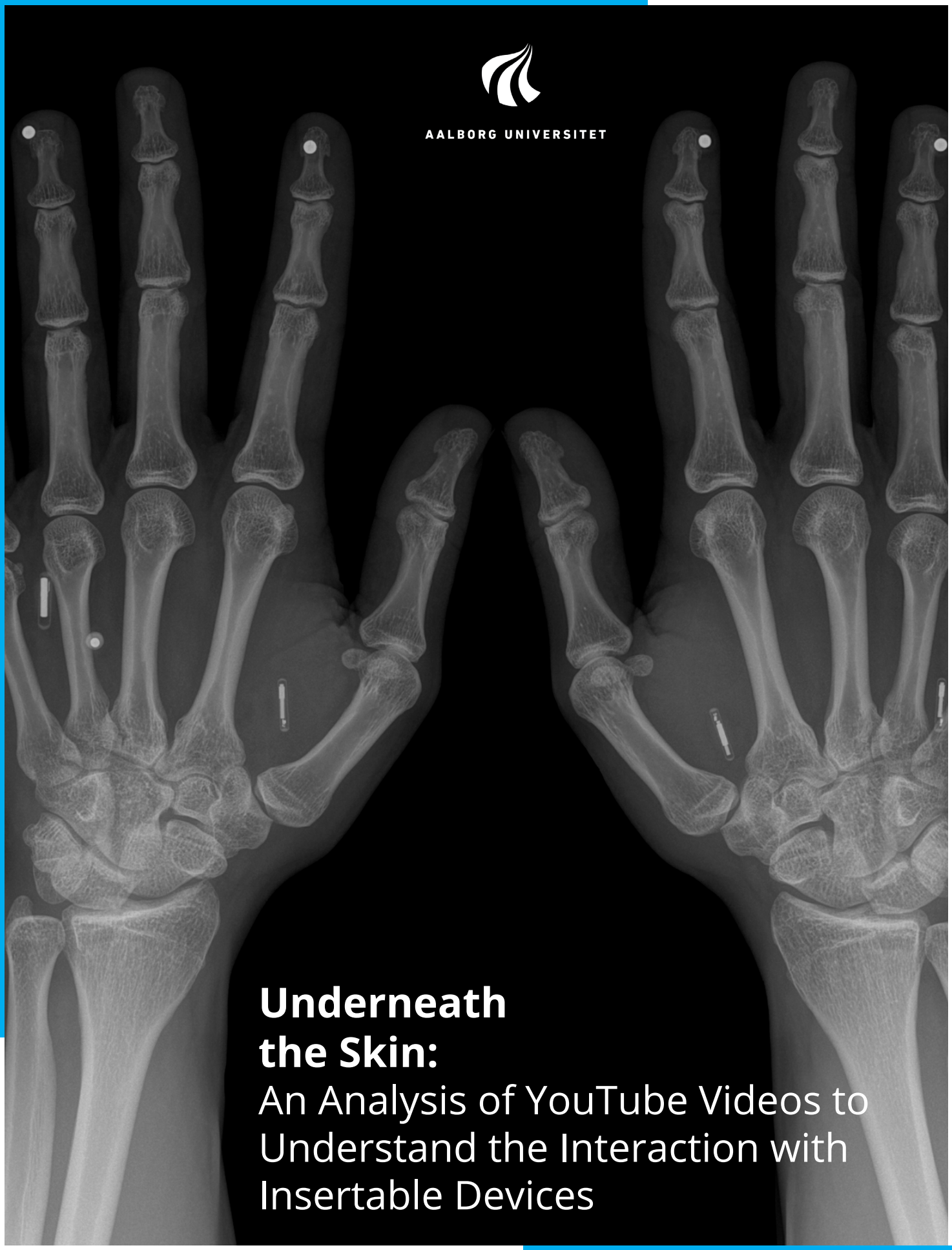

AALBORG UNIVERSITET

Underneath the Skin:
An Analysis of YouTube Videos to Understand the Interaction with Insertable Devices

BY AIDA KOMKAITE, MARIA VRAKA AND LIGA LAVRINOVICA

X-Ray of Patrick Paumen's insertables (private picture)

Group: hcc101f18. Under supervision by Mikael B. Skov. Information Systems (IDA), 10th semester, Masters Project

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ABSTRACT

This thesis investigates the interaction with insertable technology as well as the challenges, opportunities and motivations that are present during this interaction. Therefore, we conducted a two part study. First, we analyzed 122 YouTube videos in order to observe real life interaction with insertable devices. Second, we conducted an online survey to supplement the data from the video analysis.

Our results show that the insertable devices are mainly used for access and identification, as well as for leisure and creativity. However, the interaction with insertable devices is hindered by multiple challenges due to the novelty and limitations of the current insertable technology as well as the immaturity of the existing infrastructure. In addition, further research is required in order to fully understand the implications and opportunities of future insertable technology

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PREFACE

In this report we describe our Master's thesis for IT Design and Application Development program at Aalborg University. The aim of our thesis is to investigate and gain a richer understanding of insertable technology, the interaction with it as well as the accompanying challenges and opportunities. As this technology is still very new and has not been subject to extensive research, we wanted to expand on existing work but with special focus on interaction in real life settings. Our Master's thesis consists of two components: The research paper "Underneath the Skin: An Analysis of YouTube Videos to Understand the Interaction with Insertable Devices" and a reflection of the research methods used during our 9th and 10th semester.

We would like to thank our survey respondents for participating in our study and providing valuable data for the project. We would especially like to thank our supervisor Mikael B. Skov for valuable guidance, advice and supervision through 9th and 10th semester.

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ABSTRACT
During the last few years, there has been a growing interest in non-medical implantable technology. People are experimenting with inserting RFID, NFC chips and magnets underneath their skin. Since this topic is relatively new, the goal of this paper is to provide a richer understanding of insertables and the interaction between these devices and the users. In order to do so, we conducted a two-part study. First, we conducted a video analysis of 122 YouTube videos to gain insight into the interaction with the insertables. Second, we implemented an online survey to complement our data from the video analysis. Our findings show that there are many opportunities for interaction with insertables both for task-oriented and creative purposes. However, there are also multiple challenges and obstacles as well as side effects and health concerns. Our findings conclude that the current infrastructure is not ready to support the use of insertables yet. Finally, there are multiple implications to consider for future design, as insertables have great potential for development.

Author Keywords
Insertables; implantable technology; interaction; hobbyist; YouTube;

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

INTRODUCTION
We have witnessed a growing interest in implantable devices since 1960s when the first pacemaker was implemented [20]. Since then a wide range of medical implantable devices (IMDs) have been developed, such as, implantable cardioverter defibrillators (ICDs), insulin pumps, cochlear implants, various diagnostic and monitoring implantable devices. These technologies improved opportunities and well-being of patients. Typically, these types of implantables are prescribed by medical professionals, therefore, patients do not usually choose themselves to receive an implant in their bodies.

Recently, people have started to explore technology that is implanted in their bodies by choice. In this paper we will refer to this category of devices as *insertables*, a term introduced by Heffernan et al. [13]. They explain that implantables are used in a medical context and refer to - surgically implanted devices, while insertables are non-surgical and are a result of personal choice [15]. A movement of so called "Hobbyists" [8] or "do-it-yourselfers" [9] or a multitude of other names people have given themselves, has emerged focused on inserting various devices under their skin. There is emerging interest in this type of technology within the HCI community as well. Heffernan et al. [14] conducted a study to investigate the motivation and reasons for getting insertables as well as categorizing the most common types of devices such as magnets, NFC and RFID microchips and bespoke devices. While research about the interaction with this type of technology is limited, prior work has touched upon the adjustment period of getting an insertable [15, 10], the always available aspect and the common use for insertables [15]. We still lack understanding of how people use and interact with insertables that would inform us about future design of such technologies.

(a) (b)

Figure 1. Examples of insertables: (a) a user with an RFID/NFC chip inserted in the right thumb; (b) a magnet insertable.

Our aim in this paper is to gain a richer understanding of the interaction and use of insertable technology, as well as the challenges and opportunities of having an insertable device. In addition, as the use of these devices is completely voluntary, it is interesting to explore the motivation behind getting an insertable. With the continuous advancement of implantable technology, people will continue to explore ways in which to expand human capabilities which in turn could have important future applications. In order to investigate this topic, we implemented 2 research methods. To focus on interactions in realistic settings, we decided to conduct a digital ethnographic study. We used YouTube as a source of data to get a visual representation of interaction between users and their insertables. Afterwards, we also conducted an online survey to complement the data from the analysis of the videos. We posted the survey on several

Facebook groups dedicated to insertables. Our goal was to expand on some of the areas that were not sufficiently covered in the videos. Our findings were grouped into themes, namely identification and access, playfulness and creativity, challenges and obstacles, physical sensations and health concerns, motivation as well as security and privacy. The contribution of this paper to the HCI field is an in-depth study of insertable technology with the focus on interaction and the associated challenges and opportunities.

RELATED WORK

In this section we will discuss previous work related to our study. First, we will focus more in general on implantable devices and then we will move on to insertable devices which is especially relevant to our field of focus.

Implantable Devices

There has been some interest in HCI community in implantable devices. Skov et al. [35] conducted a study with implantable cardioverter defibrillator (ICD) patients about monitoring, data collection, privacy and surveillance. Additionally, Denning et al. [6] explored patient views and values regarding their IMDs, including safety and security. In another study Homewood and Heyer [16] explored the possibilities of microchip based implantable contraceptive device. Their study focused on existing implantable contraceptives and designing an interface for possible future solution. However, research on implantable devices has been primarily focused within medical field where numerous implantable devices are used for medical purposes [2, 16]. Research has focused on reviewing benefits and limitations of monitoring patients long-term with ICDs [29] and implantable loop recorders (ILRs) [21]. In addition, other researchers focused on evaluating such devices as a form of treatment to various illnesses [5].

Furthermore, there has also been interest in implantable devices in psychology research. Previous research has been conducted regarding the acceptance of technological implants and the factors that affect the decision to use them. Pelegrín-Borondo et al. [30] focused on implants used to increase human capacities, namely "insideables". The authors developed a model that measures the acceptance of new technological products and found that positive emotions have the greatest impact. Other studies by Whited et al. [39] and Wong [41] investigated mental health of patients with ICDs. The studies focused on common psychological risks for ICD patients such as depression and anxiety. Some of the findings of the studies showed that there were various factors that were associated with depression in ICD patients for example older age, marital status, self - care dependence etc.

Insertable Devices

Within HCI there have been some studies regarding insertables. According to Heffernan et al. [13] in the last 20 years people have been voluntarily inserting devices under their skin for other purposes than just medical, as for everyday convenience or to extend human capabilities [13].

People interested in modifying their bodies and experimenting with insertables are a part of the transhumanism movement, which was introduced in 1990 by More [25]. The focus of the movement is to facilitate the technological enhancement of individuals' bodies, senses and intellect [7]. A subculture of transhumanism related to insertable technology is called "grinding" [22]. Grinders describe themselves as individuals practicing functional body modification in order to extend human capabilities and experiment with their bodies [40].

As previously mentioned, Heffernan et al. [13] conducted extensive research on users with insertable devices, looking into their motivations. The authors uncovered various reasons why people decided to insert NFC and RFID microchips or magnets in their bodies. Some of the interviewed participants talked about sensory improvement, as magnets were used as a sensory aid for blind people. Another reason was accessibility and efficiency of everyday activities, such as unlocking a door or launching applications. Other reasons include tracking health information such as body temperature. In addition, some of the participants decided to get an insertable device because they were interested in body modifications or saw these devices as the next big thing. Lastly, a reason for choosing to insert devices was being tired of wearables and finding insertables more convenient as they were "*always available*".

There has been a growing interest in RFID and NFC microchips as insertables in humans. Various research papers [23, 8, 32] studied these devices in depth. One of the papers focused on people's perception of RFID microchips for employee identification in the workplace [31] which revealed more negative than positive attitude. Another paper discussed potential situations in which the use of microchips could be applied, such as e-payments and privacy applications [24].

There has also been interest on risks and concerns regarding insertables. Three broad categories have been identified regarding insertable devices - health risks, social stigma and ethical concerns [13]. Health risks referred to the possibility of rejection or infection; social stigma referred to the perception of people being "different" while ethical issues stemmed from concerns of privacy and access. Heffernan et al. [13] argued that ethical concerns were not an issue with most current non-medical insertables as they were not location-tracked, however, this argument did not include technology that would require active tracking and monitoring.

STUDY

The aim of this paper is to gain a richer understanding of the interaction with insertable devices and what kind of challenges and opportunities the current insertables have, as well as touching upon the motivation and use of said devices.

We divided our study into two distinct parts. First, we conducted a digital ethnographic study and analyzed YouTube videos of people interacting with their insertables. Second, we implemented an online survey to enrich our data and ensure scientific validity. In order to conduct the digital ethnographic study systematically, it was divided into three phases: Search, Filtering and Analysis.

In the Search phase we searched for YouTube videos where people either talked about their insertables or showed how they interacted with the insertables and other devices. In the second phase we discarded videos that were commercial or did not provide any relevant data for our study. Finally, we coded the final set of videos focusing on the interaction between the user and the insertables. In both video analysis and the survey, we use the terms "implant" or "implantable technology" instead of "insertable" or "insertable technology" because the users themselves are using the former set of terms. Therefore, we did not want to create confusion by using the new terminology.

YouTube as a Data Source

The rise of digital technologies has provided new opportunities for ethnographic studies that allow for easier and different ways of collecting data, for example, by utilizing online questionnaires, social media sites, blogs and digital videos [27, 36]. As video sharing platforms have become increasingly popular, YouTube has become a rich ground for gathering data and many studies across multiple disciplines have previously used YouTube as a data source [12, 38, 34, 1, 3].

We chose to implement this research method as according to Paay et al. [28] YouTube videos can provide new insights into interaction in real life settings. In our case it was difficult to gain insights into the real life of users with insertables, as this type of technology was novel at the time of our study and the number of users was relatively small. In addition, Jewitt, [18] has stated that the analysis of video data can also help researchers due to the ability to re-visit the videos and share them.

However, researchers might not get all the necessary information from the videos as it is not possible to expand on the topic as in face-to-face studies and important elements could be excluded from the video. Anthony et al. [1] did find some success in contacting the uploaders to expand on some uncertainties, therefore, we implemented the surveys in our study as well.

Part I: YouTube Video Analysis

Technology: RFID, magnets, NFC
Additional keywords: implant, implantable, microchip, biohackers, biohacking, use, experience, interaction, personal, transhumanism, transhuman, hobbyist, cyborg

Table 1: Search keywords.

As mentioned above, our video analysis was divided into 3 distinct phases.

Phase 1: Search. We chose 3 most common types of non-medical insertable technologies, as pointed by Heffernan et al. [14] and combined them with additional keywords which can be seen in Table 1. As most of the keyword combinations yielded thousands of results, it was decided to stop searching for videos after most search results started to be irrelevant. Initially a total set of 166 relevant videos were found during February 25 - 26, 2018.

Phase 2: Filtering. In this phase we filtered out 30 videos due to being either irrelevant, duplicates or being commercial e.g. videos that advertised specific insertables or companies. Additional 14 videos were removed from our data set during the iterative analysis process. After a more careful analysis of the videos, it was discovered that these videos were also either irrelevant, duplicates or were in a different language. This phase resulted in 122 videos.

Phase 3: Analysis. Our final data set consisted of 122 videos, and some videos had more than one person in them. In addition, some of the users had uploaded more than one video concerning insertables, therefore, our study had 101 unique users out of 122 videos. Almost half of the videos were uploaded in 2016 (39 out of 122) and 2017 (19 out of 122). The average length of the videos was 3.56 minutes with the shortest video being 6 seconds long and the longest video being 29.36 minutes long. Interestingly, 117 out of 122 videos were positive, while only 5 included users with a negative opinion.

The structure of the analysis phase was inspired by a paper by Anthony et al. [1]. First, we adapted their search procedure by combining various keywords as seen in Table 1. Second, we were inspired by the format of the dimensions table from the paper and adjusted it to fit our study which resulted in 15 dimensions, as seen in Table 2.

First, the three authors of this paper coded 8 randomly picked videos independently which was followed by a discussion to align our perception of what the videos were about. As there were no significant disagreements, the analysis was continued by dividing the remaining videos between us and coding them independently.

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue

User Characteristics:
7. Age group: under 20, 20s, 30s, 40s, 50+ 8. Gender 9. Frequency of use 10. Motivation for having the implant 11. Overall impression/opinion of having the implant (concerns, regrets etc.)
Type of interaction:
12. Context: e.g., home, vehicle, office, garage 13. What is the implant used for 14. Use of external objects: e.g., smartphones, locks, metal objects 15. Opportunities and problems

Table 2: Dimensions of Video Analysis.

Part II: Survey

After the video analysis we conducted an online survey to complement our findings. There was a number of aspects we were not able to explore, such as some of the users' motivations and experiences. For example, a surprisingly small number of users talked about why they decided to get an insertable device. Therefore, we explicitly asked the survey respondents to elaborate on this topic. In addition, we wanted to collect more information about what kind of problems people have with their insertables, or what were their predictions about the future of insertables. We decided to conduct a survey with Facebook groups instead of YouTube users as we aimed to collect complementary data set by addressing other kinds of users.

The survey was created via Google Forms and consisted of 16 questions, for example, "*Have you experienced any problems while using your implant/s?", "Why did you get the implant/s?"* or *"Do you have any concerns regarding security, privacy or ethics?"*. The survey was posted on two Facebook groups dedicated to users of insertables - one group dedicated to RFID and NFC insertables and one group dedicated to magnets. In total we received 68 responses within 12 days which were then coded using directed content analysis [17]. We used prefixed categories derived from the video analysis to code the survey responses.

FINDINGS

In this section we will report the main findings of our video analysis and the survey. First, we will report on the characteristics of people who have insertables, then we will present the main themes of our findings. As stated in the study section, we have a total of 122 videos and 101 unique users. When presenting the findings of the video analysis we refer to video uploaders as users and respondents when we present the survey findings.

As one aim of the study was to find out what kind of people were interested in insertables, we also focused on the user characteristics. The video analysis showed that majority of people with insertables were males (84% out of all users) while only 16% of all users were females. The results of the survey also confirmed the distribution between genders - 78% males and 19% females.

Overall most of the users appeared to be in their twenties (45%). Again, the survey findings seemed to confirm the user characteristics regarding age as well, as 49% of all respondents were in their twenties. In almost half of the videos (40%) we were very unsure about the age, therefore, we labeled age in those videos as Unknown. Interestingly, there were several older users with insertables as three users (3%) were in their forties, while one user (1%) appeared to be in his sixties or seventies. The survey confirmed the video analysis findings as only two of the respondents (3%) were over 50. In addition, the survey results revealed that there were also a few respondents who were under 20 (7%).

According to our survey, the majority of users got the insertables during 2017 (32%) and 2016 (19%). Except for one, all of the survey respondents still had their insertables. That respondent removed their insertable due to the device migrating and having to be removed (S34).

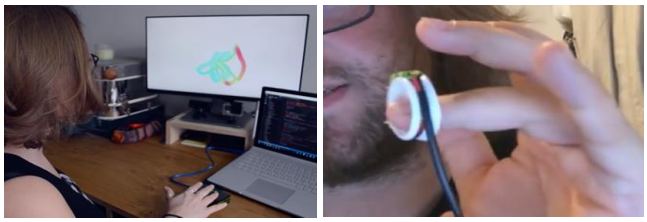
Regarding the insertables that the users had, most of the users reported having an NFC or magnet insertable as seen in Table 3. The numbers display the total amount of users of each type of technology and placement combination. The numbers in the brackets represent the data gathered from the survey. 38 users reported having RFID/NFC microchip, however, it was unclear if the users had a chip that combined both technologies or they were uncertain of the type of insertable they had. The most popular placement for the RFID and NFC microchips was the purlicue on either the left or the right hand, while the most common placement for the magnet insertables was the fingers. The category "other" under placement refers to insertables in the forearm, tragus, elbow, wrist, sternum and the side and top of the hand.

	Type of technology				
	NFC	**RFID**	**RFID/ NFC**	**Magnet**	**Total**
Purlicue	30 (7)	15 (3)	13 (14)	0 (0)	58 (24)
Finger	0 (3)	0 (0)	0 (1)	29 (9)	29 (13)
Palm	0 (0)	0 (0)	2 (0)	4 (0)	6 (0)
Other	2 (5)	1 (1)	0 (8)	0 (4)	3 (18)
Total	32 (15)	16 (4)	15 (23)	33 (13)	-

Table 3: Placement and type of the insertables.

(a) (b)

Figure 2. Interaction for access and identification: (a) a user with an RFID insertable demonstrates unlocking his phone; (b) a user with an NFC insertable demonstrates unlocking his car.



(a) (b)

Figure 3. Examples of interaction for creativity and playfulness: (a) the user in V25 uses the digital drawing machine with her magnet insertable; (b) the user in V64 demonstrates using his magnet insertable to listen to music.

