

## Interview Transcript

---

Interviewee	Leigh Blackall - Educational Developer, La Trobe University, Melbourne, Australia
Interviewer	Alexander Hayes - PhD Candidate, University of Wollongong, New South Wales, Australia
Supervisor	Professor Katina Michael, University of Wollongong, New South Wales Australia
Co-supervisor	Professor Teemu Leinonen, Aalto University, Helsinki, Finland
Conducted	15 October 2012
Format	Face-to-face
Location	Melbourne, Australia
Duration	00:42:00
DOI	10.6084/m9.figshare.5766966

---

### 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.*

Hayes: So Leigh Blackall thank you very for the opportunity to for you to participate in this interview which is set at your home in Victoria Australia and I look forward to the transcripts of this recording. I am requesting permission to begin recording this conversation from now and the noted date is 15th October, that is one five October 2012 and it is 9:12pm at night and as, I am noting the date recorded also on the consent form which you have received today, my name is Alexander Hayes, I am a PhD candidate in the Faculty of Informatics, University of Wollongong under the supervision of Associate Professor, Katina Michael. Leigh could you identify yourself, your name, position, organisation and any other associations you wish to make.

Leigh Blackall: Ok. Leigh Blackall. I am a professional Educational Developer and I run a small business called [peakoilcompany.com](http://peakoilcompany.com)

Hayes: So, the purpose of the interview today is to gather your thoughts and your opinions on the use of location enabled body wearable technologies and the implications that they may have on society as a whole. The duration of the interview is up to sixty minutes but it may go less or slightly more than that about every ten minutes or so I am going to ask of your permission to continue with the nature of the recording and at any time during this interview you are free to cease the recording and cease the participation in this interview and if you could just audibly let me know that this is the case I will cease the interview and cease recording so, without further delay, you will also have the opportunity to, at the end of this interview I will be transcribing the content of this interview and I will be providing you with a transcript and you will have up to seven days to amend that transcription for and until the cessation of this research project. This is a face to face interview and we have 12 questions which I would like to use, well principally ten but it may extend to guide us in our discussion but this is and serves the purpose of guiding where I would like you to respond but also where to consider as part of this research consideration, so the very first question that I would like to ask of you is what does the term wearable computers mean to you?

Leigh Blackall: Ah, well, like clothes and jewellery and prosthetics all of these things are wearable on your body and so wearing a computer either is those items or in place of those items and up until fairly recently computers have been very much an external thing. The closest they get is

portable but not till they are popped into the pocket I guess that they start becoming wearable.

Hayes: So, on that same focus what do you think the key differences are then between handheld, wearable or a body worn technology in your opinion? What are the key differences between handheld, wearable and body worn technologies?

Leigh Blackall: I say that the hand held can be put down quickly, and so separated from the body, a wearable can be taken off but not so quickly as a handheld. What was the last one?

Hayes: Body worn.

Leigh Blackall: Body worn.

Hayes: Body worn technologies.

Leigh Blackall: Body worn is more close to wearable than it is to handheld and more close than wearable is to handheld, so body worn and wearable are almost the same to me. I suppose body worn starts to imply embodied, whereas wearable is still external, but when I imagine it, I imagine body worn like jewellery or watches or maybe even if the technology existed some stick on and strapped on and then wearable more in the clothing and handheld being more like a device like a phone or a computer that is portable.

This was my first exposure to portable, wearable computing: Vodafone future website 2003

<http://cargocollective.com/designchapel/Vodafone-Future-2003>

Hayes: That is portable, so in what way have you been involved in past, current or proposed use of these technologies?

Leigh Blackall: Oh, mainly in online forums where the extent of their possibility and use in niche areas is in discussion, linked to and looked at in a recorded way but in real life only as far as what corporations like Apple and Google, Samsung and the like have put to market and made it viable to purchase. In terms of professional work in educational development, I have been resistant to anything that isn't readily available in the so called market or readily built by someone. So anything that is specialised to

formal education I saw as inherently unsustainable, so I would resist any investment in that. I would still enter in forums and discussions about where they were investing in, but that's about it. Maybe in a slight way adjusting content production so that it was displayable on mobile and these latest generation mobile phones, so called smart phones but not much more than that I'd say.

