to be very important whether that is retinal or face recognition, hand scan, voice. The verification issue has really stymied some of the uptake and adoption of technology assisted assessment and learning online in those so I think that will be something we see in the future. Confirmation that a person is where they say they are at a given period of time (laughing). You would probably be familiar with in the educational sector that you can easily do an assessment piece or a quiz at another institution as long as you have an invigilator or someone that can verify that you are there, you are who you are. Well, I think these devices will become the invigilator and verification tool so that's going to be there and there is no doubt about it that meaningful, deep and rich collaboration experiences are going to be enhanced. You have been able to do it but it hasn't been cheap. We have had the live-class environments for a lot of years now and we have been using them but they were not cheap in the initial stages of them and they are still not cheap. If you want Adobe Connect you are paying some dollars for the right to have that service, I think the big impact of education and what teachers gravitate towards are free tools and what we are seeing is you is this huge, huge you know free service that is available out there so I think the uptake will increase and grow. One of the things that we want to see, you know Facebook is pervasive as you know. Yet education has been very very reticent to utilise Facebook environments with schools and so what we are seeing are the Edmodo kind of tools and things like that are basically controlled educator versions of the same kind of tool and I see that going well. What I see with body worn technologies in that context is that the environment is set, is enabled somewhere in the cloud but the technology keeps you connected to it.

Hayes: Mmm.

Interviewee 50: ...and so that you are on the fly and you want to engage with your environment, it's there and it's with you all the time and that sort of reflects back to the question, well is that a good thing or is that a bad thing?

Hayes: Well, how important is being network connected do you think?

Interviewee 50: I think it continues and will continue to be essential. I think what happens is that for the school to be relevant in their community it, the connectivity, is very important. Connectivity options for parents, connectivity options for students, for homework, for the student who is sick and who is missing school. There is no reason why they can't be engaging. We have and have always had a huge portion of transient families who due to different kinds of work that the parents are engaged in that they can't stay and committed to a zoned school so this is why we have the Katherine School of the Air and the Northern Territory Open Education Centre and the Schools of The Air you know in every state and territory serving that particular clientele. Well these tools really, really help these families have access and fair access to educational opportunities.

Hayes: So there is an access incongruity.

Interviewee 50: Yes.

Hayes: That's where it leads onto a much broader question but probably one that I am sure that you have had a done a lot of thinking around and that is what do you envisage the longer term effects of technology and what will they be on society?

Interviewee 50: Yes, well, one of the things that I have been curious about in terms of society is what will be the longer term impacts upon our capacity to store and retrieve between short term and long term memory? What I am beginning to see is that people have or are not as engaged with committing things to long term memory as we once were. When you were given the information you could only see it for a period of time and if you wanted to make it part of you then you had to commit to memory strategies, mnemonics and all kinds of things to try and encode things, so a longer term benefit is that information may leave our biology and we not hard encoding it into our grey matter. Awareness that the information is there will be encoded and our skill will be retrievable when we need it and I wonder what that really means? Does it really matter if the history, the culture and traditions of our ancestors are not actual oral stories that we have within ourselves and our own imaginations anymore? Where we actually show the story, when everything is truly recordable and can be carried forward. It has only been really a few hundred years that we

have been able to record and that was affordably only 50 or 60 years that we have been able to the average person has been able to do this sort of thing so we are in our recording enabled society now. What does that mean? I know one thing, just an example, from my son is he has a much even though it seems to contradict what I am saying, he has a much better memory of all these life events and he remembers and sees them because the videos are all there. He remembers all that and I can't say that I can remember that from the age of 2 but he can, so they are going to assist, but you know, I wonder if there is a problem with that? I guess that's what I am driving at here Alex. Is it problematic? I've thought about it and I've thought you know, I think we will just use our memory in different ways. The performing and creative arts if you are a performing musician you are learning thousands of rhythms, notes, melodies and if you sing you are learning lyrics. If you are playing an instrument you are learning chord progressions or things like and so perhaps we free up experimental capacity to do other cool things with our memory. That's quite exciting and does it really matter to you now at the age you are at whether you can recall which months of the year have 30 days or don't?

Hayes: I'll say it doesn't no. I struggle I must admit I struggle to even know what the date is of any given day unless I am looking at my device. As you say I've divested parts of my memory into the device that I am holding and I think that is a fantastic and strong, not metaphorical at all but it is certainly an analogy that could carry forward into many other differing parts of our lives. So that's Interviewee 50, you have really painted a very strong picture there.

Interviewee 50: Yes yes it's an interesting one ...the other one just on that recording notion and Alex you and I dreamt this up years ago. I swear we should still do this it was the idea of legacy building.

Hayes: Yes.