According to the survey, half of the respondents used their insertables daily, while 21% used it a few times a month.

Access and Identification

Our analysis showed that in the majority of videos (73 out of 122), the primary purpose of the insertable interaction was for access and identification. The videos demonstrated users gaining access to applications, websites or contact information on smartphones, as well as using their insertable as means of identification. All 73 videos with this type of interaction were task-oriented and included the use of either RFID or NFC insertables.

Some users programmed their insertables via an application and stored various information e.g. text files and links as they saw their insertables as an opportunity to have an easier and faster way to share their personal information with others. This was confirmed by the survey findings as 63% of respondents used their insertable to share information with other people. In V81 the user talked about letting others scan his insertable with their devices to access a website that presented his work. According to him, it was *"an original way to promote my work"*. Other two users used their insertable as a way to transfer information from the insertable to other people's devices or vice versa. For example, in V78 the user demonstrated how he scanned his NFC chip with other people's devices, to transfer his business card to their device. In addition, in V85 the user showed how to access a website by scanning his NFC chip by any NFC-enabled smartphone. Both interactions can be seen in Figure 3. In contrast, another user demonstrated how a person sent a written message from their device to the user's NFC chip (V94).

One of the most common uses of the insertables (43 videos and 35 unique users) was access with identification purposes in order to activate functions, usually on their smartphones or computers. These findings are also illustrated by the survey findings as 77% of all respondents used their insertables as a form of identification for similar purposes as the YouTube users.

Most of the insertables concerning identification interacted with either door locks, phones or computers. In 28 videos the insertables were used to unlock or lock either a car door or a regular building door. For example, in V88, the user had placed an RFID reader on the inside of his car, next to the front door on the driver's side, and he scanned his chip by placing his hand on the outside of the same place as the reader, to unlock his car. In V54, the user followed the same steps, but he started the engine of the car as well. Both cases can be seen in Figure 2.

In the 28 videos in which the insertables were used for identification, users had to purchase and install extra hardware either next to the doors, in the cars or motorcycles, in order to use their insertables. The actions of opening a door required RFID or NFC readers, while starting a car or a motorcycle required some modifications to the ignition. In several videos the users showed the readers that they had installed in order to use their insertables. However, using the insertables with public systems did not require extra hardware as those systems already had an RFID or NFC reader installed. For example, one user (V33) explained that he got tired of using a key card for entering his university, so he switched to an NFC insertable. With the help of the IT department he was able to switch from using his student card to his NFC chip.

Second most common use for identification purposes was to unlock smartphones (8%) or to log in to computers (4%). Other less common uses involved using the insertables to use and pay at a vending machine, boarding a plane, opening a road barrier or an emergency tag as well as paying with the insertable (3%). None of the videos demonstrated interactions between the insertables and other people.

Due to the nature and the capabilities of the insertables, only RFID or NFC chips were used to identify the users while magnets did not serve this purpose in the analyzed videos. In most of the videos the insertables were used in a private context either at home or to interact with personal systems such as cars, phones or laptops. However, four videos showed interaction with public systems. Two videos demonstrated the use of insertables to open doors either at work or university while another video showed an insertable used to interact with a vending machine which was placed at work. Lastly, in the fourth video the user interacted with an RFID/NFC reader at airport in order to board a plane.

Playfulness and Creativity

Our findings showed that in almost half of the videos (49 videos and 38 unique users) the purpose of the interaction was quite different. In these videos the users used magnet insertables, which overall had a less purposeful interaction, unlike the more task-oriented interaction with RFID and NFC insertables. In some cases, the decision of getting a magnet insertable was more spontaneous. For example, one user wanted to get a piercing, but that was not possible at that time, so she impulsively decided to get a magnet instead. As she stated: *"I told myself no, I will not leave without something new, then I was just talking a little bit and looked at magazines, and it was jumping from one topic to another and then I had a magnet in my finger"* (V73).

The majority of users used their magnets to pick up or play with metallic objects such as paper clips and metallic balls. In some videos, users played with compasses by using their magnet insertables to interfere with electromagnetic fields and demagnetize them. The magnets were also used to sense electromagnetic fields and multiple users described having a 6th sense. Survey findings also showed that 25 out of 68 respondents used their insertables for the same purpose.

However, some users had more unconventional and creative uses of their insertables. In V64, the user was listening to music through a magnet in his finger. He placed the finger with the magnet into a coil taken from a simple speaker, thus, enabling him to listen to music whenever he puts his finger close to his ear (Seen in Figure 3 Image b). When he demonstrated how he placed his finger into the coil, he stated: *"I can feel in my finger the rhythm, I can feel the bass, I can feel the hi-hats"*.

Another user inserted magnets in both of his tragi in order to have wireless headphones with him at all times (V104). Furthermore, one user used his magnet insertable to wipe magnetic strips on tickets and cards. Finally, in V25 the user built a system which allowed her to draw digitally, using the magnet insertables in her fingers. The system she built consisted of different types of additional hardware, that was used to build a magnet reader, which sensed electromagnetic fields. This reader was then connected to her computer. By moving her magnet insertables over the reader, the movements were registered and illustrated on the computer screen as colorful drawing lines on a blank page (seen in Figure 3 Image a).

Challenges and Obstacles

We found that 57 videos (47 unique users) illustrated some challenges and obstacles in the interaction and use of the insertables. The challenges discussed in this section indicated that the field of insertables was still underdeveloped. The most common challenges and obstacles present in the videos included: 1) lack of compatibility with other technologies, 2) insertables being insufficient, 3) limited functionality and 4) unexpected interaction.

(a) **(b)**

Figure 4. Examples of awkward positioning: (a) the user in V111 scans his NFC insertable at the airport; (b) the user in V83 demonstrates scanning his NFC chip on his self-made reader.

The first challenge was related to the lack of support from surrounding technology which made the interaction with insertables more difficult. For example, one user mentioned that current RFID readers were designed to read from flat surfaces:

"NFC readers, (...), expect really a flat surface chip. The chip in my hand is cylindrical, it's in the glass container and it's underneath my skin. So, getting the NFC reader physically to be able to read the content of the chip is kind of difficult. I have to angle my hand in an uncomfortable way against the reader, even push my hand onto the reader, which makes it kind of uncomfortable and maybe unhygienic as well." (V113)

This was an obstacle for several users in the YouTube videos and the survey. In the videos a total of 9 users had to awkwardly position their hands for the reader to be able to read their insertables: "*It's awkward to hold my hand like this*" (V29). This is illustrated in Figure 4. 15 respondents of the survey also confirmed that this was an issue for quite some users with insertables. In addition, other 8 users demonstrated that they had to fiddle with their insertables or readjust the angles in order for the insertables to work with the readers. Also, in some videos it seemed to be necessary to have either direct skin contact or very close contact to be able to use the insertables.

Furthermore, this issue included problems with interacting with other technologies, as three YouTube users and five survey respondents specifically talked about either not being able to have an MRI at all (magnets): "*It needs to be removed before I have an MRI just like any other metallic implant"* (V103) or their insertables having some effect on the MRI and, therefore, needing to be covered (RFID and NFC chips) as the user in V43 explained: *"If you are in an MRI machine, the only thing that will happen is that you get a slight attenuation of the picture, it's just more blurry"*.

Secondly, in some videos the interaction with insertables was insufficient. Specifically, in 11 videos the interaction between the insertables and other technologies seemed to take more time than doing it without an insertable. Surprisingly, this was in direct contrast with the findings in

the motivation theme, which is introduced later in the paper, as some users got the insertable to become more efficient. For example, one user used his NFC chip to board a plane and found that it took longer with his insertable: "*getting the NFC reader to read the content on the chip, takes much longer time than just reading the paper boarding pass or the boarding pass on your screen on the phone*" (V113). In addition, some of the videos clearly demonstrated the seeming inefficiency of using an insertable for mundane tasks, such as unlocking a smartphone as it took up to 6 seconds in some videos to finish the task. Not only did it take some time for the insertable to work, it also required some fiddling in some cases which contributed to the slowness of the insertables.

Third, we noticed some challenges related to the rather limited functionality of insertables. Two users mentioned that their insertable could only perform one function, thus, needing it to be reprogrammed every time they wanted their insertable to do something else. For example, a user (V33) talked about how in a perfect world he would never have to reprogram his insertable but that he had to already do it a couple of times that day. He also mentioned that when he went home he would set the insertable to lock up only but other times he would add his business card or a shopping list to the device based on his activities. The survey findings also illustrated this issue as six out of 68 respondents in the survey had reported that they wished the current insertables had more functionality as they were not that useful at that time. As S37 explained: "*It's a nice toy, but I want more functionality."* Moreover, 17 out of 68 survey respondents did report that they thought that their insertables were inefficient (slow or having to reprogram it frequently).

Finally, some users also talked about unexpected interaction while using their insertables. For example, five users mentioned the need to be careful when experimenting with magnet insertables as one user in V100 advised to: *"be very careful dealing with electricity"* or strong magnets. Some users as well as survey respondents (5/68) also mentioned that their insertable set off shop alarms or could wipe the magnetic strips of tickets or cards. In addition, the placement of the insertable also needed to be considered based on their activities or interests, as one user had to get her insertable in her right hand, because she was left handed and an artist. Therefore, it was crucial for her to get the chip in the opposite hand:

"*I am left-handed, so I made sure to get it in my right hand because (...) in the exact space that that (the chip) is chipped in my hand is where my pen or pencil would sit so it would be a massive problem for me if I did get it in the other hand*" (V81).

Physical Sensations and Health Concerns

According to our video analysis, getting an insertable device had both anticipated and unanticipated physical sensations as a total of 19 videos (14 unique users) discussed these sensations. In addition, a couple of users had concerns about health risks related to getting an insertable.

(a) **(b)**

Figure 4. Physical sensations: (a) the user in V47 with magnet insertables tries to sense electromagnetic fields in the city; (b) the user in V100 with magnet insertables senses electromagnetic fields near his AC/DC adaptor.

Physical sensations were most common in users who had a magnet insertable as 11 videos (9 unique users) and 37% survey respondents mentioned feeling electromagnetic waves, as they anticipated. They described the physical sensations as vibrations or buzzing when being close to metal objects, microwaves or electricity in general (Seen in Figure 4). 8 users reported feeling more and being able to extend their human capabilities with three users in particular describing it as having a 6th sense. One user (V102) described this experience as *"seeing a new color"*. Even though such sensations were weird at first, they described them as *"amazing"* and *"a wonderful experience"*. Few users loved these new sensations so much as one of them (V47) said "*it enriches my everyday life and I'm experiencing joy"*.

However, not all of the physical sensations were anticipated for either the YouTube users or the survey respondents. Two users with insertable RFID or NFC chips talked about disliking that their insertable was visible and they could feel it through the skin. In addition, four users and 10 survey respondents reported feeling uncomfortable or having pain due to the insertables: *"My fingertip magnets can be uncomfortable while gripping something very hard"* (S29), while another survey respondent (S59) mentioned experiencing "*phantom itching*". One of the RFID chip users mentioned that he would feel pain if too much pressure would be put on his insertable, thus, making holding heavier objects sometimes uncomfortable. Likewise, in V62 one user of a magnet insertable mentioned that he felt *"uncomfortable around bigger magnets"*, while another one mentioned discomfort when he was around microwaves.

In regard to health risks, two users discussed what should be taken into account when deciding to get an insertable. More specifically, one user talked about the case of having a cheap RFID/NFC chip, which might break inside the skin or transfer bacteria and cause infections. Another user, who had a magnet insertable, mentioned the chance of infection or the possibility of losing the magnet underneath the skin. One of the survey respondents actually experienced an

infection problem: *"Removed the magnet because the coating of the magnet was dissolving overtime starting to cause a small infection, decided to remove it before it would cause more issues."* (S22) The rest of the users were not worried or did not mention health concerns at all.

Motivation

In 27 videos (18 unique users) users explicitly talked about their motivation for getting an insertable device. In these videos we identified three main motivations for having an insertable, namely practical application, transhuman capabilities and self-expression. Some of the users had multiple reasons for trying out the technology. Our findings on motivation were for the most part aligned with the findings of Heffernan et al. [14] work on insertable technology. Both their findings and our study confirmed that many users decided to get insertables because of efficiency and extending human capabilities, as well as wanting to experiment with the technology. However, our study also showed that some users wanted to get an insertable to express themselves and be different.

The first motivation for getting an insertable was due to practical application (8 videos and 9 unique users, as one video had two users). These users decided to get an insertable because of efficiency and convenience. Users talked about the benefits of not carrying tags, keys and wallets anymore for various every day activities such as unlocking doors: *"I recently built this RFID system for my doors but didn't like to carry around a tag with me, so I got one injected into my hand*" (V5). Additionally, users enjoyed that most mobile phone functions were automated e.g. in V33 the users stated: *"(…) you can send automated SMS, turn on and off GPS etc."* making them faster and easier to complete. In addition, the same users in V33 stated that the insertable became so convenient that: *"it's a constant part of my life"*. The results of the survey also confirmed the video analysis findings as almost half of survey respondents (47%) got one or more insertables to become more efficient in their lives. For example, one of the respondents (S46) mentioned that: *"I suffer from amnesia, making it near impossible for me to keep track of my keys. I can't lose a key that's in my hand."*

The second motivation for getting an insertable was to extend human capabilities as 9 users (6 unique users) were interested in the transhumanism movement. In V47 the user stated *"(...)through the use of technology we can transcend the suffering in human condition"*. Some of the users with magnet insertables said that they enjoyed having new abilities, for example, picking up small screws from a laptop. Another person with magnet insertables said: *"(…) you can tell which way is north, you can tell when something is magnetic"* (V102). For the survey respondents extending human capabilities was the most common motivation as the majority of respondents (47/68) got an insertable due to this reason. In addition, in 8 videos (7 unique users) users chose to deliberately insert a piece of technology in themselves as they wanted to explore and understand the possibilities of such technology either due to an academic experiment or out of curiosity: *"It's interesting to experiment and see where the things (technology) are going"* (V11). Users seemed to be especially curious because insertable technology is not medical and is inserted by choice. In contrast, almost all of the survey respondents (60 out of 68) reported that one of the reasons for getting an insertable was to experiment with the technology.

The third motivation for getting an insertable was because in some videos (four unique users) users wanted to express themselves in a unique way. Some of them got an insertable because they wanted to feel *"cool"* (V62). Other users also talked about wanting to be different or provocative: *"It's meant to be extreme or pointless or even like provocative, thought inspiring…just something different"* (V91). However, the survey findings showed a significantly higher number of respondents (28 out of 68) who wanted to express themselves and be different by getting an insertable.

Security and Privacy

Security and privacy are important aspects of insertable technology. Surprisingly, it was less of an issue in the analyzed videos. Security and privacy were addressed by four out of 101 users. Two of the users were not concerned about these issues. One of them mentioned in V48 that security is enhanced by RFID chips, as *"no one can start the engine [of his vehicle] without the chip"*. The other user was not concerned about privacy issues as he explained that the NFC chip can be scanned and read only within a small range. He stated that he was only *"interested in investigating social and privacy issues"* (V95). Finally, only two users mentioned that they were concerned about security and ethical issues respectively.

The survey findings showed a similar trend in regard to security, privacy and ethical issues, as 88% of all responders were not concerned with the aforementioned issues. Some of the more common arguments included the limited range, the passiveness of the insertables, not storing private information in the insertables and the technology not being advanced enough as respondent S29 stated: *"tech has not advanced to the point where implants would be a viable means of privacy invasion yet"*. However, several respondents did stress that security issues would become bigger in the future and would require more attention:

"I think future cybernetic implants that are more complex than these will have to be designed with security in mind and to give the user control over their data." (S19)

The remaining 10,5% respondents (7 out of 68) did have some concerns regarding security, privacy or ethics. However, most of the respondents seemed to be concerned about these issues in general and not just specifically about their insertables:

"Yes, I do have concerns regarding security, privacy and ethics in general, not specifically related to the implants. This is one of the reasons why I experiment with my implants, to learn more about the technology and the security, privacy and ethics aspects before these implants are as common as piercings and tattoos. Another reason is to create more privacy and security thanks to one of them." (S30)

DISCUSSION

There has been a growing interest in insertables in recent years by both users and HCI researchers [13, 14, 15, 16]. However, interaction with the insertables is still relatively under researched. Therefore, the aim of our study was to investigate why and how the users interacted with their insertables and what challenges and opportunities did they face during their interactions. We implemented a digital ethnographic study by analyzing 122 YouTube videos as well as we conducted an online survey in which we received 68 responses.

First, we identified two main interaction purposes: identification and access, as well as four related challenges and obstacles: lack of compatibility, inefficiency, limited functionality and unexpected interaction. Furthermore, we found that users were experiencing physical sensations, and some of them had health concerns. Our findings also show that most users got insertables due to three main motivations: practical application, transhuman capabilities and self-expression. Finally, we looked into users' views and opinions on security and privacy.

Whilst we achieved insight on interaction with insertables as one contribution of the paper, we identified a number of themes that constitute a second contribution of the paper. These are elaborated in the below sections.

Embedding Insertables into Existing Infrastructure

Prior research on insertables has focused mainly on why people are inserting these devices in their bodies [14] or what kind of devices are available and the most common uses for the insertables [8, 9, 10, 14]. However, with our expanded look at interaction with insertables, we have found that there is also a need to consider not only the embedding of the insertables into people's bodies but also embedding these devices into the existing infrastructure.

In terms of medical implantable technology, the infrastructure is a part of the interaction. The patients are provided with the necessary external equipment, which is required for the overall interaction with the implants, such as monitoring of the patient [11]. However, this is not the case for insertables. Users with these devices need to find, modify or build the necessary external equipment themselves. We have found that the infrastructure for this technology seems to be lacking at the moment. Our findings show that current technology is partially ready to support the use of insertables.

Most of the challenges that the users in our video analysis and online survey have encountered seem to stem from the immaturity of the existing infrastructure. The users who use their insertables to interact with other technology need to utilize common readers that are meant for regular RFID and NFC tags as currently there is no possibility to purchase readers designated for the use of insertables. Therefore, in some cases the interaction with insertables is slow or results in having to position their hands awkwardly in order to complete the intended task with the insertable.

In addition, many users reported having an insertable device in order to become more efficient for convenience sake, which is also confirmed by prior work [13, 14]. However, a number of both YouTube videos and survey responses showed that in reality their devices were quite inefficient at times. This indicates that at the moment there does not seem to be a clear fit between efficiency and insertables. Moreover, the design of the insertables and the location needs to be considered in order to improve the efficiency and use of the insertables.

However, even though most users have experienced problems with their insertables and that the current infrastructure is not yet ready to support the use of insertables, almost all respondents did answer that they had no regrets regarding their insertable. This also confirms the findings of a study by Heffernan et al. [14], who reported that there were no regrets from any participants, even in cases when the user's body rejected the insertable and had to be removed. This consistent positive attitude of the users could be due to various reasons, which could be a topic for further research. While the current users seem to be willing to handle the limitations of interaction with insertables, it seems unlikely that insertables would become commonly used without improvements in the current technology.

Ethical, Security and Privacy Considerations

Security and privacy of implantable medical devices have been extensively researched over the years. The main risks related to the IMDs include confidentiality of the user data, integrity of data transmitted from the devices and availability of the device to function properly [4, 33]. However, these issues are not as relevant to the current insertable technology. The main difference is that users of insertables are not medical patients, therefore, their concerns are very different. Insertables are not usually used to store confidential information about user's health or treatments. In addition, if the insertable device would be tampered with and made inoperable, the consequences would not be life-threatening. Moreover, the users are able to remove their insertables whenever they want. Finally, the interaction and opportunities with the insertables are currently limited, thus, this could be an additional reason why users are not concerned about security and privacy.

Prior work [8, 32] has looked more specifically into security, privacy and ethical aspects of insertable technology. RFID chips in particular were found to have

weak security measures and users should be aware of this issue. In contrast, users in our study did not have any concerns related to the current insertables. As many users stated, an important reason why security and privacy do not concern them, is that current insertables as RFID and NFC microchips have a very short range. Another reason mentioned was that the insertables were passive and did not store sensitive information such as bank account details.

Ethics regarding implantable medical devices are mainly focused on the question of removing these devices from the end-of-life patients [42, 19]. The matter of getting an IMD is not the focus of research as these devices serve a life-saving purpose. In contrast, the issue of ethics related to insertable technology is related to the decision of getting an insertable device. A study conducted in Japan [26] showed that even though young people are accepting of insertables, they are questioning the morality of this technology. On the contrary, ethics was not an issue for most users in our study, as they argued that getting an insertable was a voluntary action that was related to their own body.

Implications for Interaction Design

While insertable technology is still very new, our study shows that there is potential in this type of technology. Some of the most useful applications seem to be related to identification and access, as people can access buildings, cars and other objects without having to carry around keys, cards or tags. While it might not seem such a hardship to carry these things around now, the hectic pace of today provides many distractions for people [13] and eliminating some of the things that people have to consider can be very useful. The insertables also provide an easy and fast way of sharing data that is stored on the devices. However, today most types of technology can be disabled at any time the user wish to do so. For example, one can turn off their smartphone or take off any wearable devices. Insertables, specifically RFID and NFC chips, do not offer this opportunity to users yet. This could be an issue in the future, therefore we need to investigate how to deal with it.