Hayes: In the third part of that question it says in what way have you perhaps or maybe in the proposed use of these technologies. Do you want to elaborate further on perhaps or will you be involved in proposed use of these technologies in the future?

Leigh Blackall: Back to the content, probably only in as much as finding readily available websites or looking at readily available websites. I'm thinking Wikipedia, YouTube or Blogger, sites like that have already adapted their content to display on common mobile technologies like smartphones and iPads and stuff. I'm proposing to educational organisations that they use those services because they are so much more advanced in mobile display than any home grown system, but additional to that is the popularity of those platforms and how readily available they are, not much more than that if you consider augmented reality stuff and location based information. Again not going too far down that line because it would necessitate an investment by the institution that is inherently unsustainable until it starts to be demonstrated by others outside of educational organisations. Educational organisations then respond to that, they not so much lead that,

Hayes: That's interesting. So what do you think the benefits risks or harm from your perspective on the users of this technology?

Leigh Blackall: I think the harms are what we already know about, computers in the home, always being on, and a lot of people take their laptops to bed, or take their phones to the dinner table so it's affecting relationships, most obviously between teenagers and their parents, but also between couples, between parents and their young children. So the computer is having some impact in the home, relationships and immediate family relationships. On the flip side of that is that it can obviously help improve those relationships too.

Hayes: (laughing) So there's sort of the risks and harm. What are some of the benefits from your perspective on users of this technology?

Leigh Blackall: Definitely the benefits are the things that you and I started experiencing in 2006 in New Zealand and you and Sean Fitzgerald were carrying some of the early generation smartphones. I remember, in the middle of conversation you and he were both trying to dial up Wikipedia entries on topics that we were discussing that we weren't too sure about or clear about. With wikipedia and other sites, even though the speed and connectivity wasn't there to make that seamless, it was showing us at that time, where it was to be used potentially. Such as in conversation, where we just spent a whole night talking about old movies and bringing up Youtube clips. Not so much on a wearable device, but it could have been a smartphone quite easily, so the benefits are that our conversations and the things we talk about are media enhanced at least. In some instances it goes further, such as when you are stuck on something or you have forgotten the number on something or you have forgotten a fact or a name or something that you can quickly get it up and then the conversation can go a bit deeper because we have been able to relate something that we are otherwise mentally blocked on. So in that way and in other things like deadlines, if I forget something at work I can quickly access my work stuff on the mobile and finish that off. I can navigate, that is a huge one, being able to use GPS and maps to navigate because we move around every 2 years and we are always in a new city or we are always travelling somewhere without the GPS and maps on our phone. We can get reviews on restaurants if we are going out, or looking for any business for that matter such as when you are thinking to get fish and chips at this restaurant but you never have, you look up the restaurant, there is the reviews, get a scope on what it is going to be like and maybe even what to order, what to go for in cheapness and stuff, so that's a big help.

Hayes: Very good. What does the term location enabled mean to you within the context of location enabled body worn technologies? I will repeat that one because that's a mouthful in its own right so, what does the term location enabled mean to you within the context of location enabled body worn technologies?

Leigh Blackall: Well to me I don't use what I consider to be body worn technologies like strapped on or stuck on or jewellery type devices. The only semi wearable devices are my phone because it sits in my pocket and I think the only wearable thing is my shirt.

Hayes: So can I just stop you at that point. You consider your mobile smartphone to be a wearable technology?

Leigh Blackall: No, but to answer the question the closest technology that I have got that I use that is wearable if we are talking about wearable and digital media and stuff would be the phone only by the fact that it can fit in my pocket and be wearable but I wouldn't classify it as a wearable device. A wearable device would be if I was to use or I do want to use a GoPro video camera strapped onto my helmet but it is always on my helmet and I'm not sure a GoPro like that can be GPS enabled so yes, the closest thing I would say that is wearable is the phone, because it sits in my pocket and sorry what was the question? What would I consider?

Hayes: What does the term location enabled mean to you within the context of location enabled body worn technology?

