

Risk Remediation through Haptic Technology
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10/30/17

In order to frame the topic of this paper we will begin with the contextualization of our uses of the titled terms, Risk, Remediation, and Haptic Technology. Risk is inherent in humanity, but has not always been easily accessible, with the primary access point being hunting and war. With the foundation of agricultural societies, much of the inherent risk from hunting was eliminated and replaced with a lack of risk and a constant food source. Right away, with this small technological advancement, risk was remediated to the point of being nearly eliminated. Thankfully humans love to kill, and risk will never be fully destroyed only be remediated.

Remediation is natural to 'technology as media'; the longer a technology is in existence, the higher the likelihood of remediation happening. For example, the Walkman was remediated by the Apple iPod, and the iPod by the iPhone, just as the Record player was remediated by the Cassette, the Cassette by the CD and the CD by the .mp3. Many technologies have been remediated through out this modern era, but the one this paper will be focusing on, is that of the "Shocking Grasp" ([Parisi](#)) of Haptic and Electrotactile 'tech' remediation.

These Haptic Technology tools, once touted as the new medical practice ([Grundwald & John](#)) of the future have been slowly remediated back into technological culture through the gamification (the slow transition of a normal activity into that of game playing, with rules, points, a goal, etc.) of the technology. Not only did the gamification of electronically haptic technologies lead away from the medicalization of these technologies, but also led to the integration of haptics into daily life for many members of the middle class such as with Bose's Electrified Venus (Figure 1 – [Parisi](#)). This remediated a once "high-class" flavor (Electrotactile stimulation) into a middle-class, gamified piece of entertainment for the masses.

Remediation continued to occur when this gamified technology was finally incorporated into a portable, home system of haptic tactility. With the launch of "rumble packs" and "jump packs" for video game consoles this once rare and expensive technology was in many children's homes and making definitive steps in reintegrating haptic feedback into the daily lives of Americans. In these instances, the haptic feedback mechanism was meant to "immerse", through tactile and visual senses, the player of the "game" into the "gamic reality".

This immersion tactic has been heightened and increasingly made pivotal for a "good game experience". In order for visual game technology to grow and evolve, total immersion became a major goal. This led to many different technological (Both Haptic and Visual) breakthroughs, from the Nintendo Powerglove ([Wheeler](#)), to the "Waverunner" arcade game of 96, to the creation of Virtual Reality. These technologies were not only being used by the middle class populace in order to experience new things,

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Comment [Office6]: You tend to assign an automaticity or naturalization of remediation rather than discuss its causation. Parisi for instance discusses how mediatization of tactility were driven by prior work with visual technology and media which informed theories of haptics in the 19th century

risks, and worlds, but was also being used by governments for risk management and assessment technologies.

One of the first examples of the remediation of virtual and haptic technologies to be used for government risk management was that of “Headsight”, a Philco Corp creation that used motion tracking to allow for the “immersive remote viewing of dangerous situations by the military”(VRS.org). This connects well to one of the first governmental uses of immersive haptic technologies as well, that of the “Link Trainer”. The link trainer used electromechanical motors to simulate a plane flight, and was heavily used in preparation for WWII to help train pilots while remediating the risk of learning how to fly in a real plane.

With the perpetual cinematization of war, and equivalent militarization of cinema, these remediated risks are falling further and further from our once shocking grasp. The risk that was once felt only in war has been integrated in to daily media, from movies, to TV shows, to video games. All of these media give equivalent access to visual risk, but few, such as Painstation, give access to physical risks. On top of this, Junger(On Pain) points out that a new consciousness has been created with the normalization of this pervasive visual risk. A second consciousness, a media skin, an externalization of the nervous system in a new “retentional apparatus”, techno media.

This second consciousness created by normalizing risk, is perfectly showcased in the film “5 Broken Cameras”. Even as his cameras are being broken, you see Emad literally clothe himself in bigger and better media skins (the cameras) that allow him to separate himself from the risks, and the horrors, going on around him. At one point in the film, Emad mentions this. He says that he is glad to have the camera in front of him, that he cannot stop filming, because without the camera (his media skin) he would try and stop the soldiers from hurting his brothers, stop them from laying hands on his father and mother. It is the literal Media Skin that saves his life, both by providing him an outlet to view the risk, but also, by literally stopping the bullets meant to end his life.

Here also you can see the power of risk remediation through cinema as an example. The audience of this film is able to visualize this risk, to have it remediated and placed in front of them, an active risk to life, and freedom. While the audience might not actually be at risk for their life, the remediation function of the screen helps them live it, visualize it, and most importantly, empathize with it. One of the main goals of Haptic Technology is this very same remediation of the risk that would otherwise be there.

Here are two terrific examples of haptic mediators of risk. The first that I will mention is a project created in part by Fox Harrell and entitled “The Enemy”. This project was created to remediate the risk of a face-to-face meeting with one of 6 soldiers from around the world. Harrell used only soldiers of actively engaged military forces. He did this in order for the two opposing soldiers to be able to virtually meet their aggressor while remediating the risk, so that empathy was possible. Not only does this visually recreate risk for the soldiers that are part of the project, it also allows for that risk

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remediation to be shared to each and every audience member who goes to the exhibit at the MIT Museum.

The second is that of a local Brooklyn Haptic designer who is currently working on a much more down to earth technology. While it is a somewhat simpler technology, that doesn't mean that the power of the risk remediation is not still there. Kevin Yoo is one of the creators of Wear.Works, a wearable technology company created to help remediate the risk of being born disabled. This sounds like an impossible goal, but thanks to haptic technologies, it is very much possible.

Kevin and his team have designed a two-piece system of wearable technology that works with proximity data, and geo-locational data to help the wearer orient themselves in space. Specifically, Wear.Works has created a system that helps to technologically remediate the risk of a blind person running a marathon.

Haptic technological remediation of Risk has advanced to where the risk a blind person lives every single day, can be remediated using a technology originally created for medical uses, transitioned to gamified uses, and then re-remediated back into medical use. This transitional system of technological remediation is only getting started and only has growth from this point on. If today in 2017 haptic technologies can remediate the risk inherent in being born blind, what can they do in the future?

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