Moreover, one of the most promising future applications could be the possibility of paying for goods and services everywhere and anywhere without credit cards or wallets. There are already some developments in this area, for example VivoKey, an insertable device that will *"cryptographically merge the user's biological and digital identities"*, ensuring higher levels of security [37]. Our study also shows that people with insertables see great potential of this technology in medical applications. In particular, Heffernan et al. [14] concluded that monitoring biometric data from within a human's body could be one of the possible future applications of the insertable technology.

However, in order to use the insertables efficiently the current technological infrastructure need to be improved. Technology needs to support insertables and interact with them seamlessly. When designing technology for this purpose, the location, range and other characteristics of the insertables need to be considered. Another aspect to be considered is that seamless interaction could potentially cause unwanted interaction. For example, a user may unintentionally unlock their phone by being in close proximity with the device.

In addition, pairing the insertables with more types of technological devices would provide more opportunities of use. Currently, the most popular device to pair the insertables is an Android phone. Expanding to more technological devices would develop more functionality and applications that the insertables could be paired with. In addition, expanding the storage of the insertables would allow for more than one function at the time, making the device more useful and efficient.

Furthermore, as technology becomes smaller, interaction designers need to contemplate how to design safe and flexible insertables. It is necessary not only to ensure the security and privacy of insertables but also to solve the issue of being able to update the insertables without having to remove them. It is also necessary to consider the issue of accidental interaction as our study shows that this kind of interaction could lead to unanticipated consequences. Thus, there needs to be safeguards to ensure that insertables are used only when intended.

CONCLUSION

The aim of this study was to expand on prior research and investigate the use and interaction with insertables, challenges and opportunities related to this interaction as well as motivation of getting an insertable.

Thus, we conducted a two-part study by applying digital ethnography to observe interaction in real-life settings by analyzing YouTube videos, as well as an online survey to complement the data from the video analysis. Our study showed that there were two main purposes for interacting with insertables: access and identification and interaction for playfulness and creativity. The former purpose was task-oriented while the last purpose was for leisure and fun. However, our findings also show that there were multiple challenges such as limited functionality, lack of compatibility with existing technology, inefficiency and unexpected interaction. In addition, interaction with insertables also has both side effects and security concerns related to the insertables.

Finally, there are numerous opportunities for future applications of insertable technology e.g. biometrics, payment and expanded functionality of current technology. However, due to the insertable technology being very new, there is a need for extensive research into various aspects of the technology, such as security, privacy and ethics.

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2. REFLECTION

2. REFLECTION

In this section we will discuss the methods we have used during the 9th and 10th semester of IT Design and Application Development program. As we chose to focus our last two semesters on Human-Computer Interaction, we have implemented a number of user-centered research methods during our studies in order to gather data from the users. In this section we will reflect on both the limitations and opportunities of these methods in terms of collecting data and how useful they were for the involvement of the users in our studies. Having an overview of all the research methods that were used helped us gain a deeper understanding of them and of conducting research within HCI in general. By implementing a variety of different methods throughout these two semesters, we were able to gain practical experience and understand the opportunities and limitations of each method from our point of view. We will discuss the research methods we used in the chronological order we implemented them, as this order demonstrates our learning process and how the experience we gained influenced our future decisions on finding the most useful methods for each project.

2.1 Diaries

In our 9th semester we used a number of methods in order to investigate why people remove their fitness trackers. While we wanted to study how the participants used their fitness devices in real life settings over a longer period of time (9 weeks), it was not feasible to conduct observations and follow them home. Therefore, we decided to implement diaries in the first 6 weeks of the study. As mentioned by Lazar J., Feng J. H. and Hochheiser H. (2017a), *"diaries used in conjunction with other methods strengthen the research findings"*. In addition, comparing diaries to surveys, another method that allows users to record data, diaries have the advantage of *"not only describing what people do, but also understand why they do it"* (Alaszewski, A., 2016). Moreover, usually participants write down their thoughts and experiences shortly after the event, therefore, the data from the diaries is more accurate. Finally, the personality of the participants affects the interpretation of the act only to a limited degree (Alaszewski, A ., 2016).
During our study, the participants wrote down the date, time and reasons for taking off their trackers. In addition, we had access to the user accounts of the participants in order to monitor if they were wearing their fitness trackers as much as possible, which was one of the main conditions of our 9th semester project.

We found diaries to be useful in providing insight in user habits related to using the fitness trackers as we could collect data over the course of 6 weeks. We also successfully used the diaries when preparing and conducting the interviews as one of the main aims of the diaries was also to facilitate the discussion during the interviews. We knew that it would be very difficult for the participants to recall their experiences during the last 6 weeks if they had not filled out the diaries every day or a week beforehand. But with diaries we could ask more specific questions and help participants recall their experiences. In addition, our access to their accounts helped to ensure that the participants complied with the study and synced their fitness trackers daily.

However, there were several limitations to using diaries as a research method. First, we were not explicit in how we wanted the participants to write their diaries and did not provide a template, therefore, most of the participants' diaries resembled logs and did not provide ad-

ditional insights into the participant experiences or thoughts about the fitness trackers. Second, we were not able to control if the participants wrote down all the necessary information every time they took off their devices. Some participants admitted forgetting to write down the information and filling out the diaries much later, thus, resulting in incorrect data in the diaries. Afterwards, we did reflect on the use of diaries and did consider that in the future we would ask the participants to send in their diaries each week in order to prompt them to write the diaries.

In addition, we had problems with ensuring the compliance of the participants. Not only we could not ensure that the participants filled out their diaries timely, we also had to prompt the participants several times to sync their fitness trackers each day. We had to tread lightly as we did not want to annoy the participants and bother them too much as the participants were volunteering in our study and did not have any additional value for participating, therefore, they could always quit the study which would have negatively impacted our study.

2.2 Interviews

After 6 weeks of the participants wearing their fitness trackers and filling out their diaries, we followed up with interviews, which was the main source of our data. According to Lazar J., Feng J. H. and Hochheiser H. (2017b), interviews are very beneficial for HCI research, as they give the researchers "*the opportunity to get direct feedback from users*", whether they are conducted with an individual user or multiple users. It is the only way to explore the user's perspectives and thoughts in depth, get detailed responses and generate ideas that could not have been acquired by using other techniques.

We decided to conduct semi-structured interviews, as we aimed to gather answers on specific questions, but we also wanted to follow up on participants' comments, in order to gain further insight. It was very beneficial to first start with the diaries as it helped us develop our interview guide and ensure that we could dig deeper and gather valuable data.

For the most part the interviews were a useful method and allowed the participants to expand on their diaries and talk about their experiences and thoughts about the fitness trackers. However, in some interviews it was quite hard to get the participants to open up and talk more about their experiences, as some participants did not talk a lot and gave very short answers. That made asking follow up questions hard. In addition, some participants seemed to be hesitant to talk about more personal things, for example, removing the fitness trackers during sexual intercourse. It could have also been the issue of talking about such topics in person with interviewers who the participants did not know very well, as some participants opened up more in the Day Reconstruction Method which followed the interviews and involved just filling out a survey.

2.3 Day Reconstruction Method

We also implemented the Day Reconstruction Method (DRM) in our 9th semester to prompt participants to speak about their routines and experiences with using fitness trackers every day. The method was developed by Kahneman, D. et al. (2004) in order to assess activities and settings of participants' daily lives. Participants were asked to systematically reconstruct

their experiences during the previous day and rate their activities based on a number of affect descriptors.

We found this method to be interesting to use and it mostly confirmed our findings from the interviews and the diaries, therefore, it provided more scientific validity to our results. This method was also useful for gathering actual data about the participants' life as it was still very fresh in their minds and it makes it much easier to recall specifics about the previous day instead of asking to recall things from weeks before. In addition, we could see that in some cases the participants opened up about more personal details of their lives during the DRM as opposed to interviews. Therefore, it seemed very useful to combine the interviews with other methods in order to ensure that the participants had the chance to express more personal details that they were not comfortable to share face-to-face.

However, there were some insufficiencies when implementing the DRM, some of which were due to our own decision on how to implement this method. More specifically, we wanted to minimize the workload of the participants as they had already filled out diaries and met us for several meetings. Therefore, we implemented the DRM in the form of an online survey and, thus, lost most of the control over it. The method was originally intended to be conducted in person and, thus, we were not able to help the participants or ensure that they took enough time to reconstruct the previous day. We had no way of knowing if the participants took the 10 to 15 minutes each time to think about their previous day or if they just did it very quickly which could have impacted the accuracy of the results. In addition, afterwards some of the participants mentioned that they found the method to be somewhat confusing and were unsure how to rate their experiences, which could have been avoided if it was conducted in person and we could have resolved any issues immediately. We also asked the participants to fill out the DRM survey multiple times which turned out to be redundant as most of the days participants had the same activities and rated them the same.

2.4 User-Generated Videos

In the 10th semester we decided to conduct a digital ethnographic study and use user-generated YouTube videos as a data source. A number of previous research papers (Paay, J. et al., 2015, Anthony, L. et al., 2015, Harley, D. and Fitzpatrick, G. 2009, Weber, I., et al., 2013, Seo, W. and Jung, H., 2017) had successfully used this method to gain new insights into real life situations. In addition, according to Paay, J. et al. (2015) YouTube videos can provide new insights into interaction in real life settings. In our 10th semester study our research focus was interaction with insertable devices, a type of technology used by a small number of users worldwide, thus it was difficult to gain insights into the real life of users. Moreover, Jewitt, C. (2012) mentioned that the analysis of video data provide researchers with the opportunity to re-visit the videos and share them. Another advantage of using YouTube videos as a data source is that due to YouTube's popularity and the nature of insertables, there were many people willing to show their insertables. We also did not have to consider consent issues or the privacy and anonymity of the users, as all users uploading a video on YouTube give explicit consent that their videos are public and can be used as such.

We did briefly consider the use of interviews as a research method and try to find a number of people with insertables around the world and maybe conduct interviews over Skype or any other communication means online. However, as our main goal was to research the

interaction with their insertables, it seemed that interviews would not be sufficient as the participants would be only able to describe their interactions and share their thoughts. These videos could give an insight into the users that was not influenced by any outside influences and were more authentic.

Another reason for implementing this research method is that we found it very hard to find participants for our long-term study in the 9th semester. While we were quite surprised to struggle so much to find participants at first, in hindsight it was not very surprising as our study had the duration of 9 weeks and, therefore, required a large commitment from the participants to spend their time in order to help us. Moreover, we did not provide monetary or other kind of incentives for possible participants, thus, we were not able to find the desired number of participants.

The search and analysis of YouTube videos formed the main part of our study and also took the most effort and time. During the search phase, we chose to focus on the three most commonly used types of insertables and combine them with additional keywords. After the filtering phase, we ended up with 122 videos, which we decided to split between us three during the analysis phase, to work faster and more efficiently. Finally, we implemented the affinity diagram method to code our analysis results.

During the search phase of our study, we discovered the significant resistance that other YouTube users had towards the insertable technology. In most cases, all our search keyword combinations resulted in more videos that condemned insertables or talked about conspiracy theories related to them than videos from people who actually had insertables themselves. That made the search phase of our study rather time-consuming. We also observed that the majority of comments of each relevant video were related to negative opinions about the insertables with many commenters quoting Bible and expressing that insertables are unnatural and should be removed immediately.

We also had to be careful and include the term “implant” in our search to find more relevant videos as all video uploaders used “implant” instead of “insertable”. Otherwise we got many videos that were talking more in general about the regular RFID and NFC tags, which is a limitation that has to be considered when conducting a YouTube video analysis (Anthony, L. et al., 2015). Just searching for “implantable technology” or “implants” resulted in numerous videos about pacemakers or cochlear implants we had to overlook. It is also very possible that some users had named their video either too general or too specific for us to find. Overall, the search phase of the video analysis took a lot of filtering and ignoring irrelevant videos that came up in the search results no matter how specific terms we searched for. In addition, the majority of videos related to insertables were about the process of getting the insertable which was not the focus of our study as we wanted videos in which users either talked about their experiences with their insertables or actually demonstrated what they used them for.

When we were confident that we had enough videos, we started the filtering phase where we started to look at the videos themselves in order to make sure that we could use these videos in our study. Unfortunately, we had to discard some relevant videos due to the fact that we could not understand the language that the video uploaders were using or because some of the videos were commercial and just presented an overall look at the insertables. In addition, as we searched individually, we found a number of duplicate videos that we had not identified before as the results of many of our keyword combinations overlapped. It seems

that while we tried to use as many keyword combinations as possible in order to find all relevant videos, most combinations did not result in new videos that were not found previously.

We found that YouTube videos did provide interesting insights into actual interaction with insertables that we could not have gathered during interviews. However, we found that the biggest weakness of YouTube analysis for us was that we were not able to find some information in many videos that we wanted. This was also one of the limitations that Paay, J. et al. (2015) mentioned as being inherent part of video analysis. For example, we wanted to see what kind of people decided to have insertables and where they come from to see if there were any patterns. However, most of the videos did not indicate from which country the users came from, therefore, we could not conclude anything in regard to user location. In addition, in many videos we had to make our conclusions regarding the problems during the interaction with the insertables as in many instances the users did not speak about these issues and just demonstrated what they used their insertables for. In addition, we have to acknowledge that our data set might be skewed towards more positive videos as it is very likely that many people with bad experiences with insertables might not want to talk about them and upload a YouTube video.

The affinity diagramming was a very time-consuming and iterative process as we had to restart our coding several times. In the beginning we were too focused on the dimensions that we used while analysing the videos and started to sort the data based on the pre-established categories such as motivation, problems, opportunities, opinion and so on. That resulted in a rather top-down approach. After some consideration we decided to scrap the first version of our affinity diagram and start over without the preconceived categories, which was very difficult as these categories were still at the back of our heads. However, after careful and iterative consideration we managed to find new patterns. We found affinity diagramming to be helpful in allowing us to consider our data set in a new light, however, next time we need more space for the affinity diagram we had not considered the amount of data that would need to be sorted into patterns.

2.5 Surveys

As stated by Hua Z. (2016): *"Surveys are most commonly conducted using some form of questionnaire, and questionnaires are defined as any text-based instrument that give survey participants a series of questions to answer."* (Hua Z., 2016). In this report and the paper, we refer to this method as well as to the set of questions we used as surveys. According to Preece J. et al. (2015), questionnaires are a useful technique for collecting data from a larger number of participants, as well as from participants who are located in remote locations. Furthermore, the surveys can be used in parallel with other methods in order to gain richer understanding of the subject (Preece J., Rogers Y. and Sharp H., 2015).

We decided to implement surveys during both our 9th and 10th semester as we considered them a beneficial way to gather more quantitative data when needed and have numerous uses as well. For example, in the 9th semester we used the surveys as more of a reminder for the participants to fill out their diaries and reflect on the study itself as well. However, in the 10th semester we decided to conduct the survey to complement the video analysis with additional data. We could have tried to contact the YouTube video uploaders whose videos we analyzed, however, we wanted to gather extra data from other respondents. Our survey questions were based on our findings during the video analysis and we were able to ask

more specific questions as well.
We were quite surprised by the response rate (68 responses) in less than two weeks, however, in hindsight it was not very surprising as early adopters are usually very interested in talking about the technology and sharing their thoughts and opinions. Most of the respondents gave extended and explicit answers for most questions. They were very willing to share details about their overall experience with the insertables, as well as their thoughts and views on related issues. Overall, the survey confirmed the findings of the video analysis, however, it also showed that some of the respondents, who got insertables, were under 18, which was quite surprising to us as we had first assumed that insertables are not something that underage people would be able to get.

The analysis of the survey results was for the most part easy as we used Google Forms to create and distribute the online survey. Google Forms gives the opportunity to see the results in real time as well as provide a general summary of all results. However, the lack of specific functions on this software slowed down the overall process of the analysis. It was not possible to read the entire answer of each respondent when looking at the auto-generated charts, thus, we needed to look through all the 68 respondents to find that specific answer. Nevertheless, we did not have any further issues throughout the analysis of the survey.

2.6 Summary

Overall, we have tried out and implemented a number of different user-centered research methods with various success. We think that interviews and the video analysis have been the most useful methods we have used as they provided us with most data and allowed us to gather data about what the users think and how they use technology. While YouTube video analysis did come with a number of limitations, we do think that the data we gathered was very useful and in the future could be combined with a set of interviews to ensure a more rounded understanding of the interaction with technology. When the insertable technology becomes more mainstream, it would be easier to find participants and implement a different set of methods, for example, workshops, focus groups etc. However, we found the video analysis to be most appropriate at this point for what we wanted to study. These two methods were very different, especially in regard to the amount of control we had over each of the methods. Interviews provided us with a lot of control, while in video analysis we had no control over the users or the data that they were providing.

In addition, we did find surveys to be an easy way to supplement existing data or to act as reminders. In regard to our 10th semester, they were especially useful due to the fact that people with insertables are spread out across the world. Also, while it was interesting to try out the Day Reconstruction Method, we do not think we gained a lot of new data from it, therefore, it mostly functioned as confirmation of our existing data and functioned primarily as a way to ensure scientific validity.

Method	Positives	Negatives
Diaries	• Facilitate better recall • Collect data over a long period of time without having to observe participants in person • Use for elicitation during the interviews	• Lack of control • Wrong or missing entries in the diaries • Have to be very specific on how the diaries should be filled out (have a template)
Interviews	• Gain insight into the experiences of the participants • Expand on interesting issues/topics	• Interviewer bias (Leading questions) • Participant hesitance to talk about personal issues • Short answers or unwillingness to expand on a question
DRM	• Participants more willing to open up about personal topics (no face-to-face) • Recalling fresh memories from yesterday • Complementing the interviews	• Lack of control over the process • No use in repeating the DRM (the same answers) • User confusion and resistance
User-generated videos	• Large volume of data • No outside bias (voluntary decision to make a video) • Able to observe interaction in real life settings • No need for finding and managing participants • Ability to rewind and watch videos multiple times • No confidentiality or consent considerations	• Users show only what they want to show • Cannot expand on relevant issues • A lot of effort to filter through irrelevant videos • Users with negative experiences might not make a video • Time consuming (search & analysis) • Possible difference in analysing between the researchers (different perspective/style/etc.)
Surveys	• Large volume of quantitative data • Easy to distribute • Summary of data • Complement interviews or user-generated videos	• Lack of control over response rate • Cannot expand on interesting issues

Table 1. Opportunities and limitations of each applied method during the 9th and 10th semester

3. CONCLUSION

This project was our 10th semester Master Thesis where we investigated insertable technology. We were specifically interested in the interaction with the insertables as we see a lot of potential in this type of technology and, thus, wanted to research what the insertables could be used for and what kind of challenges or opportunities did the current insertable technology have.

We decided to study the insertables with the help of two research methods: digital ethnographic study and a survey. As it would have been very difficult to observe real life interactions with insertables due to the novelty of the technology, we chose to focus on YouTube which has become a rich ground for insights into everyday life of technology users. After our search provided us with 122 relevant videos we implemented the affinity diagram method to analyze our findings. Afterwards, we created an online survey based on the findings in our video analysis to supplement our findings and ensure scientific validity.

While the main part of our thesis was the academic paper, this report focused on our reflection of the methods that we have used in our 9th and 10th semester projects. We have used a number of user-centered data collection methods and concluded that all of the used methods were useful to a certain degree. However, each method came with both opportunities and limitations which were illustrated in the Table 1.

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5. APPENDIX

5.1 VIDEO ANALYSIS

Video analysis

V1 https://www.youtube.com/watch?v=jmlliGsSzKM "RFID implant test." Dan Hett 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Demonstrate how to open a Youtube video with his RFID implant 2. Positive 3. English (based on the description)
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue (left hand). Not visible.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Uses the RFID to open a Youtube video on his smartphone 15. smartphone 16. Phone on skin contact, seemed to work very fast. (Problem – opens only one kind of app/function?) Seemed quite uncomfortable position (but perhaps due to making a video of it)
Abstract:	A man shows his RFID tag and demonstrates how he uses the RFID to open a Youtube video. First shows his hand, then his phone. Then presses his phone to his left hand and a Youtube video opens immediately on his phone.

V2 https://www.youtube.com/watch?v=AwQtc4inWp8 “Useful NFC/RFID tag applications 4: unlocking a smartphone and vCard sharing” ACKspace 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Demonstrate how to unlock a smartphone and share contacts 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Purlicue (left hand). Not visible.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Presumably daily (every time he unlocks his phone) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Uses the RFID/NFC implant to unlock his smartphone and when his phone is unlocked, the RFID/NFC implant allows him to share his vCard (like a visit card, but on his phone) 15. smartphone 16. Easy to share personal contacts via the implant (Seemed slow (4 seconds to unlock the phone). Looks like needs skin contact.
Abstract:	A man shows his RFID/NFC implant and demonstrates how to unlock his phone with the implant as well as share his contacts with the implant when the phone is unlocked. Takes two tries to unlock the phone. First the phone is a bit further away from his implant, then he presses the phone into his hand. When the phone is unlocked, a pop up shows up and he can go to his contacts and if wishes, share

	it with other people.