Leigh Blackall: I just think instantly of the technologies that engage with satellites and GPS and wireless signals that GPS, satellite and various, what do you call, various radio signals triangulating to locate the device like the phone that I've got in my pocket, if I imagine wearable then it would be a strap on or a stick on or a clothing that is worn into it. I can think of ski gear for example that has location devices stitched into it in case people get lost in an avalanche and they can fly over quickly with a helicopter and locate the bodies to dig out so that would be a location enabled body worn technology that I don't necessarily use. although come to think of it, the transceiver that I strap on, I wear it at my singlet level so it can't be taken off and if I get lost in an avalanche then people can find me, and if others get lost in an avalanche then I can get to it quickly and use it to find other people.

Hayes: Tell me a little bit more about that transceiver, that particular technology.

Leigh Blackall: Yes well it used to be an analogue radio signal but now it is a digital signal and you set it to transmit beeps and it gives off radio waves in an arc. If people need to find you on that beep they switch theirs to receive and they scan and find you on that arc and they zero in on your arc and it tells you how far you are away until eventually they locate you on the surface. They can also tell how deep you are with some of the more accurate ones.

Hayes: So you are principally using that technology in relation to a sporting activity.

Leigh Blackall: Yes. Rescue, so it's a safety device in avalanche prone areas. I don't use it in Australia but in New Zealand I used to use it all the time, not that I ever had to use it but you don't just go into the mountains without them.

Here's a playlist of videos I recorded from my avalanche safety course - [https://www.youtube.com/playlist?list=PLhJG80urSiFjArWnEJE5\\_8aO6lkeRd6JG](https://www.youtube.com/playlist?list=PLhJG80urSiFjArWnEJE5_8aO6lkeRd6JG) and this video begins a number of videos on transceivers in that playlist - [https://youtu.be/JJxIVV9geak?list=PLhJG80urSiFjArWnEJE5\\_8aO6lkeRd6JG](https://youtu.be/JJxIVV9geak?list=PLhJG80urSiFjArWnEJE5_8aO6lkeRd6JG)

Hayes: Sure, so are you happy to continue with the interview?

Leigh Blackall: Yes, yes.

Hayes: Great, which issues if any are you aware of that involve this type of networked technology?

Leigh Blackall: Which issues?

Hayes: If any, are you aware of with this location enabled body worn technology?

Leigh Blackall: Well, positive issues are the affordance for the, no, the issues are, the issues, when you use the word issues I think of negative issues and I have to stretch myself to think of positive issues. When you say issues I think of controversies and ethical dilemmas and things like that.

Hayes: Ok, well you can take it whichever. Perhaps all of those points.

Leigh Blackall: Well, all of those. When the word issue is used with me it means ethical dilemma or controversy or questionable areas, so things like privacy and personal security in both of those come to mind. So personal security for someone, might be a risk to them if they lose a phone, like people with dementia and mental issues might need location enabled

wearable technologies to help the carer to help them find out what location they have moved to. I can see a benefit for the same with toddlers and stuff like that. I can see a peace of mind for parents if they are able to put a wearable location enabled device on their kid in case their kid was to ever go missing, god forbid. Where it starts to get questionable for me definitely is people checking into nightclubs and getting privileged service like club lounges and flight lounges and stuff like that for those who have these location technologies enabled. That's pretty dodgy (phone interruption) ethics in my mind. You just start to breach into not only the privacy issues but also, and I am not sure what the term is for it but, a sort of social tipping point where if more and more people cross that grey line, where the benefits aren't so clear then more and more people are contributing to that peer pressure who aren't even thinking about the issues. Facebook is a great example of that. A lot of us didn't want to go anywhere near Facebook when it first came along, but now you are effectively disconnected from your family if you are not in Facebook. Yes that's a worry but it seems to me that there is no avoiding it, and there are clear benefits to it too, there are grey benefits to it that the majority of the population will go with, such as club privileges, market loyalty programs and all that sort of stuff, socialising and quickly being able to tell you where your friends are, so obviously the larger number of people who use that will create a peer pressure for those of us who are more concerned about the issues won't be able to avoid it. Then there are the clearly not so cool spaces for me, when government and policing organisations use it over their normal processes and procedures, to get a warrant to locate people, or search people or wiretapping and things like that. I am not happy at all with the legislations that appear to be slipping through free trade agreements and the like. It seems to me to be blatantly dishonest and avoiding the discussions they must have with civil liberty groups. If they can't get it across those civil liberty groups then it is not time to bring in that technology, in my opinion, regardless of the security or the so-called security risks that they think they are addressing.