Interviewee 50: I think what happens is that through wearable devices, wearable computers and through our capacity to record and create interactions that can outlive our physical and our organic being, we actually project ourselves digitally through time and space. I think there is a fantastically beautiful opportunity for people to think about legacy building for future generations. A lot of societal struggles and a lot of psychological challenges amongst people, mental health stuff is related to disconnect from communities, from families, from all of that stuff. I wonder if one can, if you are in that reflective moment and you really need to connect to family if you could actually dial up Grandpa you know? (laughing) So in terms of society we have a great opportunity to do wonderful things for our future generations in terms of legacy building. I wonder why and I am kind of surprised it hasn't become a bigger industry that it hasn't been commercialised.



Hayes: ...well again in our instance from my limited memory that I have divested elsewhere (laughing) we sat around a campfire in an atoll which was part of the New Media Consortium (NMC) in SecondLife.

Interviewee 50: Yep, thats where we had that conversation, yes.

Hayes: We had the conversation around a virtual campfire and I very much felt that, that was five or six years ago, I was there with you virtually in a virtual situation and really instrumentally mapping what could well be and probably already is where people will divest their intimacy and their intimate memories for their families that they, perhaps as part of their will or other, pay ahead of time to ensure that the legacy of memory and access remains open. Thats a really fascinating area for sure.

Interviewee 50: Yes yes. The other, you know, the other longer term effects on society is going to be this. We have got to get there but we have got to use technology to resolve some of our complex stresses that we are putting on the planet. I am thinking about sustainability and our environment and I think we are just so so well positioned to use wearable devices to actually be calculating our carbon footprint, giving us feedback on our actual impact. Is there any reason why we couldn't? I'll give you an example. Is there any reason why couldn't have a wearable device that is gauging a certain health levels you know and health risks and if you are on a lower health risk you pay less taxes?

Hayes: Hmmm!

Interviewee 50: You know to healthcare based systems you know what I mean?

Hayes: Mmm mmm.

Interviewee 50: As a stimulant or a promotion to engage in healthier living because it is costing our countries, and I say countries because I think of Canada and Australia being a citizen of both you know incredible amounts of money because there is a lack of incentive for people to adjust some of their health practices. I guess I am getting back into you know biofeedback devices.

Hayes: So quantified self.

Interviewee 50: Yes yes.

Hayes: Sensor networks.

Interviewee 50: ...and evidence that can be acted upon and incentives are given. I think there is a lot of real good opportunity for, you know again we, the amount of tragedy from car accidents you know and that, what people go through. The

cost to society both emotionally, financially and everything you know. Wearable devices and things like that being able to see around corners and you have probably seen some of that school stuff.

Hayes: Oh yes definitely.

Interviewee 50: You know, we can't see it but these devices can see things and alter our decision making, so that we can actually avoid tragedies and accidents. There is no doubt these devices can help us live longer, extend lifespan and the impact on society you know of a living longer, is that a good thing or a bad thing? I am not sure.

Hayes: That's it we will be living longer but does that benefit us in the long run.

Interviewee 50: ...a better quality of life.

Hayes: Yes.

Interviewee 50: and you know...

Hayes: Interviewee 50 I've got a very...

Interviewee 50: You know consumerism mate, honestly, I mean technology is prone to the hierarchy of needs all the time. There is the potential of addiction to technology and that need to have absolutely everything I see and this is really pervasive in Australia. I see a lot of Australian families working the two and three jobs, just to be able to engage you with the cost of having all of the latest and greatest things. Is that a really good thing? Is the work life balance happening?

Hayes: These are big life questions and these are part of this research project is looking at impact of technology on society. Yes, we are using in some ways metaphorically the the point-of-view and body worn and similar out of a reference point for a shift and change. Interviewee 50 I am very cognisant of the time that we have spent together. I am very appreciative of the time that we have spent together in this interview. Is there anything else that you would like to make comment on specifically before we call it a wrap?

Interviewee 50: No. Just to affirm that it's really important research and it's good to have these conversations. I suspect that through your interviews you will be doing some meta-analysis and finding you know common themes, issues and where some of this is going. I will be very curious to see what becomes of it all because I only carry a very limited knowledge and amount of thought that I really put into you know, wearable computers and it certainly has sparked my interest.

Hayes: Absolutely and it certainly will so the publication of your transcribed conversation will be provided to you in couple of months to be able to make amendments or alterations.

Interviewee 50: Yes.

Hayes: ...and it will only be made public at the point of publication. It will paint a very, very interesting picture indeed considering the breadth of where I am actually interviewing from and the most unlikely spaces for some people and just assure you that apart from the odd slip where we say that we did meet tonight on other conversations with other people ostensibly, the data is stored in the University of Wollongong datawise secure repository. The only people who have access to it is the ITS, myself and Katina and that will be notified to you very shortly so thank you very much for participating in the interview.

Interviewee 50: Thank you.

Hayes: and if you will just hang on for a moment I'll turn the recording off and I am just making auditory annotation that I am ceasing the interview at 11:05 PM Eastern Standard time Canberra Thursday 29 November 2012.