V3 https://www.youtube.com/watch?v=-m5uE3bxkeQ "Using My RFID Chip Implant To Unlock/Start Car **KEYLESS!**" Andrew Morales 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Talks and shows how he can unlock/start his car with his RFID chip 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue (left hand). Not visible.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Presumably daily (every time he unlocks his phone) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside next to his vehicle 14. Unlocks his car, then locks his and shows that he has a xEM reader in the small car window of the driver's side. Presses his left hand with the implant to the window and the door unlocks. Sits in the car and shows a switchboard. One switch turns on accessories (fx. Radio), another turns on the ignition. Then he has to put his left arm in an alcove on the left side of the steering wheel and

	then the car starts. Flips off switches and the car shuts offs. 15. xEM (Access Controller) reader, switchboard (with three big switches) 16. Easy and fast to unlock the door. Needs extra hardware and installation (more expensive). Instead of a key, has to turn on a switch and then present his tag to turn on the car. (Needs extra steps to turn on the car). Helpful if forget car keys regularly.
Abstract:	A man talks and shows how he unlocks nad starts his car with his RFID implant. He shows his car, then locks his and shows that he has a xEM reader in the small car window of the driver's side. Presses his left hand with the implant to the window and the door unlocks. Talks about and shows the xEM reader, that has wires leading behind the dashboard. Sits in the car and shows a switchboard. One switch turns on accessories (fx. Radio), another turns on the ignition. Then he has to put his left arm in an alcove on the left side of the steering wheel and then the car starts. Flips off switches and the car shuts offs.

V4 https://www.youtube.com/watch?v=1orxgR9jUOs "Unlocking car door with Arduino + Adafruit RFID Shield and RFID NFC implant" Gaute Thøgersen 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Demonstrate how to unlock and lock his car 2. Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Purlicue (right hand). Not visible.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years)	7. Unknown 8. Male 9. Unknown 10. Presumably daily (every time he uses his car) 11. Unknown

8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside next to his vehicle 14. Uses the RFID/NFC implant to unlock his car via a reader on his car windshield and then locks the car the same way 15. RFID/NFC reader 16. Easy and fast to open the car. No need to remember keys. Unclear if needs skin contact. Needs to buy and install the hardware (extra costs). Security issues? (a new way of stealing cars??) Seems uncomfortable position when pressing the hand to the reader (easier if the hand was palm down).
Abstract:	A man shows how he can lock and unlock his car with his RFID/NFC implant. Has a reader of some kind on the bottom of his windshield and presses his right hand to the reader that unlocks his car. To lock the car, he presses his implant again to the reader and the car locks.

V5 https://www.youtube.com/watch?v=K-kYSSLI73o "My RFID Implant" Grey Dillman 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Talks and demonstrates how to open a door with his RFID tag 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue (right hand). Not visible.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40	7. Unknown 8. Male 9. Unknown

years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	10. Presumably daily (every time he opens his door) 11. Built a RFID system to open his door, but didn't like to carry around the car, so he implanted the RFID tag. 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside at his door 14. Uses the RFID implant to unlock his door via a RFID system that he built. Presses his right hand to the reader besides his door and unlocks the door. 15. RFID reader, door lock 16. Easy and fast to open the door. No need to remember keys or carry around the RFID card. Seems to need skin contact. Needs to buy and install the hardware (extra costs). Security issues? Seems uncomfortable position when pressing the hand to the reader (easier if the hand was palm down).
Abstract:	A man shows how he can unlock his door with his RFID implant. Had built an RFID system to unlock his door but didn't like to carry around a card, so implanted the tad in his hand. Presses the implant to the reader and opens the door.

V6 https://www.youtube.com/watch?v=smBetWJlfP4 "Useful NFC/RFID tad implant applications 15: SmartHome example, control lights" ACKspace 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Talks and demonstrates how he transformed a table with RFID/NFC reader and LED lights that he can turn on and off with his implant. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. (Out) side of the palm (right hand). Not visible.

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Shows a table where he mounted a LED strip underneath and inserted an RFID/NFC reader. When pressing his implant, the lights turn on or off. 15. RFID reader, LED lights, table, USB cable, diagnostic/xLED(?) card 16. Needs hardware and installations (extra costs). The RFID/NFC reader is quite a large rectangular box (space issues). Extra effort for a light show – useful? More aesthetic purposes. Needs to charge the reader? Doesn't seem to be as uncomfortable position when using the tag (different location).
Abstract:	A man has bought an IKEA table that is popular with hackers and glued an LED strip under it. Put in an RFID reader inside the table. When pressing the RFID implant to the reader, the lights switch off. Doing it again will switch off the lights. Uses a diagnostic card or a xLED tag to show that there is an RFID reader in the table (the card lights up when passing over the symbol carved in the table). Shows and talks about how he mounted it.

V7 https://www.youtube.com/ watch?v=ESMJfoX9JnM "Implanted RFID chip test" wesley eeckhoudt 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Tests to see if his implant will work the same as a regular RFID tag (by using an RFID/NFC reader that will print out a message on a computer if it works. 2. Positive 3. Unknown
Device usage in video: 4. Type of implantable	4. RFID/NFC 5. One

device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	6. Purlicue (left hand). Visible scar (recently implanted)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Tests if the implant works the same as a regular RFID tag. Has a reader connected to a computer and when activated, displays a message on the computer. Tries multiple times both with the implant and the regular tags 15. Arduino and Mifare MFRC522 reader, computer, RFID tags 16. Unknown application. Seems to work fast, doesn't need to be skin contact (1-3 cm distance)
Abstract:	A man tests if the implant works the same as a regular RFID tag. Has a reader connected to a computer and when activated, displays a message on the computer. Tries multiple times both with the implant and the regular tags

V8 https://www.youtube.com/watch?v=qmijuH4fgLU "NFC RFID Implant - unlocking Galaxy S6 Edge" Laurens Kreuze 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Demonstrates how to unlock a phone with his RFID/NFC tag 2. Neutral/positive? 3. Unknown

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Purlicue (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Presumably daily (every time he uses his phone) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Shows how he unlocks his phone with his implant. Lock the phone and then presses it to his left hand and the phone unlocks. 15. Smartphone 16. Fast and easy way to unlock the phone. Around 1 second delay before unlocking. Seems to need skin contact.
Abstract:	A man shows how he unlocks his phone with his implant. Lock the phone and then presses it to his left hand and the phone unlocks.

V9 https://www.youtube.com/watch?v=0hbHuK7TrLw "Logging into computer with RFID implant chip" Amal Graafstra 2009

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Demonstrates how to log on to a computer with an RFID tag 2. Neutral/positive? 3. Unknown

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Unclear. Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Presumably daily (every time he logs on to his computer) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Shows how he log on to his computer using an RFID chip. He passes his left hand slowly over the left side of the keyboard and the computer is logged on. 15. Computer, RFID reader? 16. Fast and easy way to log on to a computer instead of typing out user name and/or password. Additional hardware? Doesn't seem to be skin contact?
Abstract:	A man shows how to log on to computer with his RFID tag. He passes his left hand over the keyboard where presumably the RFID reader is. Unclear where his implant is located in the hand. Shown in two different angles.

V10 https://www.youtube.com/watch?v=sHxgCNhzi80 "2 months on, what's it like having an RFID chip implanted in my hand - Triumph Bonneville wireless" Luke's Garage 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive	1. A man talking about how it is to have an RFID chip in his hand 2. Positive 3. English

3. Language	
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue (right hand). Not visible unless he makes a fist
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Presumably daily (every time he uses his bike) 11. "Don't know, kinda felt like it." 12. At the end of the day it's not really that bad. Isn't concerned about infection, not an issue as it's a surgically clean glass tube. Fun way to start his motorcycle and would do it again. Plans to do other projects (fx. Garage doors etc.). No real regrets, something a little bit different and quite interesting.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To start his motorcycle 15. RFID reader 16. Can feel it moving when pressing on it. Doesn't really move. Was tender for couple of days after insertion, but now doesn't hurt. Unless push too hard and the chip pokes at the skin. No issues with body scanners, shop alarms etc. (Too small?) (2-5 cm range, through gloves). Won't be needing keys anymore.
Abstract:	A man answers some most common questions about having an RFID chip in his hand. Has it to start his bike and likes it. Feels like it's something fun and interesting. Doesn't move or hurt and would do it again. Plans to explore other opportunities and maybe do something with his garage door.

V11 https://www.youtube.com/watch?v=pnamGHfgJQk "Key-Free Life - RFID & NFC Applications for Home Security and Motorcycle Ignition" Russ Foxx 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates a couple of application for having an RFID/NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Purlicue (right hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Presumably daily (every time he uses his bike or door) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside his house (door) 14. Shows applications for having an RFID/NFC tag. Has a Siemens reader on his door. First, he touches the reader to wake it up and then slowly passes his right hand over the reader and the door opens. A lady repeats the same actions. Then he shows how he starts his bike with his implant. Has a reader instead of ignition and needs to introduce his implant to the reader to start the bike. To turn it off, needs to repeat the action. 15. RFID reader, Siemens smart door lock 16. Easy and fast way to open doors and start bike. No need for keys. Seems to be skin contact. Need to modify the bike (extra hardware and effort/costs). Security/hacking?

Abstract:	Shows applications for having an RFID/NFC tag. Has a Siemens reader on his door. First he touches the reader to wake it up and then slowly passes his right hand over the reader and the door opens. A lady repeats the same actions. Then he shows how he starts his bike with his implant. Has replaced the bike ignition with an RFID reader. To turn on the dashboard, he touches the implant to the reader and when he is done, he introduces the implant again to the reader and the bike turns off.

V12 https://www.youtube.com/watch?v=5IfpQqJGebQ "NFC implant tag chip for door lock home security" Russ Foxx 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates how to unlock a door with his NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (right hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Presumably daily (every time he unlocks door) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for	13. Outside his house (door) 14. Has a Siemens smart door lock that is NFC equipped on his door. First, he touches the reader to wake it up and then presses his right hand over the

15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	reader and the door opens. 15. Siemens smart door lock 16. Easy and fast way to open doors. No need for keys. Seems to be skin contact. Need to buy and install the smart door lock. Security?
Abstract:	Has a Siemens smart door lock on his door. First, he touches the reader to wake it up and then slowly presses his right hand over the reader and the door opens.

V13 https://www.youtube.com/watch?v=y2YHbNE_4M8 "RFID shed door lock using implanted RFID tag." rodjownsu 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates how to unlock a shed door with his RFID implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue (right hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Every time he unlocks the shed door 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for	13. Outside his shed door 14. Presses his right hand on a patch next to the shed door and it opens. Demonstrates multiple times how the locking mechanism works with his RFID

15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	implant. 15. RFID reader 16. Easy and fast way to open doors. No need for keys. Seems to be skin contact. Need to buy and install the reader. Security? No more than 1-2 seconds to work.
Abstract:	Man shows how he opens his shed door with his RFID implant. He goes up to the right side of the shed door where the reader is and presses his right hand over the reader and the door opens. Then shows multiple times the locking mechanism and how it responds to the implant.

V14 https://www.youtube.com/watch?v=_kO5_6-EMJc "Healed Magnetic Vision Implant by Russ Foxx" Russ Foxx 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man picks up a coin with his magnet implant 2. Neutral/Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Uncertain. Side of the palm (left hand?)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction:	13. Home

13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	14. Has a coin standing up. Slowly lowers his hand and the coin sticks to the hand. He lifts his hand with the coin up out of the frame. 15. A coin 16. Can pick up a coin. Unclear applications
Abstract:	Man shows how he picks up a coin with his magnet implanted in his hand.

V15 https://www.youtube.com/watch?v=-QTuKhMBxWU "Magnetic finger implants" Bmezine 2007

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man shows off his magnetic finger implants 2. Neutral/Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnets 5. Unknown 6. Tip of the finger
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for	13. Home 14. Plays around with two small metal balls. 15. 2 metal balls 16. Can play with metal balls around 1-2 cm range.

15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	Unclear applications
Abstract:	Man plays around with two small metal balls with his magnetic finger implants.

V16 https://www.youtube.com/watch?v=KR-WQzsg32Y "Magnetic implant." Felipe Ochoa 2011

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A demonstrates his magnetic finger implant 2. Neutral/Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Tip of the ring finger (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects	13. Home 14. A man places a paperclip on a table and slowly moves his finger over the paperclip. It sticks to the finger and he carefully raises his hand with the paperclip attached. He repeats the action. Repeats the action with a magnet. Has trouble making it stick to the finger. Then repeats the action with a

16. Opportunities and problems	piece of long rectangular metal (makes it spin around from around 3-4 cm distance). 15. Paperclip, magnet, metallic object 16. Can play with magnets, paperclips and metallic objects. Success based on the weight of the magnet. Unclear applications
Abstract:	Man demonstrates his magnetic implant by playing around with multiple metallic objects.

V17 https://www.youtube.com/watch?v=oQ-C2y0rOGQ "Magnetic Implant by Samppa von Cyborg" Paul Strohmeier 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man shows off his magnetic implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Side of the left arm palm
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for	13. Bar? 14. Plays around with a piece of metallic object. 15. Small metallic object 16. Can play with light metal object from around 3-5

15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	cm height. Unclear applications
Abstract:	Man plays shows off magnetic implant in his palm.

V18 https://www.youtube.com/watch?v=o6SfxuGFOks "magnet implant" greg bodypiercer 2009

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man shows off his magnetic implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Ring finger of right arm
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Plays around with a paperclip 15. A paperclip 16. Can pick up a paperclip. Does not seem like a strong magnet, had trouble with the paperclip. Unclear applications

Abstract:	Man plays shows off his magnetic implant in his finger by playing with a paperclip.

V19 https://www.youtube.com/watch?v=qGEo0Let7fw "Magnetic implant demonstration: holding stuff" White North 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates his finger magnet 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Ring finger of left arm
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Demonstrates what kinds of objects his finger magnet can pick up. Uses a bigger magnet to disrupt the magnetic field of the finger magnet to prove that it's real. Can hold 3 screws at once. 15. A needle, razor blade, screws, a magnet 16. Has magnetic field in his finger to pick up a needle, razor blade, screws. Unclear applications

Abstract:	Man demonstrates his finger magnet's magnetic field by picking up a needle, screws and a razor blade. Disrupts his magnets magnetic field by placing a larger magnet on top of his finger and showing the magnetic objects falling off his finger.

V20 https://www.youtube.com/watch?v=cgzQAeWiR7k "Bruce Thomson's magnet implant picking up things" Bruce Thomson 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates his finger magnet 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Ring finger of left arm. Recently inserted (visible scaring)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Senior 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Thinks that it will take some time for the nerves in the finger to become sensitized and be able to sense electromagnetic field of electronics etc
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Demonstrates what kinds of objects his finger magnet can pick up 2,5 days after insertion. Can't pick up a big screw. Thinks that after some time will be able to feel electromagnetic field and feel fx. Microwave vibrating. 15. A nail, staple, paper staples, hairclip, screw 16. Can pick up nail, staple, hairclip, screws. Unclear

	applications
Abstract:	Man demonstrates what his finger magnet can do. It can pick up various metallic objects, but is too weak to pick up a larger screw.

V21 https://www.youtube.com/watch?v=piC0dn7njEQ "Magnetic Implant" Ryan Paolucci 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man talks about his finger magnet and why he chose to do it, the procedure and what it can do 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Tip of the finger. Recently inserted (visible scaring)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. For Sensory augmentation (sense magnetic fields). 12. Recommends doing it professionally and use a special magnet. Got light headed during the procedure and passed out. Cool that he can pick up metallic objects.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Unknown 15. Unknown 16. Can pick up metallic objects and sense magnetic fields. Unclear applications besides sensory augmentation

Abstract:	Man talks about getting a finger magnet. Recommends to do it professionally and did it because he wanted to do sensory augmentation and feel electromagnetic fields. Talks about the procedure and that he passed out during it.

V22 https://www.youtube.com/watch?v=PORJueK_ndo "magnet implant" Sweettothesweet 2012

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man talks about his finger magnet experience, procedure 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Tip of the ring finger (left hand). Visible scarring (recently inserted)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Cool and awesome to have it. He is glad to have it. The procedure was unpleasant, but afterwards didn't feel much (doesn't notice a bump on his finger). Weird sensation of picking up the first thing. Next to microwave or iPad the vibration is amazing. No regrets so far. Doesn't hurt (besides sticking it next to a very big magnet). Plans to get more implants (magnet – baby steps). Wanted a bigger one, but that needs to go in other places and he wanted to get in in his finger.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Picking up metallic objects and feeling magnetic fields. He installed a kill switch in his car and when he touches it with his magnet, the cars starts. 15. paperclip 16. Can pick up metallic objects and sense magnetic fields. Unclear applications besides sensory augmentation

Abstract:	Man talks about getting a finger magnet, how it feels, what he uses it for and how was the procedure.

V23 https://www.youtube.com/watch?v=kj_HuDAnZWo "Magnetic Implant - 2nd gen gold plated neodymium magnet - Kalima" Sean Dale 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man plays with his finger magnet and small metallic balls. Explains what it can do. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Tip of the ring finger (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. "Like having a sixth sense". A cool party trick that can win him drinks. Fun.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Vibrates near metal. Sets off retail shop security, makes awesome noises on guitar, can wipe magnetic strips on tickets and cards, can turn off some technology like laptops. Plays with small metallic balls. 15. Small metallic balls. 16. Can pick up metallic objects and sense magnetic fields. Unclear applications besides sensory augmentation

Abstract:	Man plays around with his finger magnet and presents what he can do now with the magnet.

V24 https://www.youtube.com/watch?v=dF0iO7wJ8ZI "cyborg finger" Peter Marquardt 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man talks about having a finger magnet and demonstrating what he can do with the magnet. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Tip of the ring finger (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Because it gives sixth sense and can feel electromagnetic fields. 12. Has had for a year and doesn't feel vibrations anymore, his brain thinks "ok, that's a magnetic field". Uses it to feel things that he couldn't usually feel.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Can pick up a large nail. Also feel electromagnetic fields. He has programmed a microprocessor to beep and could in the future use it for signaling. It is connected to the coil and when he picks up the coil with his finger magnet and puts it next to his ear, he can hear the beeps. 15. Nail, coil 16. Can pick up metallic objects and sense magnetic fields. Application in signaling (where magnetic north is, if temperature or moisture has risen, how bright it is in a spectrum we can't see etc).

Abstract:	Man talks about his finger magnet and demonstrates how he uses him. He is also experimenting with what he could further do with the implant. He has programmed a microprocessor to beep and could in the future use it for signaling. It is connected to the coil and when he picks up the coil with his finger magnet and puts it next to his ear, he can hear the beeps.

V25 https://www.youtube.com/watch?v=mcMRlsAaGAs "I Made This Magnetic Drawing Machine" Charbytes 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A woman presents a magnetic drawing machine that she made for her studies. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. Multiple (# unknown) 6. Tips of her fingers
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal	13. Home 14. The drawing machine has a reader and when she moves her magnets over it, the movements are drawn on the computer 15. Magnetometer, LED, button, circuits, computer 16. A new and different way of drawing. Could be very

objects 16. Opportunities and problems	expensive to build/buy/use. Extra effort to learn to use it. Not as much as control as regular drawing methods.
Abstract:	A woman who has magnets in her fingers has created a magnetic drawing machine. The drawing machine has a reader and when she moves her magnets over it, the movements are drawn on the computer. She goes through her creative process.

V26 https://www.youtube.com/watch?v=LXBAG_jb3cc "finger magnet trick" James Gritz 2011

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrated how his finger magnet works by playing with a small metallic object 2. Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Tips of middle finger (right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal	13. Home 14. The man plays around with a small metallic object by moving his finger around and over the object. With 2-3 cm range the object moves around, if closer then it sticks to the finger 15. A small metallic object (a magnet?)

objects 16. Opportunities and problems	16. Unknown
Abstract:	A man demonstrates how his finger magnet works by playing around with a small metallic object.

V27 https://www.youtube.com/watch?v=s0yAY_tJOGo "finger magnet in action" James Gritz 2010

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates how his finger magnet works by playing with a small metallic object 2. Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Tips of middle finger (right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. The man plays around with a small metallic object by moving his finger around and over the object. With 2-3 cm range the object moves around, if closer then it sticks to the finger 15. A small metallic object (a tube?) 16. Unknown

Abstract:	A man demonstrates how his finger magnet works by playing around with a small metallic object.