Hayes: So what sorts of impacts have location enabled body worn technologies had or are likely to have on yourself, your colleagues or your industry? Are you fine to continue?

Leigh Blackall: Well I've already covered the first part of that question in what will be inevitable peer pressure when large numbers of people of take on the use of this technology and you will be compelled to use that technology if you want to stay in touch with people, join meetings and find



people in cafes and stuff like that. Sorry, there were three parts to that question.

Hayes: I'll repeat the question again. What impacts have location enabled body worn technologies had or are likely to have on yourself, your colleagues or your industry?

Leigh Blackall: So the next part is the biggest use I have had with location enabled again is with my phone tracking where I go in two ways. When I go skiing, backcountry skiing I like to track my location so I can reflect on where I was on the map and how long it took me to get to there, and share that route I took with somebody else who is about to go to the same location and help them get to the location and additionally taking photos that are GPS tagged so that I can quickly show them where that was and how I got to that perspective and all of that..

Here's an example map -

<https://drive.google.com/open?id=1NaLCJ9gmKr3td4RjBiWczcYEu1c&usp=sharing>

I like GPS tagged photos because it helps when I load those photos to relevant Wikipedia articles that the GPS tag goes with it and that makes the editing of that page easier. The other one which I kind of have experimented with is Google Latitude where it tracks where I am based by my phone and gives me some interesting but not very accurate data of what percentage of my life I am spending at work and what percentage of life I am at home and what percentage or how many kilometres I have travelled and things like that. It's interesting to look at but I have found it to be not very useful nor accurate. I am not sure why it is not. I guess because I am switching off the phone a few times or I am out of GPS range or I have turned off Latitude for a period of time so it makes the data not very useful for that reason.

Hayes: Sure.

Leigh Blackall: I can see the potential for it, but what for? Probably at the very first instance reflecting on how much time you spend at work, compared to with your family for example. It maybe more or less than you think and if ever you are in a prickly situation, or probably not, there is probably a lot of people in this situation where they are trying to demonstrate flexible working methods not necessarily in the office and

trying to show their supervisors when they are at work and when they are at home or when they are travelling around or whatever. So there would be useful data in that.

Hayes: Hmmm. Happy to (motions to continue interview) yep?

Leigh Blackall: Keep going.

Hayes: Here is a big question and one that is very specific to what you have identified as your area or industry. How do you envisage these location enabled body worn technologies being used in the future for educational purpose?

Leigh Blackall: Ah ha. A whole range of possibilities.

Hayes: Can you perhaps break down for say a lay audience who don't understand what an educational purpose is, what you envisage these location enabled technologies being used for educational purpose.

Leigh Blackall: I would just use specific examples, so I will talk about skiing and avalanche safety for example. Already the technologies I am using would be very beneficial to demonstrating competency with avalanche skills and knowledge as well as helping instruct, say, if I wanted to demonstrate my ability to recognise risk terrain and find alternative routes through mountainous areas of snow then I can enable the GPS, mark areas where I think there is a risk, add voice commentary to that thing and even a photo or even a video is GPS tagged and submit all of that data to the assessor who could then either retrace my steps soon after or just make an assessment based on the map data. You know with the contours and the steepness and the weather data for snow falls and things like that, and make an educated assessment on what the conditions are likely to have been and correlate that with my decisions which were evidenced on the track of my GPS mark.

Hayes: So if you don't mind if we could perhaps for each of these scenarios if you could identify whether you see these to be of value for a vocational working or workplace environment or whether this is to do with theoretical basis for say a tertiary environment for research.