V28 https://www.youtube.com/watch?v=oCd1-SM8AZE "Unlock OSX with nfc implant" Patric Lanhed 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates how to unlock his computer from sleep mode with his NFC implant 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (right hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Presumably daily (every time he opens his laptop) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man explains and shows how he wrote a code to unlock his laptop with his NFC implant. He has the reader connected to the laptop and presses his implant to the reader and the laptop is unlocked. 15. Laptop, NFC reader, NODEJS 16. Easy and fast way of unlocking a laptop. No need to write down username and/or password. Security? Skin contact seems necessary.

Abstract:	A man demonstrates how he can unlock his laptop from sleep mode with his NFC implant.

V29 https://www.youtube.com/watch?v=y83gZEDQ90s "Arduino reading nfc implant" Benjamin Engel 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates how his NFC implant is the key for the NFC reader 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). Not visible (has a tattoo over the implant)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Has a NFC reader connected to his laptop and demonstrates how his NFC implant interacts with the reader and scans every 2 seconds. When trying out with a regular NFC card, it doesn't work, as his implant is the key. 15. Laptop, NFC reader 16. Awkward to hold his hand in that position (should be to the side, not in front and vertical). Still picks up the implants from an inch (2,5 cm?) away.

Abstract:	A man demonstrates how his NFC implant interacts with the NFC reader.

V30 https://www.youtube.com/watch?v=nz6hjHs_NQs "NFC implant testing" baschalmighty 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man tests his NFC implant 2. Neutral/Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Man opens his phone and then opens the NFC app. He changes his grip on the phone to hold it from the top and places it on top of his left hand where his NFC implant is. Some kind of app opens and then he repeats the action several times. 15. Smartphone 16. Awkward to hold the phone over the implant?
Abstract:	A man opens some kind of app on his phone by using his NFC implant.

V31 https://www.youtube.com/watch?v=44k0XRkuy0I "NFC implant Biohacking" Jowan Österlund 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man uses his NFC implant to open a contact on his phone 2. Neutral/Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Forearm (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Man presses his phone to his left forearm and a contact pops up on the phone. He then dials the contact and someone answers. 15. Smartphone 16. Better position for smartphone use? Still only one function. But a convenient and easy way to do one thing on the phone. Seemed to need skin contact and took around 2 seconds to work.
Abstract:	A man opens a contact on his phone by using his NFC implant.

V32 https://www.youtube.com/watch?v=v3f2mpKfqME "Unlocking door of Familab with NFC implant" Lance Vick 2012

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man uses his NFC implant to unlock a door 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. Unknown 10. Presumably daily (Every time he unlocks the door) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Work 14. Man installed a new entry system. A reader of some kind is installed next to the door and the man presses his left hand to the reader and the door unlocks. 15. A reader 16. Fast and easy way to unlock a door. No need for keys. Security? Seemed to need skin contact
Abstract:	A man opens a door by using his NFC implant.

V33 https://www.youtube.com/watch?v=7wlX5vgocCc ”Mathew Bloomer Brack - NFC implants” March of the Droids 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man give presentation about NFC implants 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. UK 10. Presumably daily (Every time he unlocks doors or uses phone) 11. First, implantable tech felt messy and expensive. However, it got tedious to scan his student card through 3 different doors and unlocking his room with a key. Therefore, started to look into optimizing this process. Would also forget his wallet in his room a lot. Going to the shop was a chore. On a farm saw cows with chips and how they worked and thought why couldn’t that work for people. After hearing about NFC implants, he fell in love. 12. Convenient, a constant part of his life
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Work/Uni? 14. After a few hours after insertion, his phone found his NFC implant tag and he started playing around with it. First, to unlock his phone. Then went to Uni to get access to Uni with his implant. Shares his contacts or wifi. Has a NFC reader to unlock his laptop. Unlock keys. Demonstrates a locking system. Did take some time to work. 15. Unknown (readers, laptops, phone etc.) 16. Fast and easy way to unlock a door. No need for keys. Security? With Android can automate most of the functions (send texts, turn on and off GPS etc.) Problems – have to tolerate the “mark of the beast” comments. Concerns – being located (doesn’t

	happen, the implant is passive). Has to reprogram it multiple times (every time he needs something different). In theory could have unlimited # of tasks if people really wanted to. Easy to remove them but have long life spans. Airports don't pick it up. The more people use the more options/opportunities there will be. (Opportunity – to mess with people who don't know about the tech (pretending to have the Force etc :D)
Abstract:	A man gives a presentation and talks about his experience with NFC implant.

V34 https://www.youtube.com/watch?v=tQrU1rX-pno "Nfc implant. Vending machine at Familab" jdbugman 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man uses his NFC implant to use a vending machine 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (right hand). Recently inserted, visible scarring
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction:	13. Work

13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	14. A man uses a vending machine with his NFC implant. He presses his hand to the reader and after authorization, choses what he wants from the vending machine. 15. A reader 16. Fast and easy way to use a vending machine. No need for a car or cash.
Abstract:	A man uses vending machine using his NFC implant.

V35 https://www.youtube.com/watch?v=JdNCQ1wPGcc "NFC implant - Unlocking phone" nothreat33 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man uses his NFC implant to unlock his phone 2. Neutral/Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. Unknown 10. Presumably daily (Every time he uses his phone) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage	13. Home 14. A man unlocks his phone by using his NFC implant. He touches the phone and when the

14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	screensaver appears, he puts his phone on top of his left hand. After 3-4 seconds the phone unlocks and seems to open up the contacts before going back to the home screen. He does it again. 15. A smartphone 16. Easy way to unlock the phone. No need to enter pin etc. (But what's different from fingerprint?). Took a lot of time (3-4 seconds for it to work).
Abstract:	A man unlocks his phone by using his NFC implant.

V36 https://www.youtube.com/watch?v=M2DKQwbU83U "Hello World - My NFC Implant" Steffan Donal 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man opens an app on his phone by using his NFC implant 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (right hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Did injection himself and it did not work ("royally screwed myself")
Type of interaction: 13. Context: e.g., home, vehicle, office, garage	13. Home 14. A man presses his phone to his right hand after some time a Hello World text file appears on the

14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	screen. 15. A smartphone 16. Took a lot of time (6 seconds for it to work). Takes a bit of fiddling. Seems to need to be very close.
Abstract:	A man demonstrates his NFC implant.

V37 https://www.youtube.com/watch?v=YfoGMKj5QwA "NFC Light Implant Demonstration - 7 Days Later" aviin 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates his NFC light implant 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC light implant 5. One 6. forearm (right hand). Visible scarring (recent insertion)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Still healing after 7 days
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g.,	13. Home 14. A man presses his phone to his right hand and the implant starts to blink with a red light. 15. A smartphone 16. Besides aesthetics, hard to see application. Seems to

smartphones, locks, metal objects 16. Opportunities and problems	need to be very close.
Abstract:	A man demonstrates his NFC light implant. When a phone touches his arm with the implant, it starts blinking with a red light.

V38 https://www.youtube.com/watch?v=8K9xQLDUJzc "Day 2 of CYBORG HAND" zoe quinn 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A woman demonstrates how she unlocks her phone with her NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Female 9. Unknown 10. Presumably daily (Every time she uses her phone) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects	13. Home 14. A woman updates her viewers about her NFC implant. She has downloaded some apps and shows what she has been doing with her NFC chip. She places her phone on her left hand and her phone unlocks. Then she repeats the action and a Humble Bundle key for DSX app opens. She says that if

16. Opportunities and problems	someone finds her in public they can get a free game from her. 15. A smartphone 16. Easy way to unlock a phone. Seems uncomfortable position (maybe due to her filming the interaction). Seems to need to be very close.
Abstract:	A young woman shows what she has been doing with her NFC implant. She demonstrates how to unlock her phone with the implant and launch an app.

V39 https://www.youtube.com/watch?v=zBzhOPwfbm4 "Start my car, open the office doors and get into the house with RFID/NFC Human Implant!" Steven Northam 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man demonstrates several applications for his RFID/NFC implant 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. Two 6. Purlicue (right and left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Daily (Every time he unlocks doors or drives a car) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage	13. In a car/ door at his home 14. A man demonstrates how he uses his RFID/NFC implant. First, he is sitting in a car and has installed

14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	a reader in the center of his steering wheel. He presses his right hand to the steering wheel and the car starts. Next, he is outside his door and puts his left hand to a reader on the left side of the door. The door unlocks. He does it again. Then he is in front of another door with a different reader on the right side of the door. He presses his left hand to the reader and the door opens. 15. RFID/NFC readers 16. Easy way to start a car or open doors. No need to carry around keys. Seemed natural opening door with the reader and the implant on the left side. More unnatural when the reader in on the right side and the implant in left hand. Unlocking a door doesn't seem to need skin contact. Starting a car seemed to have very close contact.
Abstract:	A man demonstrates how he uses his RFID/NFC implant to start a car or open doors.

V40 https://www.youtube.com/watch?v=h0B46L6mZu4 "Biohacking - RFID/NFC chip in my hand" Stefan Nordlander 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man shows proof of concept for his RFID reader and RFID/NFC implant. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Purlicue (left hand). Recently inserted, still visible insertion wound.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use	7. Young Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. "Kinda cool, we will see what the future brings"

11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has bought an RFID reader and some out of the shelf RFID tags to show off his RFID/NFC implant. He uses the regular tags, the light on the reader is red and when he presses his left hand to the reader, the light turns green. 15. RFID reader, RFID tag and a card 16. Needs to be close contact. Seemed to need some fiddling to make the reader register his implant. Uncomfortable position because his implant is in his left purlicue and the reader was on his left side as well.
Abstract:	A man shows proof of concept with his RIFD/NFC implant.

V41 https://www.youtube.com/watch?v=I7OoxBYyVyY "NFC chip implant" Anna Sidorova 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A woman shows how to unlock her phone with her NFC chip 2. Positive 3. Russian
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (right hand). Bandage visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use	7. Young Adult 8. Female 9. Unknown 10. Presumably daily (Every time she wants to unlock her phone) 11. Unknown 12. Unknown

11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A woman presses her right hand to the back of her phone and the phone unlocks. She does it again. Then she opens an app and it seems that when she presses her hand to the phone again, it detects the NFC implant and a message pops up that the implant was detected. 15. A smartphone 16. Easy way to unlock the phone. No need to enter pin etc. (But what's different from fingerprint?). Took around 1-2 seconds.
Abstract:	A woman unlocks her phone by using her NFC implant.

V42 https://www.youtube.com/watch?v=jiv-5j67UZ4 "NFC door Entry using implant" Dirty Optics 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A man shows how would a door entry system using an NFC implant work 2. Neutral/Positive 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). Not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use	7. Young Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown

11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has some kind of door entry system. When he presses some kind of device to his implant, the light turns red and some kind of locking mechanism clicks. He presses the locking mechanism a few times and shows how it works by pressing a button. Then he demonstrates that it works the same with a card. 15. The door entry system, some kind of access card 16. Easy way to unlock a door. No need for keys etc. Took around 1-2 seconds.
Abstract:	A man shows how a door entry system would work with an NFC implant.

V43 https://www.youtube.com/watch?v=FAbKVjIH63g "That awesome time I became a cyborg - Emma Lilliestam" FooCafe 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A woman does a presentation about her NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Purlicue (left hand). She can see it, because she knows it's there, but other people might think it's a blood vessel etc.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world)	7. Unknown 8. Female 9. Sweden 10. Unknown 11. First thought that people who got implants had no self-preservation and were idiots. After 30 min decided that she has to get one. Used to be tech skeptic, but tracking devices are already here by

10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	design (fitness trackers, phones). She wants to be a personal stakeholder in a revolution that can benefit the whole word. 12. It's just another piercing.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Foo Café (public) 14. Can unlock her phone 15. Smartphone 16. Chip developers (xNT implant) are talking about security (cooperation with Kaspersky Lab). Doesn't beep in airports. MRI works, just there is a small blurriness in the results. Has moved about an inch (can move it front and back – says it's disgusting). Use for public and non-sensitive data (something that you are willing to have public). Has a bad reader on her phone so hard to unlock it. Prerequisites – societal acceptance for body modification, infrastructure (net ID, biometric passports etc.) & safe and secure hardware and software (not there yet) + ethics?
Abstract:	A woman gives a presentation about cyborgs and her having a NFC implant.

V44

https://www.youtube.com/watch?annotation_id=annotation_3991092305&feature=iv&src_vid=8K9xQLDUJzc&v=aa3s9fMOic8 " I jammed a frickin huge needle in my hand in order to shoot a microchip into it." zoe quinn 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. A woman talks about herRFID/ NFC implant 24 hours after implanting it herself 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Purlicue (left hand). Recently implanted, wound visible
User Characteristics:	7. Young Adult

7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	8. Female 9. Unknown 10. Unknown 11. Unknown 12. Everything seems fine (a little tender and swollen). Concern – she can feel it through the skin (had read that usually people can't). Not too worried. She really likes it and that it is in the same hand as her finger magnet (Not an issue that they are close). Looks forward to developing apps that work with the implant. Really happy with it.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Wants to program it to unlock the phone, but in the video demonstrates how to open an app. It's an awkward angle to put it to the phone for the video. First time nothing happens and the phone goes to sleep. Second time, she is moving her hand as she is still getting used to where the chip is and for some time nothing happens as she fiddles with it. Didn't know where her NFC reader in her phone was. 15. A smartphone 16. Easy way to open an app. Seemed to take a lot of time for the phone to find her implant. She had to move the hand all over the back of the phone for it to work. Also had to be close.
Abstract:	A woman talks about her RFID/NFC implant and demonstrates how she can open Twitter when pressing her hand to the phone.

V45 https://www.youtube.com/watch?v=AoCUAfNy134 "RFID implant door unlock prototype" Erplane 2009

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Demonstrate how to unlock a car 2. Neutral/Positive 3. English

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. ? 10. Presumably daily (every time he unlocks his car) 11. Not mentioned 12. Not mentioned
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside with his Vehicle 14. A man has an implanted RFID chip in his right hand, which he uses to unlock his car instead of a key. He has placed an RFID reader on the inside of his car, next to the driver's door handle. 15. RFID reader placed inside the car, in the back left door, next to the window and close to the driver's door handle, the car 16. The user is able to unlock his car only by placing his hand next to the door, fast and easy, secure
Abstract	A man has an implanted RFID chip in his right hand, which he uses to unlock his car instead of a key. He has placed an RFID reader on the inside of his car, next to the driver's door handle.

V46 https://www.youtube.com/watch?v=dLZbN7MrEDM ”RFID Implant Demo” Lukel99 2011

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Demonstrate how to deactivate a magnet using an implanted RFID chip 2. Neutral – happy, positive facial expressions 3. English
Device usage in video: 7. Type of implantable device(s): e.g., RFID, magnet, NFC 8. Number of devices 9. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 4. One 5. Purlicue (left hand) – the chip is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young Adult 8. Male 9. ? 10. Not mentioned 11. Not mentioned 12. Not mentioned
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home or office 14. A man has an implanted RFID chip in his left hand, which he uses to deactivate magnets and to manage to pull away one large magnet from another. He is using an RFID reader which is connected to the magnets to complete this task. 15. RFID reader, 2 magnets 16. Unclear

Abstract	A man has an implanted RFID chip in his left hand, which he uses to deactivate magnets and to manage to pull away one large magnet from another. He is using an RFID reader which is connected to the magnets to complete this task.

V47 https://www.youtube.com/watch?v=hu8dBdWF4ss "Mike Seeler | Biohacker: BK Stories" BRIC TV 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about his choice of using implanted magnets and RFID chips and his experience of it. 2. Excited, he feels cool having this technology 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID chip and magnets 5. 11 (one in each fingertip + RFID chip) 6. Fingertips – not visible, left hand
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. NYC 10. Daily (for magnets) – RFID (unknown) 11. Extend human capabilities, experience more, feel more about the technology he is used, to be different and more advanced than others 12. No regrets/concerns, enjoys the advantages ("feeling magnetic fields, subway etc), feels natural, enriches his life and experiences more joy and fun with his implants, it's "cool", empowering

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside 14. Feeling magnetic fields, influencing the magnetic fields of a compass, small metal ball sticks to his finger - RFID : to send a message to a friend automatically 15. Smartphone, compass, metal ball 16. Handy, saved his life a few times, practical applications of RFID: unlocking doors, starting engines
Abstract	A man that has an implanted RFID chip and magnets implanted talks about his opinion and experience with them and generally about transhumanism and biohacking.

V48 https://www.youtube.com/watch?v=o4caxH5_Pe4 **–** "RFID Enhanced Motorcycle Ignition" Amal Graafstra 2009

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of RFID chip for starting a motorcycle 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID chip 5. One 6. Left hand (purlicue)

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. USA 10. When he is using his motorcycle 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Vehicle, outside 14. A man is standing next to a motorcycle. He shows that the key is in a lock position. He turns the handle to start the engine, but it does not start. Then he places left hand on a RFID reader that unlocks the motorcycle and his able to start the engine this time. 15. RFID reader, motorcycle 16. Self-installed, Security, no one can start the engine without the chip
Abstract	A man that has an implanted RFID chip demonstrates how he uses it to start his motorcycle.

V49 https://www.youtube.com/watch?v=Zpm4b1E3mVE "The strong Magnet in my Finger - Part 1" Peter Marquardt 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of implanted magnet 2. Neutral/Positive 3. English

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Ring finger - fingertip
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. ? 10. Unknown 11. Wanted to feel electromagnetic fields, he chose this magnet because it's stronger than other types. 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. lifting coins and small screwdrivers, strong neodynamic magnets, ipad stylus, paperclips 15. coins and small screwdrivers, strong neodynamic magnets, ipad stylus, paperclips 16. lifts heavy things, it hurts
Abstract	A man that has an implanted magnet in his ring finger demonstrates how he uses it to lift various objects and compares it to previous, weaker magnet.

V50 https://www.youtube.com/watch?v=OPNHkRXQjTQ **"**Magnetic Implants - Playing with magnets" Jawish Hameed 2009

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of implanted magnet 2. Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. magnet 5. 2 magnets 6. Ring and middle finger
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. ? 10. Unknown 11. University research project to explore the effects and some interesting practical applications for it. 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Playing around with a small magnet 15. Small magnet 16. Lift metal/magnetic things

	A man has magnets in his middle and ring fingertips of his left hand. He hovers with his ring finger over a magnet like one implanted in his fingertips. The magnet starts to move around and finally sticks to his finger. He removes the magnet by moving it to a finger that does not have a magnet implanted. Continues to do the same actions for a few times. A man has magnets in his middle and ring fingertips of his left hand. He hovers with his ring finger over a magnet like one implanted in his fingertips. The magnet starts to move around and finally sticks to his finger. He removes the magnet by moving it to a finger that does not have a magnet implanted. Continues to do the same actions for a few times more.

V51 https://www.youtube.com/watch?v=cOGmCXESKJw – "Magnet Implants and the Ipad 2" lifewithmods 2011

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of implanted magnet 2. Negative 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. magnet 5. one 6. middle finger

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. ? 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Playing around with a small magnet 15. None 16. Concerned that every time he touches the screen it locks out
Abstract	He touches an iPad 2 (not the screen) and the screen locks out. That happens because the iPad 2 is in a cover that has a magnet. iPad detects a magnet from the man's finger and locks out just as it would if it was closed by the cover.

V52 https://www.youtube.com/watch?v=toVQT1zXMuA "NFC ntag216 implant" Runcis R 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of NFC chip, unlocking a door and his smartphone 2. Neutral/Positive 3. Unknown

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. One 6. Right hand, purlicue
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. Unlock a door and his smartphone, where a picture appears when it gets unlocked. He places his right hand on a NFC reader which is located on the door. Then the man moves his hand a bit down the reader and unlocks the doors. He also presses down a smartphone on his right hand and a window with data pops up on the screen. 15. NFC reader 16. There has to be almost direct contact of the skin with the reader, 2-3 seconds to unlock the smartphone
Abstract	A man shows that a door is locked. He then places his right hand on a NFC reader which is located on the door. Then the man moves his hand a bit down the reader and unlocks the doors. He also presses down a smartphone on his right hand and a window with data pops up on the screen.

V53 https://www.youtube.com/watch?v=uviKpzDtOh8 “RFID Implant Example” James Bearden 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to show contact information on his smartphone. 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Right hand, purlicue
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To show contact information. Further actions he wants to take: upload information, have it do functions on his phone. He is planning to incorporate it to future projects. 15. Smartphone 16. There has to be almost direct contact of the skin with the reader, 2 seconds to unlock the smartphone

Abstract	A man demonstrated how he shows contact information on his smartphone by scanning his RFID chip implant. He touches the smartphone with his hand (purlicue) and after 2 seconds the smartphone is activated and the screen shows two options, to save the information on the device locally or on amazon.