Leigh Blackall: Ok, well I mean personally I don't make clear distinction between the two as I think so called higher education has numerous

instances where a vocational skill has to be demonstrated within it and likewise a vocational occupation needs newer instances of so called higher order thinking and problem solving but in the instance of the avalanche, for example, you could include on that some so called higher order thinking like group dynamics where I could log my assessments of the dynamics of the group and how many people in the group were being blasé about the risk they are in, not pausing and deferring to the low risk rather than moving into the high risk situation. That starts to demonstrate knowledge and assessment in group psychology and risk aversion in those situations and then that would then correlate with the GPS data and all that sort of thing that would show the end result of the decision mixed with the terrain etc.

Hayes: So that's a mixture of data sources plus various individuals contributing towards a group dynamic.

Leigh Blackall: Yes. I am not sure how you would go about capturing that so from an instruction level I might be an observer on a group and I am GPS tracking their movements and I might ask the leader, if there was a leader, to take the group aside and interview them about what sorts of things are influencing their decisions at this point in time and use that video for the group later on and show it all up. Here is the map with the contour lines and here is the GPS lines that approach what the leader thought was a high risk situation, pause there, what would the group do, so it is an instructional environment, what are the dynamics going on so let's have a look at the group dynamics and get some videos of the groups laughing with each other or maybe even discussing the area they are going into and see if we can make an assessment on where the real leadership lies and whether that is causing a risk for the group. Things like that so a lot of that in practicality I don't think avalanche training will move to that level any time soon as there are various obstacles to it and sometimes GPS doesn't work in the mountains very well and in a lot of those training environments they have a heavy preference for a real, face-to-face instruction. Virtualizing that into studios is frowned upon a bit even though I don't think that is very well informed as it elevates the real experience, you know, to have a studio experience and then go into the field.

Hayes: So that is one scenario. Do you have any other scenarios where these location enabled body worn technology could be used for educational purpose?

Leigh Blackall: There are so many, in the vocational training sector, truck driving for example could use GPS to show how to drive with more efficiency on fuel and parts and again link that to higher order thinking where the truck drivers are assessed for the efficiency of their work. Ah other scenarios, I think I would have to sit down and think and do a bit of Google searching to see which ones would be the best ones.

Hayes: Sure sure, so are you right to continue?

Leigh Blackall: Yes.

Hayes: Ok, so as we progress through the questions, we are now at question 9.

Leigh Blackall: Excuse me, we will go back to that other question. I have left out a whole definite possibility.

Hayes: That's fine and we can return, but maybe this will give you a bit of a break and then we can return to that.

Leigh Blackall: If you could remind me of augmented reality that is a most obvious one for educational benefits of location enabled.

Hayes: Ok well while it is fresh in your mind ...would you like to?

Leigh Blackall: Yes.

Hayes: Ok that is a good idea.

Leigh Blackall: So you were asking for examples, so augmented reality.

Hayes: Location, how do you envisage these location enabled body worn technologies...

Leigh Blackall: Yes.

Hayes: ...being used in the future for educational purpose?

Leigh Blackall: Yes, well a I don't know about the future but right now for educational purpose it is a blurry line in my mind and I need to orient myself to this new area of Ivanhoe and I consider that to be an educational

mission. So I switch on my phone and use Google Places or Google Maps which shows my location and I turn on the Wikipedia layer and it shows when you are in some significant locations and I turn on the photo layer and it shows me photos of those locations on the places layer and it shows me restaurants, service and things like that. So I can quickly orient myself to most of the service and features of the immediate area and then expand out from there. So the application of that in different settings should be obvious. For example, I am on a particular mission to look for historical relics in the Melbourne area, then I could use it to find those and photograph them and add information to them and things like that etc.

Hayes: So there is a point there where the participant can contribute something towards the...

Leigh Blackall: Yes, well if there is a specific design in what they are doing or it benefits them or if they see that it benefits them in their learning to contribute rather than just watch and read, not just watch and read, just so many now popping into my mind like when I go travelling, for example in Singapore I find that travel guides in Singapore are not very good because they don't cover the spectrum of things that I am interested in. So I turn on a Google Map and I share it with people I know are spending a few days in Singapore. I keep maps on places that I'm in and share that with people who just want to have a tourist experience or an educational experience.

Hayes: ...and you mentioned there augmented reality so I'm going to bring it up again.