V54 https://www.youtube.com/watch?v=mpwHLdCsMEQ "RFID started and locked car." Sebastian Kai Frost 2007

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to unlock and start the car engine. 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Right hand, purlicue
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Middle aged 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Vehicle 14. To unlock a car and start the engine. 15. RFID reader 16. There has to be almost direct contact of the skin with the reader, 2 seconds to unlock the smartphone
Abstract	A man demonstrated how to unlock a car and start the engine using RFID technology. First he is using a card and by scanning it he unlocks the car, turns on the engine and gets inside. He then stops the engine and gets out of the car and in 30 seconds the car is automatically locked. Then, he repeats the process using his left hand/ He places the palm of the hand on the left back window, where the reader is. He is then talking about the future possibility of replacing car keys with RFID cards.

V55 https://www.youtube.com/watch?v=3V5nSc-6K5o "RFID implant in action" Kristoffer Sjöberg 2010

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to authenticate to the security system at the office and open a door. 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Left hand, purlicue - inside

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 -60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Office 14. To authenticate to the security system at the office and open a door. 15. RFID reader next to the door (security system) 16. There has to be direct contact of the skin with the reader, 1 second to open the door
Abstract	A man demonstrates how he uses the RFID chip to authenticate to the security system at the office and open a door. He puts his palm on the reader next to the door and after 1 second the door opens.

V56 https://www.youtube.com/watch?v=L9KZcdxgYxA “RFID implants” jacob aikey 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to open a door. 2. Neutral/Positive 3. English

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Right hand, top of the hand, (index finger bone)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To open a door. 15. RFID reader next to the door 16. There has to be almost direct contact of the skin with the reader, 1 second to open the door. He succeeded on the second try, after he moved his hand and re-adjusted it.
Abstract	A man demonstrates how he uses the RFID chip to open a door. He puts his hand on the reader next to the door but a red light goes on. He then re-adjusts his hand and puts it closer to the side of the reader, the skin is touching the reader and after 1 second the door opens.

V57 https://www.youtube.com/watch?v=8co-qnujS0w "Useful NFC/RFID tag implant applications 3: open road barriers" ACKspace 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to open a road barrier. 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Left hand, outside of palm, flexor/abductor muscle
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside 14. To open a road barrier. 15. RFID reader next to the road barrier 16. There has to be almost direct contact of the skin with the reader, 1 second to open the door.
Abstract	A man demonstrates how he uses the RFID chip to open a road barrier. He puts his hand on the reader next to the door and the red light turns to green. Then the road barrier opens.

V58 https://www.youtube.com/watch?v=evgiRrrFMdM "Useful NFC/RFID tag implant applications 14: toy car project for CeBIT 2017" ACKspace 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to unlock the central door locking system at a toy car. 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. Two 6. Left hand, purlicue AND Left hand, outside of palm, flexor/abductor muscle
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To to unlock the central door locking system at a toy car. 15. RFID reader in the toy car, toy car. 16. There has to be almost direct contact of the skin with the reader, 1 second to unlock it.

Abstract	A man demonstrates how he uses the RFID chip to unlock the central door locking system at a toy car. He puts one side of the hand on the toy, touching it and the system unlocks and then he repeats using his second implant (xNT) and the system unlocks again.

V59 https://www.youtube.com/watch?v=6hwyVdmYOaM "Implanted RFID Chip Keyless Ignition Yamaha R6 01" Lj D 2011

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to start a motorcycle. 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Left hand, wrist outside, close to thumb.
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Garage, vehicle 14. To start a motorcycle. 15. RFID reader set in the motorsycle. 16. There has to be almost direct contact of the skin with the reader, 1 second to start it. He has to stand up and bend to reach the reader, which may not be feasible while seated on the motorcycle.
Abstract	A man demonstrates how he uses the RFID chip to start his motorcycle. He tries to start it without scanning the implant first, and the engine does not respond. Then, he scans his implant by touching the reader in the side of the motorcycle and the engine starts.

V60 https://www.youtube.com/watch?v=cHCVlLrKYJM "The World's First Implant-Activated Smart Gun" Motherboard 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to activate a smart gun. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Left hand, purlicue

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. adult 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Garage 14. To activate a smart gun. 15. RFID reader and antenna on the gun. 16. There is direct contact of the skin with the reader, 1 second to activate it.
Abstract	A man demonstrates how he uses the RFID chip to activate a smart gun. First, the interviewer tries to fire the gun without an implant and is not able to. Then Amal scans his implant on the reader of the gun and he is firing the gun. He explains that he thinks RFID chip implants can add security to guns and change the current situation, as the fail-secure mechanism can prevent anyone without an implant to use the gun.

V61 https://www.youtube.com/watch?v=HKP1SyhHc-k "RFID front door entry using implanted tag" rodjownsu 2011

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he uses the RFID chip to open a door. 2. Neutral/Positive 3. English

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. One 6. Right hand, purlicue
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. ? 10. unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To open a door. 15. RFID reader, authenticated with atmega CPU. 16. There is indirect contact of the skin with the reader, less 1 second to open it.
Abstract	A man demonstrates how he uses the RFID chip to open a door. It is authenticated with the atmega CPU inside. The controller board then activates the strike output which allows the door to open. The strike does not interfere with the original locking mechanism therefore you can still use a key for access. He tried to open the door and it doesn't open. Then he scans his implant in less than a second and without direct contact of the skin and the reader he opens the door. He then closes the door and tries one more time without scanning and the door does not open again.

V62 https://www.youtube.com/watch?v=K5gWtpVPbJ4&t=212s "Why I modify my body:magnet and silicone implants" (from 5min) Anarchy24386 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about his experience with magnet implants 2. Neutral, he mentions both pros and cons 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnets 5. 2 6. chest, ring finger (right)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. New York City 10. unknown 11. it's cool, it's a novelty 12. made typing difficult for 3 weeks, hurts when put pressure or have another strong magnet and pull it to the skin, not able to have an MRI, will probably take it out in a couple of years
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To lift objects and to feel the pulsation of the magnetic field by sticking his finger in a microwave or the hair clippers 15. Nail clipper to demonstrate the use of magnet 16. Problems: made typing difficult for 3 weeks, hurts when put pressure or have another strong magnet and pull it to the skin, not able to have an MRI.

Abstract	A man is talking about his experience with implantable magnets. First he talks about the surgery and the feeling of implanting a bigger magnet on his chest, and then about his small magnet in his ring finger, mentioning the differences in placement, as the finger magnet was quick and painless and it required only 1-2 stitches. Then he shows the use of the magnet by lifting a nail clipper and talks about problems that have occurred and limitations.

V63 https://www.youtube.com/watch?v=EaiTZvTUZ_c "Magnet implant" sarah fonda 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about her experience with the magnet implant 2. Negative 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 2 6. fingers (small and index), left hand

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. [for surgical insertion]: it would not heal, even after 3 weeks. Damaging nerve endings, one magnet attracted the other and the magnet went off through the stitches. The microwave makes the magnet buzz in an uncomfortable way – she suggests to stay away from them and induction cook tops and other NE magnets. It hurts after insertion, but physical reactions stopped after a few days. It would hurt when smashing the finger forcefully on a surface
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To lift objects eg. A needle, to listen to music by sticking the finger in the ear 15. None 16. Problems: mentioned above.
Abstract	A woman is talking about her experience with magnets. She compares surgical insertion to doing it on her own by using 2 needles. First she explains the different types of problems she encountered and then she demonstrates different sizes of magnets. She tried to solve the problems by inserting in herself like an RFID chip. She then demonstrates how she inserted it using 2 needles. Then she talks about more general problems (mentioned above)

V64 https://www.youtube.com/watch?v=yTqHZrIcCdE “Headphone Implants” Rich Lee 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about his experience with the magnet implants and to demonstrate the use of the magnets. 2. Positive/neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnets 5. 3 6. ears, left ring finger
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Unknown 11. Explore possibilities of the magnets 12. Not many people had that happen [ref. listening to music through the finger], it’s cool, it’s a crazy experience 13. Cool, crazy experience
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	14. Home 15. To listen to music by sticking the finger in the ear. 16. Coil, amplifier, backup supply of batteries, jack, phone. 17. New way of listening to music, “a type of earbuds”
Abstract	A man is talking about his experience with magnet implants in his ears. He demonstrates how he uses his magnets to listen to music. He explains why he is trying it out and that he is only exploring possibilities, he is not selling products. He is answering questions about the magnets in a sarcastic way, since the

	questions were about hacking and religion/conspiracy theories.

V65 https://www.youtube.com/watch?v=IH2gy4AT8H4 “First Test of my magnet implant” Jeff's Experiments 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet and test its strength. 2. Positive/neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. middle finger (specific hand-unknown)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. To feel magnetic fields. “he now has a sixth sense” [description box] 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Unknown 14. To lift and play around with a small metal bead, to test the magnet’s strength 15. Metallic bead 16. -

Abstract	A man is playing around with a metal bead, while lifting it with his middle finger where an implanted magnet is placed.

V66 https://www.youtube.com/watch?v=EDDduYB8ZZo “My magnetic finger implant” Trent Bosun 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet. 2. Positive/neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. ring finger (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To lift and play around with small metal objects 15. Paperclips, bottle cap, small screwdriver, metal round object 16. -

Abstract	A man is playing around with various metal objects, while lifting it with his ring finger where an implanted magnet is placed.

V67 https://www.youtube.com/watch?v=t4I58UyD3k4 “Magnetic implant” Church Haley 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet. 2. Positive/neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. ring finger (left hand) – the magnet is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To lift and play around with small metal objects 15. Coins, one key with a key chain, lighter 16. -

Abstract	A man is playing around with various metal objects, while lifting it with his ring finger where an implanted magnet is placed. He calls it his “magician’s magnet implant”.

V68 https://www.youtube.com/watch?v=c9xgUjwT03I “Magnetic finger implant done by Baz Black Piercing” baz black 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet. 2. Positive/neutral 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. middle finger (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Piercing studio 14. To lift and play around with a small metal object 15. A small magnet 16. -

Abstract	A man is playing around with a small metal object, while lifting it with his middle finger where an implanted magnet is placed.

V69 https://www.youtube.com/watch?v=sjBDKEE3VZQ "I have magnet implanted in my finger" Devin O'Leary 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet. 2. Positive/neutral 3. Unknown
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. pinky finger (right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To lift and play around with two small round magnets (small pebbles) 15. Two small round magnets 16. -

Abstract	A man is playing around with two small magnets, while lifting it with his pinky finger where an implanted magnet is placed.

V70 https://www.youtube.com/watch?v=XlhbPcHNE8E "First play with my Magnet and a Compass" Candii Banks 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. middle finger (right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Female 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To play around with a compass, showing how it demagnetizes it with the magnetic implant 15. A compass 16. -

Abstract	A woman is playing around with a compass, while demagnetizing it with her middle finger where an implanted magnet is placed.

V71 https://www.youtube.com/watch?v=sSm0OLdok38&list=PLyS9GHmGb53A8zy4ZaapFYXeXuB-Y63Qz "Magnetic manipulation" Bird Machine 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. abductor/flexor muscle (right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Female [based on account] 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To play around with a small round magnet 15. A small round magnet (pebble) 16. -

Abstract	A woman is playing around with a small round magnet, while lifting it with her pinky finger where an implanted magnet is placed.

V72 https://www.youtube.com/watch?v=26SKwj6PC2M "magnet implants" Kimberly Harte 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show interaction with the magnet. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. outside part of thumb (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Bar 14. To lift a tong 15. Tong 16. -
Abstract	A woman is lifting a tong with her thumb where an implanted magnet is placed.

V73 https://www.youtube.com/watch?v=XyiGBqLHTrw "F&A: Magnet im Finger! | Mein Magnetimplantat | ❁ Lilith Whitic ❁ " 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about surgery and her experience with the magnetic implant, to demonstrate its use and to talk about the whole process of implanting it. 2. Positive 3. German
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. ring finger (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Female 9. Gensingen, DE 10. Unknown 11. It is a nice toy, finds it interesting. It was a spontaneous decision – she was about to get a piercing and it was not possible at that time so instead she got the magnet implant. It leaves a cool impression when lifting coins at a restaurant. 12. The surgery/insertion was fast and painless, she is planning to get more magnets. It leaves a cool impression when lifting coins at a restaurant. It does not annoy her in her daily life, her finger does not get stuck on objects. She sees it as a fun toy to play around with.

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To lift a hairclip, coins, nail file. To provoke people in public, for example when paying at a restaurant she starts playing around with the coins and she likes to watch people's reactions. 15. Hairclip, nail file 16. Can't lift heavier objects than a nail file, like a lighter. She has to stay away from small pointy metal chips. She touched metal railings when the finger was still not healed so she had to take it out because of movement inside the finger. She will have to take it out in the future for good.
Abstract	A woman is talking about her experience with a magnetic implant through a Q&A type of video. She explains the reasons why she got it, details about the process and demonstrates its use by lifting a hairclip and a nail file with her ring finger where an implanted magnet is placed. She explains that the nail file is the maximum weight she can lift and talks about different kinds of magnets that can be implanted. She talks about using it too much before it was healed and that there is the possibility that she will need to take it out in the future because of that. She mentions when she mostly uses it and finally that it doesn't interact with credit cards, mobile phones etc, and it does not annoy her in everyday life activities.

V74 https://www.youtube.com/watch?v=1OdIwQa9nVo "NFC aka RFID implant used for unlocking phone" Juris Daugulis 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate he unlocks his smartphone using an RFID implanted chip. 2. Positive/Neutral 3. English

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. 1 6. purlicue (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Everywhere (home) 14. To unlock the user's smartphone 15. Smartphone (Sony Xperia M4 Aqua Dual with Android 5.0) 16. -
Abstract	A man who has an RFID chip implanted in his left hand, demonstrates how he unlocks his smartphone using NFC. He is holding his phone with his right hand and is placing it on the purlicue of his left hand. The phone is touching his skin. Then the phone gets unlocked in 1 second.

V75 https://www.youtube.com/watch?v=o-beIrfUTys "NFC RFID Implant - unlocking Windows Workstation" Laurens Kreuze 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how he unlocks his desktop (Windows Workstation) using an RFID implanted chip. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. 1 6. purlicue (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To unlock the user's desktop – Windows Workstation 15. Desktop, RFID reader (connected to PC) 16. -
Abstract	A man who has an RFID chip implanted in his left hand, demonstrates how he unlocks Windows Workstation using NFC. He is placing the purlicue of his left hand on the RFID reader. The reader is touching his skin. Then Windows gets unlocked in 1 second.

V76 https://www.youtube.com/watch?v=DF_d5NA602s "NFC lights controlled by implant in my hand. Keyduino board used" Russell shevlane 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate turning on NFC lights using a NFC implanted chip. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. purlicue (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To turn on NFC lights 15. KeyDuino board (NFC reader), NFC lights 16. During the first try, the lights turned on in a second. During thr second try the reader did not read the implant and the user had to try different angles of his hand multiple times. The lights did not turn on.
Abstract	A man who has a NFC chip implanted in his left hand, demonstrates how he controls NFC lights by turning them on with his implant. He is placing the purlicue of

	his left hand on the NFC reader. The reader is touching his skin. During the first try, the lights turned on in a second. During the second try the reader did not read the implant and the user had to try different angles of his hand multiple times. The lights did not turn on.

V77 https://www.youtube.com/watch?v=EV32tzXAMxE "RFID-NFC Implant" Henry Gray 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about his experience with the RFID/NFC implant. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID/NFC 5. 1 6. purlicue (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Unknown 11. Curiosity about new technology, he likes the potential that he can use his hand to scan his details by phone instead of giving a business card or unlocking a door if you put the reader on it or unlocking car door or starting motorcycles.

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	12. Unknown 13. Unknown 14. Unknown 15. He can use his hand to scan his details by phone instead of giving a business card or unlocking a door if you put the reader on it or unlocking car door or starting motorcycles.
Abstract	A man who has an RFID chip implanted in his hand, talks about the reasons why he chose to have the RFID chip and the possibilities it gives to the user. It then shows the video of the insertion.

V78 https://www.youtube.com/watch?v=FOk4o6-4c98 "xM1 NFC Implant with Nokia Lumia 920" Alexander Harding 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to show a business card/contact info on a smartphone by scanning the NFC implant. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. purlicue (right hand)

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. It works perfectly and it's simple.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Unknown 14. To show personal information/business card on a smartphone. 15. Smartphone – Nokia Lumia 920 16. Giving personal information to another person by touching the smartphone with his hand.
Abstract	A man who has an NFC chip implanted in his hand, shows how to show contact information on a smartphone by touching the phone with his purlicue for 2 seconds. Then the screen shows a message to accept content and after he presses "accept" the personal information is shown on the screen of the phone.

V79 https://www.youtube.com/watch?v=U_Wd70KZ_Mc "My new digital doorlock & how to open it with an implant" Digiwell - upgrading humans 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to install a digital doorlock and how to unlock a door by scanning the RFID/NFC implant. 2. Positive/Neutral 3. English

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC/RFID 5. 1 6. purlicue (right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To unlock the house main door. 15. Doorlock: Omega Flex by CES 16. Unlocking the door using an implant instead of a key.
Abstract	A man who has an NFC chip implanted in his hand, shows how to install a digital doorlock and unlock the main house door by using an NFC implant. He touches the doorlock with his hand (purlicue) and after one second the door unlocks.

V80 https://www.youtube.com/watch?v=NT7DZREdc4s&index=2&list=PLpjlJSHNxjjPwYyR-1_6L8TDyElDlWtdD "Life as a Cyborg - Day 1 - First day out as Transhuman" Phil Hutchinson 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about the first impressions/experience after the NFC implant insertion and to demonstrate how to show a personal art facebook page by scanning the NFC chip with a smartphone. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 in each person 6. purlicue (Man: left hand, woman: right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adults 8. Male and female (2 people) 9. UK 10. Unknown 11. Unknown 12. Painless, fast healing, no problem while driving as expected.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. To make a facebook page appear on a smartphone by scanning the NFC implant. 15. Smartphone 16. The smartphone placement needed adjustment 3 times before the device was activated. The chip was covered with a small bandage during the act. He expected discomfort while driving (one day after, it was still bruised) but there was not any. His implant is on the left hand and he is driving a right hand drive car (UK) so the stick is on the left but there is no

	problem with that.
Abstract	A man and a woman who each one has an NFC chip implanted in their hands, talk about their first impressions after the insertion. They show the small wounds and then demonstrate how to show a personal art facebook page on a smartphone by scanning the chip. The man is holding the smartphone on the woman's hand. The smartphone placement needed adjustment 3 times before the device was activated. The chip was covered with a small bandage during the act. Then, the man is driving and talking about his concerns and experience of driving with the bruised hand with the implant. The end of the video is at a dog park and is irrelevant.

V81 https://www.youtube.com/watch?v=RNa5TnS4ICI&list=PLpjlJSHNxjjPwYyR-1_6L8TDyElDlWtdD&index=3 "Life as a Cyborg - Day 2 - I think I broke it"Phil Hutchinson 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about the first impressions/experience after the NFC implant insertion and some first concerns and problems they had. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 in each person 6. purlicue (Man: left hand, woman: right hand)

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adults 8. Male and female (2 people) 9. UK 10. Unknown 11. Unknown 12. Woman: chose to put it in the right hand because she is a left-handed artist and she would not want the pencil to sit on he chip, it would be uncomfortable.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. - 15. - 16. The man thought he bricked the implant by using the company's (Dangerous Things) app. He locked it and thought he could not use it but after restarting his phone he was able to unlock it. He panicked at that moment. DT have a life support tool, where you can scan the chip and get the info, also to contact customer support service. If he would have to take it out, he is not worried as it is an easy and fast procedure and it would not hurt. The woman tried to use it in the first day and the scanning did not work, but that was because of the fresh wound. She also had to consider which hand to get it in, and her work (artist) affected that decision.
Abstract	A man and a woman who each one has an NFC chip implanted in their hands, talk about their first impressions after the insertion. First, the woman is talking about the first 39 hours after she got it, it was a bit tender when moving the hand on the first 24hrs but now it is healing fine. It was not sore, just tender. It would not scan at first and she panicked, but she found out it was because of the initial wound. She is happy with it and looking forward to finding different things she can do with it. The man thought he bricked the implant by using the company's (Dangerous Things) app. He locked it and thought he could not use it but after restarting his phone he was able to unlock it. He

	panicked at that moment. DT have a life support tool, where you can scan the chip and get the info, also to contact customer support service. If he would have to take it out, he is not worried as it is an easy and fast procedure and it would not hurt

V82 https://www.youtube.com/watch?v=Pn0eZ2-H81E&list=PLpjlJSHNxjjPwYyR-1_6L8TDyElDlWtdD&index=4 "Life as a Cyborg - Day 3 - Implant Migration" Phil Hutchinson 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about migration of the NFC implant. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. purlicue (Man: left hand, woman: right hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adults 8. Male and female (2 people) 9. UK 10. Unknown 11. Unknown 12. The man is talking about migration of the implant. The implant rotated about 45 degrees and moved about 1 cm from the initial implantation site, which worried him. He says that according to Amal Graafstra, migration is not a problem unless where it migrates to is an issue, as in between the thumb and the index finger. After this, he is not concerned anymore.

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. - 15. - 16. The man thought he bricked the implant by using the company's (Dangerous Things) app. He locked it and thought he could not use it but after restarting his phone he was able to unlock it. He panicked at that moment. DT have a life support tool, where you can scan the chip and get the info, also to contact customer support service. If he would have to take it out, he is not worried as it is an easy and fast procedure and it would not hurt. The woman tried to use it in the first day and the scanning did not work, but that was because of the fresh wound. She also had to consider which hand to get it in, and her work (artist) affected that decision.
Abstract	A man and a woman who each one has an NFC chip implanted in their hands, talk about their first impressions after the insertion. The man is talking about migration of the implant. The implant rotated about 45 degrees and moved about 1 cm from the initial implantation site. He sought advice on a facebook page. He was surprised with how many people offered advice. He says that according to Amal Graafstra, migration is not a problem unless where it migrates to is an issue, as in between the thumb and the index finger.

V83 https://www.youtube.com/watch?v=aoxzWWVBMrU "implant test one" Lee Azzarello 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of the NFC implant on a self-made control system. 2. Positive/Neutral 3. English

Device usage in video: 1. Type of implantable device(s): e.g., RFID, magnet, NFC 2. Number of devices 3. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. purlicue (left hand)
User Characteristics: 4. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 5. Gender 6. Location? (the part of the world) 7. Frequency of use 8. Motivation for having the implant 9. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 10. Context: e.g., home, vehicle, office, garage 11. What is the implant used for 12. Use of external objects: e.g., smartphones, locks, metal objects 13. Opportunities and problems	13. Home 14. To access/activate a self-made control system. 15. Control system: Adafruit PN532 shield for an Arduino, 3 cards (eg. credit card), 4 NFC chips. 16. The man had to replace his hand 3 times and after 5 seconds the chip was scanned successfully by the control system.
Abstract	A man has an NFC implant and a self-made control system. He scans various cards and chips and the reaction of the system is either a red light turning on or nothing. Then, he scans his hand (purlicue) and after re-adjusting the position 3 times (5 seconds) the reaction of the system is a green light being turned on.

V84 https://www.youtube.com/watch?v=IGmVZBOyrtM "NFC power lock control" Danny Grove 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to unlock a car door using the NFC implant. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. purlicue (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. He had no power lock at his car and he hates keys. 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Vehicle 14. To unlock a car door. 15. Control system/NFC reader connected to the car, car. 16. The man unlocks the door after one second by scanning his chip. He has not placed the reader in a permanent position in the car yet, as he has not decided where is would be more convenient to do so.

Abstract	A man has an NFC implant and an NFC reader connected to his car. He has not placed the reader in a permanent place of the car yet, so he is holding it with his right hand for demonstration purposes, while scanning his implant on the left hand. After one second, a red light on the reader goes on and the door handle gets unlocked. He repeats this action and it has the same results.

V85 https://www.youtube.com/watch?v=5ngZDeVTYiE "Freelancer.com in my NFC Biochip" Futurist Speaker Nikolas Badminton 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to access a website using the NFC implant. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. purlicue (left hand)
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Middle aged 8. Male 9. Unknown 10. Unknown 11. "Freelancer.com is having a hackathon so I thought I'd become a walking conduit for accessing the site" 12. Unknown

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home(everywhere) 14. To access a website. 15. Smartphone 16. Given the opportunity of the hackathon, people can find him and scan his hand if they own an NFC-enabled phone and access the website “freelancer.com”.
Abstract	A man has an NFC implant in his hand and demonstrates how to access a website by scanning his implant with his smartphone. He places his smartphone on his left hand and after 1 second, there is a notification on the screen asking to choose a browser (“chrome” or “internet”). He presses “chrome” and the website freelancer.com is accessed immediately.

V86 https://www.youtube.com/watch?v=kmhbZ86F-WU “Episode 002 NFC and RFID Implants” Two Cyborgs and a Microphone 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about NFC/RFID implants, basic information, how it works, main use. 2. Positive/Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. 2 (one each person) 6. outside of the left hand (both)

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male (2) 9. Unknown 10. Unknown 11. To eliminate the need of carrying keys, wallet. 12. A lot of uses that make daily activities easier, but security concerns as well. They think people are not aware of the risks of this technology and that it needs more attention.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home (everywhere) 14. To transfer personal information to the address book of someone's smartphone. 15. Smartphone 16. People write down information eg. Email addresses incorrectly, so this problem is solved by transferring info via the microchip. Security problems and people are not aware of them, this matter needs more attention. This technology can eliminate the need of carrying keys, wallet and any private IDs that include personal information. They think that when used properly it can only increase security as well as increase the convenience factor. They call it a "custom configurable button that only you can push – that's powerful". Medical risks like a study connecting rfid chips in animals to cancer are not valid according to them. So far no health risks involved. They are always thinking of new ways to use the chip, new things to unlock etc.

Abstract	This is a podcast of two people talking about RFID and NFC microchips. They both have RFID implants in their hands. They explain how this technology works in detail. Then, they talk about main uses of the chip and the main differences between RFID and NFC. Then they talk about what they use it for and other cases that have read about and the security risks of this technology. Then they talk about the procedure of implanting it. They think it's a very simple procedure, painless, fast and they compare it to a common piercing. They talk about which regions where people can get the implant – state laws and where piercing artists are willing to do it. Doctors do not usually do this procedure. They talk about medical risks of this technology.

V87 https://www.youtube.com/watch?v=CC80RuOEaBM "Transhumanism Is Here: Man Microchips Himself and Hacks Android With It" WeAreChange 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about his experience and impressions of the NFC microchip implant. 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. 1 6. Unknown

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. He is interested in biohacking, RF and he is an engineering so the microchip combines all his interests, and when he is taking up a project he wants to "go all the way" so he wanted to try it himself. He thinks it's cool. It gives him a way to access all kinds of computer systems. He thinks it's a cool think to show to people. He gives an example of going to the gas station and using his hand to pay and tell people that he is getting gas for free. He is actually paying but by using his microchip.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Outside 14. "to have a bitcoin wallet, payment system and an NFC android hacking tool." To show off and trick people. 15. Smartphone 16. medical dangers: if you buy a cheap chip, the bio glass that it is covered with may cause metal poisoning. Also, if you don't use the right chip the capsule might break and the content of the chip –that is used to hold the chip from rattling around- might poison you. If you don't sterilize the inside of the chip before you seal it then bacteria can colonize it and grow and then if it breaks these bacteria can get into your body. He says that frequencies are around us even before man-made ones so he does not consider them dangerous. He points out the differences between NFC and RFID, as in RFID you can have interaction from a 10-feet distance, where with an NFC chip you have to be within few centimeters. That is why he thinks that if someone decides to have it, they should to research and be sure about it. Not let governments put it in everyone against their will. He thinks RFID technology is suitable for tracking supplies, tracking people. He

	thinks that it is becoming more widespread and the security of this technology is low, so we should focus on improving it. He thinks the worst outcome is gathering data and using it for analytics to sell products and tracking, just like advertising works right now.
Abstract	A man that has an RFID microchip implant is being interviewed about his experience and about technical details of having the chip implant.

V88 .https://www.youtube.com/watch?v=lonXSe4ZYjY 89-123 2016 "What can I do with my RFID/NFC Implant" Digiwell - upgrading humans - NFC/RFID

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. Multiple people demonstrate how they use their RFID and NFC implants 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID and NFC 5. Unknown 6. Purlicue some left hand, others right hand
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Female and male 9. Unknown 10. Presumably daily 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects	13. Interaction takes in multiple places 14. Some of the people use it to unlock the doors of their homes or cars, login into their computers, unlock phone screens, others use it as an ID to gain access to various places

16. Opportunities and problems	15. RFID/NFC reader, smartphone, car, computer, lock 16. Easy to open the door of cars, houses – no need for keys. Having an ID always with you – not need for a wallet. Problem - in some cases there is a need for extra hardware
Abstract	Multiple people are demonstrating how they are using their RFID/NFC implants. They apply their implants in daily activities such as unlocking their house and cars doors, getting access to various places by using the implant as an ID. In addition, logging in their computers and completing a bitcoin payment.

V89 https://www.youtube.com/watch?v=8J0Lvq1N6_s "Raspberry Pi RFID door lock + NFC chip implant" Redniik 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to unlock a door with a NFC chip implant 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. Unknown 6. Purlicue right hand
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Presumably daily (every time unlocking the door) 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects	13. Outside home 14. A man places his right arm on a NFC reader to unlock the door and he shows that he can lock the door with the implant as well. 15. NFC reader, lock

16. Opportunities and problems	16. Easy to open the door, no need for a key.
Abstract	A man with a NFC implant demonstrates how to unlock and lock the door with his implant.

V90 https://www.youtube.com/watch?v=QdxnszLI-Hw "Amal answering RFID implant interview questions" Amal Graafstra 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To answer some of the questions about RFID implants 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. 2 6. Purlicue both left and right hand – the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Had no fears of having an implant, compares having an implant to a piercing or a tooth implant. It was a natural thought for him to get an implant as he thinks it's a good idea. Comments from religious people don't matter to him. Was death threatened a couple of times. But does not pay too much attention to it now. In the future he would like to see "ultimate freedom in cognitive and personal augmentation."
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. No interaction in the video, a RFID user just answers some questions about having an implant

Abstract	A man with an RFID implant answers some question about his experience with the implant.

V91 https://www.youtube.com/watch?v=yLrjXKgq3ds "My life with an RFID microchip implant and other topics" Brave Little Pixel 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about an RFID chip a person has 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue left hand – the implant visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. UK 10. Unknown 11. Got an implant to use it as a party trick or to have other people scan the chip and get his art page info. Wanted to get an implant to be more provocative, different, to get people to think about relationship with technology. 12. Was quite hard to get it done. He likes that he can see and feel the microchip in his arm.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A young man places a smartphone on his left hand and a link for his art page pops up on the screen. He needs to adjust the position and it takes a bit for a phone to find his implant. However, the man states that this is an old phone and his new phone has no problems finding the RFID in his hand. 15. Smartphone 16. A more "original" way of promoting your own work
Abstract	Artist has an RFID chip mainly as a party trick to have other people scan the chip and get his art page info.

	Didn't seem to have researched it completely. Wanted to get it to be more provocative, different, to get people to think about relationship with technology. Was quite hard to get it done. Believer of cyborg movement. Surprisingly, he likes that he can see and feel the microchip in his arm

V92 https://www.youtube.com/watch?v=YkWVbpLdAPI "RFID Implant opening a door -- Cloned HID" Stephen Shkardoon 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to open the door with a RFID implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue left hand – the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Work 14. A man places his left hand on a RFID reader twice and opens the door 15. RFID reader 16. No need for a key, easy way of unlocking the door
Abstract	A man demonstrates how he unlocks the door at work with his RFID.

V93 https://www.youtube.com/watch?v=vog_bNX_Z8M "RFID implant demonstration" Tommy Brunn 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to give contact info with a RFID implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue left hand – the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man places a smartphone on his left hand and his contact info pops up on the phone screen 15. A smartphone 16. Unknown
Abstract	A man demonstrates how he shows his contact information with an RFID.

V94 https://www.youtube.com/watch?v=ui80McXiFKY "Writing to the new NFC RFID chip in my hand!" Tarah Wheeler 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to send data to a NFC/ RFID chip 2. Positive 3. English

Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC/RFID 5. One 6. Purlicue right hand – the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Female 9. USA 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Conference 14. A man places a smartphone on a woman's right hand where she has an NFC/RFID chip implanted. The phone finds the chip and the man is able to send a text message to the implant 15. A smartphone 16. Unknown
Abstract	A woman has an NFC/RFID implanted in her right hand. She demonstrates how data (in this video text data) can be send to her chip from a smartphone.

V95 https://www.youtube.com/watch?v=Kv_OG7zG7ro "SuperHouseTV #8: Implantable RFID" SuperHouseTV 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about an RFID implant and show the process of implanting 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g.,	4. RFID 5. One 6. Inner part of a left arm – the implant is not visible

fingertip, top of the wrist, purlicue	
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Australia 10. Unknown 11. He wanted to get an understanding of such technology, also what would it take to implant something in his body that is not for medical reasons – so get it implanted by medical professionals and not by a piercing artist. Finally, he wanted to do an investigation whether having an implant could be a social issue and whether tracking by RFID was a big problem in terms of privacy 12. Difficult process to get an RFID tag implanted by a surgeon as such procedure is not technically covered by insurance. Is not concerned with privacy issues as the implantable RFID range is very short, only 10mm.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man with a RFID chip talks about the motivation behind getting an implant. No interaction shown 15. None 16. Unknown
Abstract	A man with a RFID chip talks about the motivation behind getting an implant. He also talks about security issues of having an implanted RFID.

V96 .https://www.youtube.com/watch?v=m9HIYOK_8K4 “RFID/NFC Bio Payments” EEVblog 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about an RFID implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC	4. RFID 5. One

5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	6. Left hand thumb – the implant is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Adult 8. Male 9. Australia 10. Unknown 11. He wanted to get an implant because he saw others getting one. Is a part of a biohacking movement called grinding and wanted to use such technology for something useful. In this case make a payment with a NFC/RFID implant 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Bar/cafe 14. A man with a RFID places his left-hand thumb on a card reader to show that his chip can be found by the reader though he can't complete the transaction as his RFID is not programmed yet to make payments with 15. Card reader 16. To make a payment with RFID implants available and that it would be an official operation supported by banks
Abstract	A man with a RFID places his left-hand thumb on a card reader to show that his chip can be found by the reader though he can't complete the transaction as his RFID is not programmed yet to make payments with

V97 https://www.youtube.com/watch?v=qsdK_j-tieQ "NFC bioimplant Cyborg chip" Gabor Heim 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the uses of a NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices	4. NFC 5. One 6. Purlicue left hand – the implant is visible

6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Hungary 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man with a NFC implant places a smartphone on his left hand and a link to his Linkedin pops up on the screen 15. Smartphone 16. Unknown
Abstract	A man with a NFC implant places a smartphone on his left hand and a link to his Linkedin pops up on the screen

V98 https://www.youtube.com/watch?v=uK-Oz_FTiJw "RFid chip implanted - I'm a cyborg now"" Rui Gouveia 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of RFID chip 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. RFID 5. One 6. Purlicue left hand – the implant is visible
User Characteristics:	

7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man with a RFID implant has built a small system with which he is able to turn a tiny engine that has a paper on saying “Hello world” 15. Some hardware powered up by a laptop 16. Unknown
Abstract	A man with a RFID implant has built a small system with which he is able to turn a tiny engine that has a paper on saying “Hello world”

V99 https://www.youtube.com/watch?v=tVVTSXA0HTU “Diy Magnetic Implant“ Cody'sLab 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to implant a magnet in a fingertip yourself and also play around with the implanted magnet 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. One 6. Ring finger tip - left hand – the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Wanted to sense magnetic fields 12. Thinks it’s cool

11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has a magnet implant in his finger. He can move a compass arrow while hovering over it. It feels like his physically using force to move the compass arrows He can also pull up a needle, but it doesn't stick to his finger as the magnet he implanted is very small. He feels buzzing sensation when he hovers over a laptop and a laptop charger as well when he's making food on an electric stove. 15. Compass, needle, laptop, laptop charger, stove, magnet 16. The sensitivity of the magnet decreased after it healed – can't feel the magnetic fields that well as he felt when the implant was still healing. Thinks it's because of scar tissue. Feels a bit uncomfortable when playing with a big magnet because of pulling force.
Abstract	A man demonstrates how to implant a magnet in a finger and demonstrates how to use it.

V100 https://www.youtube.com/watch?v=D-g3sXfLcRA&t=4s "Magnetic Implants" Forrest Ferrox 2012

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To discuss about his magnet implants 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. Unknown 6. Multiple places on the left hand palm – the implants are not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years)	7. Young adult 8. Male

and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	9. Unknown 10. Unknown 11. Saw a video of someone having an implanted magnet, thought it was cool 12. You need to be careful with electricity when having such implants
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has a magnet implants in his left hand. He plays around with different small metal objects. However, he mostly describes the feeling of sensing magnetic waves in different objects, like microwaves, laptop chargers, car engines etc. Feels tingling sensations. 15. Needle, laptop charger, small knife, coins, screws, small engine, watch 16. Unknown
Abstract	A man with multiple magnet implants describes the experience of having such kind of implants and sensing magnetic waves around him.

V101 https://www.youtube.com/watch?v=hDK596UJwZM&t=143s "Injured magnet implant!" sarah fonda 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about her injured magnet implant 2. Negative 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Index fingertip left hand – the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use	7. Young adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. You need to be careful not to physically injure

11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	the finger that has the implant as there's a possibility of crushing the magnet and getting infection as well as losing the magnet
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A woman with magnet implants talks about her finger injury that had the magnets implanted. No interaction, just her talking about the injury and healing process, giving tips what to do in such situation 15. None 16. Magnets are not indestructible, need to be careful not to injure yourself
Abstract	A woman with magnet implants talks about her finger injury that had the magnets implanted. No interaction, just her talking about the injury and healing process, giving tips what to do in such situation

V102 https://www.youtube.com/watch?v=gxz-3bIBJFA "Magnet implant sensations" sarah fonda 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about the sensations, one can feel with a magnet implant 2. Neutral 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Index fingertip left hand – the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. She explains that having a magnet implant is as seeing a new color but nothing extraordinary as having a 6th sense. She is not super excited about the implants but thinks that in some cases in can be useful

Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A woman with magnet implants talks about sensations she feels with magnet implants. She says that she feels vibrating sensations when interacting with objects that are radiating electromagnetic waves. No interaction, just talking about the experience 15. None 16. With magnets you can tell which wire has electricity running through, which way is north, also know if somethings magnetic
Abstract	A woman with magnet implants talks about sensations she feels with magnet implants. No interaction, just talking about the experience.

V103 https://www.youtube.com/watch?v=oVnqruB387M&t=27s "The strong magnet in my finger - Part 2" Peter Marquardt 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate magnet implant and provide some information 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Ring fingertip left hand – the implant is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Wanted to sense electromagnetic fields 12. He feels that his magnet vibrates when near electromagnetic waves and states that his brain perceives such sensation as a 6th sense. He says that he can feel a new electromagnetic sensation every 4th week or so and he loves it.
Type of interaction:	

13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man with a magnet implant plays around with small metal objects. He hovers paper clip over his ring finger and one can see a magnet moving under his skin. He also lifts euro coins. He's able to lift small screwdriver that is not magnetic, also forks, knives, batteries, screws. Says that he can feel PC fans, hard drives, phone speakers and power bricks if very close 15. Paper clip, coins, small screwdrivers, fork, knife, batteries, screws 16. The implant must be removed before MRI.
Abstract	A man with magnet implant plays around with small metal objects and sensations he feels with his implant

V104 https://www.youtube.com/watch?v=ag7P9pouU_U&t=4s "The speaker in my finger" Peter Marquardt 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to make a speaker with a magnet implant in a finger 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Ring fingertip left hand – the implant is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Wanted to feel electromagnetic waves 12. He thinks it's fun.
Type of interaction: 13. Context: e.g., home, vehicle, office, garage	13. Home 14. A man with a magnet implant demonstrates

14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	how he made a speaker with his implant. He took a wireless speaker that is using bluetooth and has a battery. He removed the speaker and added a wire that has a coil at its end. The coil is an electromagnetic magnet. He puts his implanted finger in the coil and places next to his ear and he says that he can hear music. He then places a coil (with his finger) on the microphone and music can be heard. 15. Wireless speaker, coil 16. Unknown
Abstract	A man with magnet implant demonstrates that one can make a speaker with a magnet implant.

V105 https://www.youtube.com/watch?v=JmSKHobQ0AA "Magnet implant update week 2" sarah fonda 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To update on her magnet implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Index fingertip left hand – the implant is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. Surprised that it healed so fast, she can feel external hard drive. She explains that when the external hard drive is not connected properly she uses her magnet and she can feel it that the power is not running through the external hard drive and her laptop. She thinks it's a wonderful experience to feel new sensations
Type of interaction: 13. Context: e.g., home, vehicle,	13. Home

office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	14. A woman with a magnet implant talks about her healing process, the new sensations she can feel with the magnet. She also shows how a needle sticks to her finger 15. A needle 16. Unknown
Abstract	A man with magnet implant demonstrates that one can make a speaker with a magnet implant.

V106 https://www.youtube.com/watch?v=Zqab1-rDIRw "NFC chip and magnet in hand" Candii Banks 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To show where an NFC chip is implanted and play around with a magnet 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC and magnet 5. 2 6. NFC – right hand thumb, the implant visible when the skin is pinched. Magnet – left hand ring finger tip, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A woman with NFC implant and a magnet implant. She first shows where her NFC implant is located. She pinches her skin on her right-hand thumb and the implant is visible, she shows that she can move it slightly up and down. She also takes a string of small metal balls that sticks to her left-hand ring finger.