Leigh Blackall: Yes well it adds information to those layers, like the Wikipedia entry, that come over the map so I can be in an area and be close to a relic and maybe bring up the Wikipedia article and read about it and see a photo and see a video. The ones I have tried to with varying effect is to actually hold up the camera of the phone and it will recognise the bridge in front of me and do Google image search and find me information about the thing in front of me and I look forward to a future like that but to date I've not experienced much of a reliable nor seamless as an experience on that.

Hayes: Thank you that's far more, a much more rounded picture for me.

Leigh Blackall: Ok.

Hayes: So, what do you envisage will be the longer term effects of this or the use of this technology will be on society?

Leigh Blackall: Well, this answer helps bridge what I would even keep adding to that previous answer which is I would very much like to use augmented reality as an activist layer, a political campaign layer, where you walk into a space that might be politically contentious and where I have already created a layer, a digital layer on that space, in that building or that bridge or that location and while you see through the camera the represented reality of the thing you also see a whole other layer which is either the political activism, information or artistic creation. I have heard of the National Museum (Australia) in Sydney had for a while this huge Lego figure hovering above the museum only in augmented reality, so, you put your camera on the building and I think this was in Wikitude that they did this and you see the museum but above it only through camera do you see the lego figure and I wanted to do something like that at the University of Canberra where they have, you know, they are putting thousands of kids through and ending their lives with sixty thousand dollars of debt. I find that a politically contentious issue so I would have liked to have created a layer over the top of the University of Canberra and it would be a free University of Canberra and linked to all the free downloads and lectures and other places that you can learn the things that Canberra University can offer but you can learn them online for free etc.

Hayes: Great! So happy to continue?

Leigh Blackall: Yes.

Hayes: Great, ah, believe it or not we have got through all the questions I had prepared but I would like to find out from you if you have got any further comments or perhaps statements that you would like to make relating to this side of wearable computers, handheld body worn technologies, futures and perhaps how this affecting humanity. Any other comments that you have. Do you have any further comments?

Leigh Blackall: Just off the top of my head I am sort of thinking about precious items. How could you secure a precious item whether that is people or objects through wearable technologies. You know a thief for example would only need to locate the thing that is transmitting the location and cut that thing out or take it off so I am thinking that the location enabled has to be intrinsic to the thing so a painting for example, almost

every tenth thread in the canvas weave is a location transmitting thread so that you can remove the location signal from the precious item and likewise with jewellery, the location transmission is integrated with the jewellery so you destroy the jewellery to get that thing out so it kind of makes sense for stealing that item unless you can cover that signal, it makes it impossible. There is one thing as for the so called dermal layer, that term that you coined. I love that term. The taboo of inserting location technologies under the skin of people like microchipping and stuff. I think with facial recognition, voice mapping and things like that microchipping won't be necessary. I don't think we will get to that level. I think we will be able to tell people's locations through cameras and sounds and maybe even smells.

Hayes: Wow!

Leigh Blackall: (laughing) Yes, and trends. Trending data so if I use latitude for a few more years I think that could make an accurate guess, even if I thought I was escaping it could make an accurate guess if it thought that I was escaping (laughing)

Hayes: (laughing)

Leigh Blackall: (laughing) A profile like me, 42 years old, thinks he is escaping. So what do ten thousand other 42 year old white anglo English speaking only guys like him. They would say oh yes. There he is surfing.

Hayes: (laughing) ...and Leigh that brings us to the conclusion of the interview and thank you very much for participating in the interview which of course as you know will be and will serve to focus the nature of the thesis. Your contribution is highly valued so you will receive a written transcript of the interview and you will have the opportunity to, for a period of 7 days to be able to make alterations to that transcript and after that period of time it will remain as a single pass transcript with no further alteration. You are free to supplement that transcript with further material, whether that is in images scenarios or recordings and I actively encourage you to provide additional information if you wish to that supplementary material will be considered as part of the main thesis body up until the point of publication. You are free at anytime during that period of time to withdraw yourself from this research study. All of your data will be kept secure and that you are free at anytime to note your retraction of your contribution or supplementary material up until the point of publication of

the thesis itself so thank you very much for participating. Now I am going to cease the recording.