	She adds more small metal balls to the string to show that the magnet pulls through the string itself 15. A string made of small metal balls 16. Unknown
Abstract	A woman with NFC implant and a magnet implant. Shows where her NFC implant is located and plays around with her magnet

V107 https://www.youtube.com/watch?v=kznWw1EcHXs "My magnetic implant" Rin Rae 2012

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To play around with magnet implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Right hand ring finger tip, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Female 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A woman with a magnet implant plays around with small metal objects. A paper clip sticks to her finger, also a coin. She plays around with a string of small metal balls that stick to her finger. She shows that the implant can be useful when picking up small screws from laptop for example. 15. Paper clip, small metal balls, coins, screws. 16. Unknown

Abstract	A woman with magnet implant plays around with small metal objects.

V108 https://www.youtube.com/watch?v=6uCCgHMGYrI "Magnetic implant demonstration: iron powder" White North 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how a magnet implant reacts to another magnet 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Left hand middle finger, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man with a magnet implant demonstrates how a small magnet with two poles reacts to his implant. First, he hovers other the magnet and the magnet is pulling away from his finger. Second time he flips the magnet when now it sticks to his finger 15. Small magnet with two poles 16. Unknown
Abstract	A man with a magnet implant plays around with a small magnet with two poles

V109 https://www.youtube.com/watch?v=hAZvmQu533I "Magnetic implant demonstration: repulsion&attraction" White North 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	 1. To demonstrate how a magnet implant reacts to iron powder 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	 4. Magnet 5. 1 6. Left hand middle finger, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	 7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	 13. Home 14. A man with a magnet implant demonstrates how iron powder sticks to his finger when he hovers over it. Then he removes the powder from his finger with a stronger magnet than his implant 15. Iron powder 16. Unknown
Abstract	A man with a magnet implant plays around with iron powder that sticks to his finger

V110 https://www.youtube.com/watch?v=cYZzE0xzHwI "Magnetic finger" DarthSpanky 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive	 1. To play around with small metal objects 2. Positive 3. English

3. Language	
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. Magnet 5. 1 6. Left hand ring finger tip, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Female 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A woman with magnet implant plays around with small metal objects. A string of paper clips sticks to her finger and she can pull it up. She also gently places her finger on a stack of small nails that stick to her finger as well 15. Paper clips, nails 16. Unknown
Abstract	A woman with magnet implant plays around with small metal objects

V111 https://www.youtube.com/watch?v=ORDjQU5pBc0&t=3s "Boarding a flight with an NFC implant" Andreas Sjöström 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to board on a plane with NFC implant and how to implant it yourself 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g.,	4. NFC 5. 1 6. Purlicue – left hand, the implant is not visible

fingertip, top of the wrist, purlicue	
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Middle aged 8. Male 9. Sweden 10. Unknown 11. He's always on a look out for innovation. For him it's interesting to experiment with new technology. 12. He thinks it's worth it to have it as he is experimenting with the implant
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Airport 14. A man with a NFC implant enters a SAS lounge and places his hand on a NFC reader that confirms hid ID and he's able to pass. He also boards the plane only with his implant as a boarding pass and ID. At the end of the video he shows how he implanted the chip in his hand. 15. NFC reader 16. Doesn't need to use a boarding pass or his phone to go through the airport, the implant doesn't use batteries. Thinks that in the future people will have small electronics as part of their body.
Abstract	A man with a NFC implant demonstrates how to pass through security and board a plane in the airport

V112 https://www.youtube.com/watch?v=8YtLUpQWEjE&t=3s "NFC Implant | Introduction & Frequently Asked Questions" Nick Leijenhorst 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about a NFC implant and answer frequently asked questions 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g.,	4. NFC 5. 1 6. Purlicue – left hand, the implant is not visible

fingertip, top of the wrist, purlicue	
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Netherlands 10. Unknown 11. Unknown 12. You can't store a lot of data on the chip. However, thinks it's a fun gimmick to have especially if working as an electric engineer or just have a interest in electronics
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man with a NFC implant places a smartphone on his left hand and the app on the phone scans and finds his implant. Then he shows how store data on the chip by using an app. He writes his contact info and stores it on his implant. He demonstrates that one can use the contact info stored on the chip by letting other people to scan the implant and store the data as a new contact on their phone 15. Smartphone 16. Don't need to have a wallet or keys
Abstract	A man with a NFC implant talks about his implant and how he uses it

V113 https://www.youtube.com/watch?v=1a2_sdwhF5A&t=375s "NFC chip implants are a bad idea" Andreas Sjöström 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about why it is a bad idea to get an NFC implant 2. Negative 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue – left hand, the implant is not visible

User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Middle aged 8. Male 9. Sweden 10. Unknown 11. Experiment with this type of technology 12. He gives reasons why it is a bad idea to get an NFC implant: 1 – it doesn't solve the problem. One can have an NFC card or on the phone and it works fine. It also not that common to lose keys or phones. 2 – NFC chip doesn't really work well. NFC readers expects to read from a flat surface therefore it doesn't pick the implant that well when the chip is cylindrical and under the skin. 3- it takes much more time to read the implanted chip than a boarding pass when being at the airport. 4 – serious health risks such getting an infection while placing it in, or when removing it. In addition, the NFC might be cancerous. However, he does believe that biohacking is going to a part the future, but the implants are going to be more valuable. For example, live record of blood stream preventing disease
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man had a NFC implant and talks about why it is a bad idea to get such an implant. No interaction just him talking 15. None 16. Unknown
Abstract	A man had a NFC implant and talks about why it is a bad idea to get such an implant

V114 https://www.youtube.com/watch?v=L04aTvdk06g "NFC Light Implant Demonstration" Aviin 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate an NFC light implant 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC	4. NFC 5. 1

5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	6. Right arm, the implant is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has an NFC light implanted in his right arm. He places a smartphone close to his implant and a small red light starts blinking under his skin 15. Smartphone 16. Unknown
Abstract	A man with a NFC light implant demonstrates how it's working

V115 https://www.youtube.com/watch?v=2GgncP41rJ4 "Using the NFC chip implant as an ICE tag" Patric Lanhed 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to use a NFC chip as an In Case of Emergency tag 2. Neutral/Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue right hand, the implant is visible
User Characteristics: 7. Age group: e.g. young adult (18 -	7. Adult

30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	8. Male 9. Sweden 10. Unknown 11. Unknown 12. Thinks it's very neat
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has an NFC implant. He places his phone on his right hand and his info for In Case of Emergency pops up on the phone screen. 15. Smartphone 16. Unknown
Abstract	A man with a NFC implant demonstrates how to use a NFC chip as an In Case of Emergency tag

V116 https://www.youtube.com/watch?v=k-siUtXSdV8 "Using NFC Implant to Login to My Desktop" Chrylix Gaming 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how to login into a desktop computer with NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue left hand, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown

12. Overall impression/opinion of having the implant (concerns, regrets etc.)	
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has an NFC in his left hand, he places his hand on a reader and his computer authorizes his chip 15. Desktop computer, NFC reader 16. Unknown
Abstract	A man with a NFC implant demonstrates how to login to a computer with a NFC reader

V117 https://www.youtube.com/watch?v=Ud75q6QCteM "motorcycle starter electronics for NFC implant" Lance Vick 2013

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how a system to start a motorcycle by using an NFC implant works 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue left hand, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage	13. Home 14. A man has an NFC in his left hand. He shows

14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	that he build a system that contains of NFC reader and a relay that is used to start a motorbike. He places his hand on the reader and it turns on the rely 15. NFC reader, a relay 16. No need to have a key. Problems- extra hardware is required
Abstract	A man has an NFC in his left hand. He shows that he build a system that contains of NFC reader and a relay that is used to start a motorbike

V118 https://www.youtube.com/watch?v=WeIqDlaatp0 "xNT NFC installation result" Daniel Einspanjer 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate how the installation of a NFC implant looks after a month 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue left hand, the implant is visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. He doesn't like that it's visible and you can feel it if you touch on the surface, but it doesn't feel uncomfortable. The placement of the implant makes it a little weird for him to use a door lock but it NFC works
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Vehicle 14. A man has an NFC in his left hand. He talks about his implant after it was installed a month ago. No interaction just him talking 15. None 16. Unknown

Abstract	A man has an NFC in his left hand. He talks about his implant after it was installed a month ago

V119 https://www.youtube.com/watch?v=NsEESrLZfxk "xNT First Use" Tim Cannon 2014

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the first interaction with NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue right hand, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has an NFC in his right hand. He places a phone on his hand, has to a wait a minute and a video of him getting an implant is shown on the screen 15. Smartphone 16. Unknown
Abstract	A man has an NFC in his right hand. He shows his first use of the implant which is scanning his hand with a phone that shows a video

V120 https://www.youtube.com/watch?v=Ii5PukveU9Y "How I Use My Chip" Nick Garza 2015

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of a NFC implant 2. Positive 3. English
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue left hand, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Young adult 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Home 14. A man has an NFC in his left hand. He's carrying some boxes with both hand and going up the stairs. He then approaches a door and comes closer with his left hand to a smart door lock that reads his implant and unlocks the door 15. Door lock 16. No need for keys
Abstract	A man has an NFC in his left hand. He demonstrates how to unlock the door with his implant

V121 https://www.youtube.com/watch?v=ycULPFVvBjk "My first day as cyborg" Juha Lilja 2017

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To demonstrate the use of a NFC implant 2. Positive 3. English
Device usage in video:	

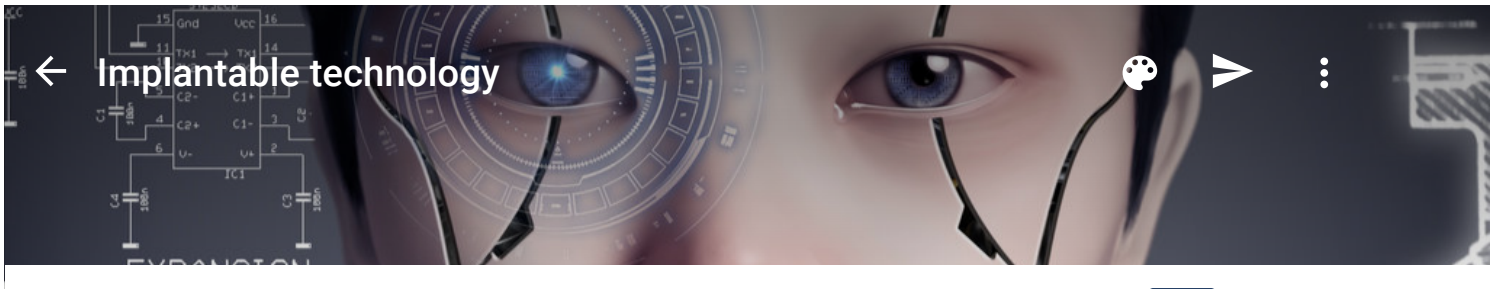
4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue left hand, the implant is not visible
User Characteristics: 7. Age group: e.g. young adult (18 - 30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	7. Unknown 8. Male 9. Unknown 10. Unknown 11. Unknown 12. Unknown
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Work? 14. A man has an NFC in his left hand. He places his hand on a reader and he need to adjust it a couple of times before the reader can scan his implant and unlock the door 15. NFC reader 16. No need for keys
Abstract	A man has an NFC in his left hand. He demonstrates how to unlock the door with his implant

V122 https://www.youtube.com/watch?v=OOSoWgK8Zls "Livet som cyborg" Elektronikmesse E-18 2016

Video Characteristics: 1. Video Purpose 2. Video Emotion: negative or positive 3. Language	1. To talk about his life as a cyborg 2. Positive 3. Danish
Device usage in video: 4. Type of implantable device(s): e.g., RFID, magnet, NFC 5. Number of devices 6. Location of the device(s): e.g., fingertip, top of the wrist, purlicue	4. NFC 5. 1 6. Purlicue left hand, the implant is visible when the skin is pinched
User Characteristics: 7. Age group: e.g. young adult (18 -	7. Young adult

30 years), adult (30 - 40 years) and middle aged (40 - 60 years) 8. Gender 9. Location? (the part of the world) 10. Frequency of use 11. Motivation for having the implant 12. Overall impression/opinion of having the implant (concerns, regrets etc.)	8. Male 9. Denmark 10. Unknown 11. He was interested in implanting technology that is non-medical and how he could use it for every day. Also, how it would affect him as a human being 12. Thinks it's like talking machine language in a way
Type of interaction: 13. Context: e.g., home, vehicle, office, garage 14. What is the implant used for 15. Use of external objects: e.g., smartphones, locks, metal objects 16. Opportunities and problems	13. Conference 14. A man has an NFC in his left hand. He talks about his implant and what he uses it for. He says that he doesn't use it that often on daily basis. He talks more about ideas what the implant could be used for in future. No interaction just him talking 15. None 16. Unknown
Abstract	A man has an NFC in his left hand. Talks about his implant and what it could be used for

5.2 SURVEY RESULTS



QUESTIONS RESPONSES 68

68 responses

Not accepting responses

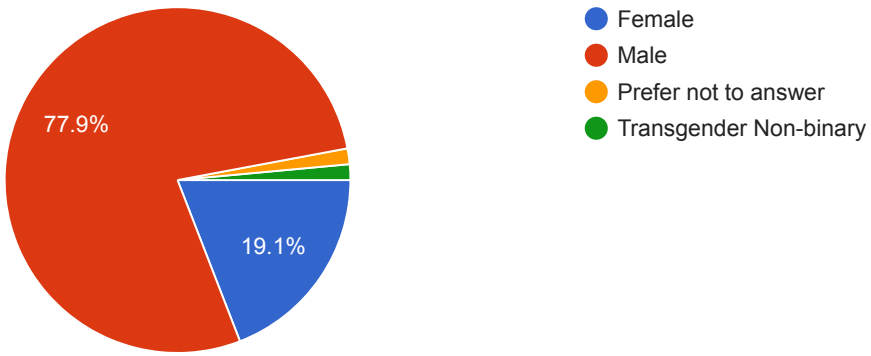
Message for respondents

This form is no longer accepting responses

SUMMARY INDIVIDUAL

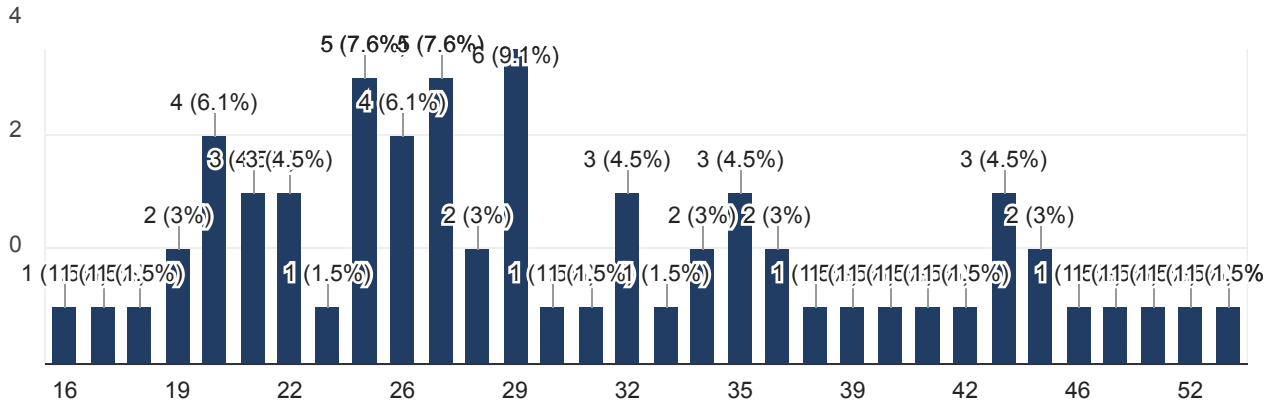
Gender

68 responses



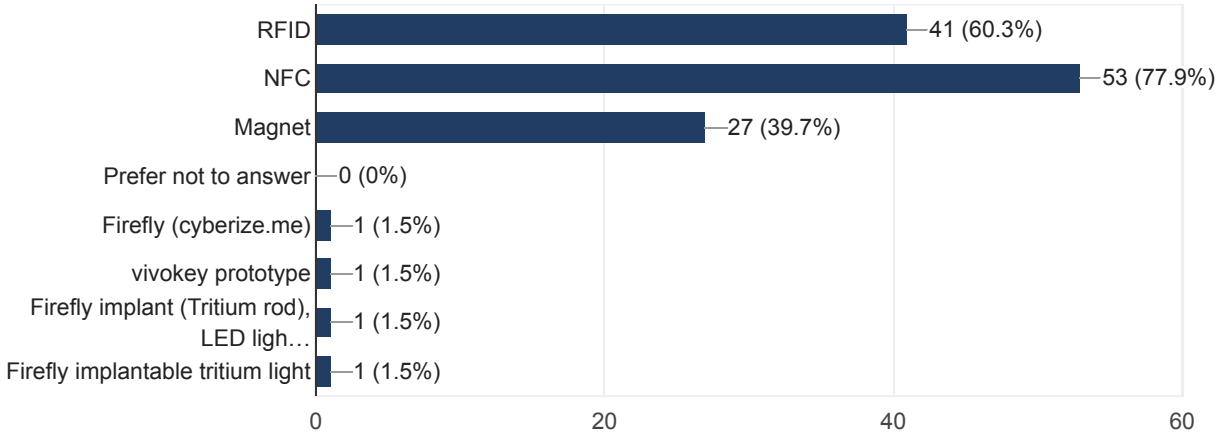
Age

66 responses



What kind of implant/s do you have?

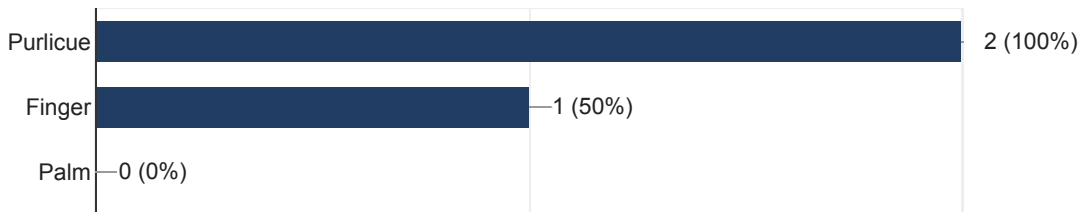
68 responses



Where is your implant/s placed?*

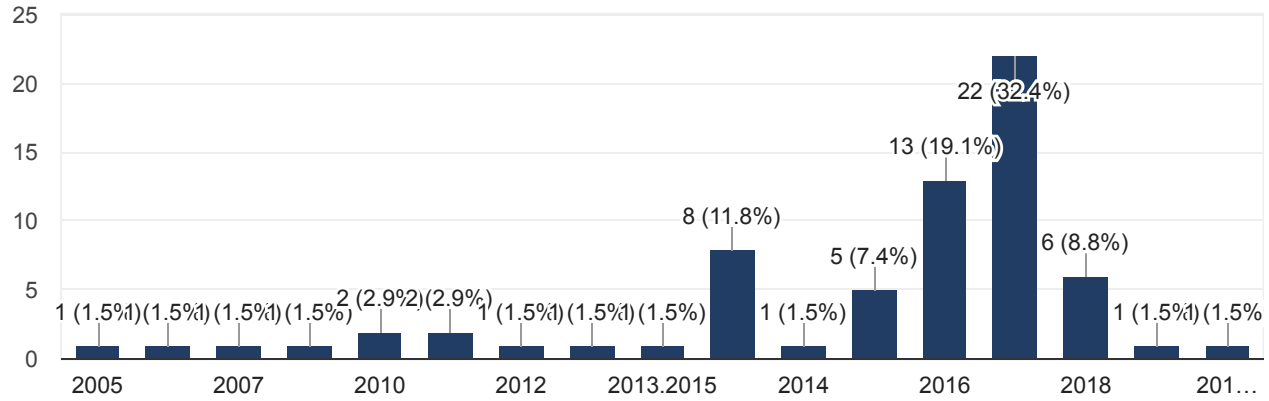
2 responses

*Authors note: the rest of the responses were gathered via e-mail.



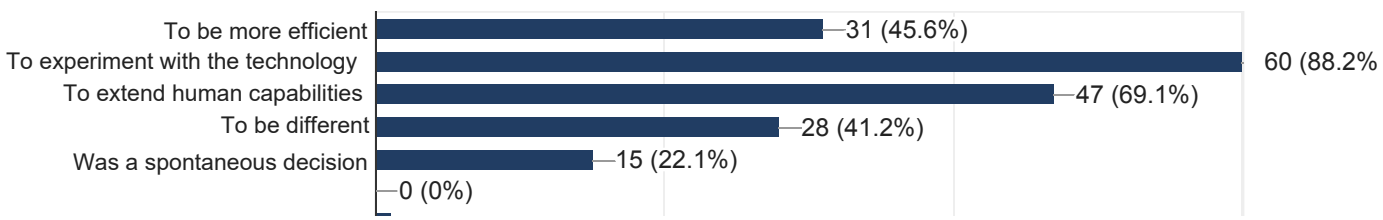
When did you get your implant/s? (The year)

68 responses



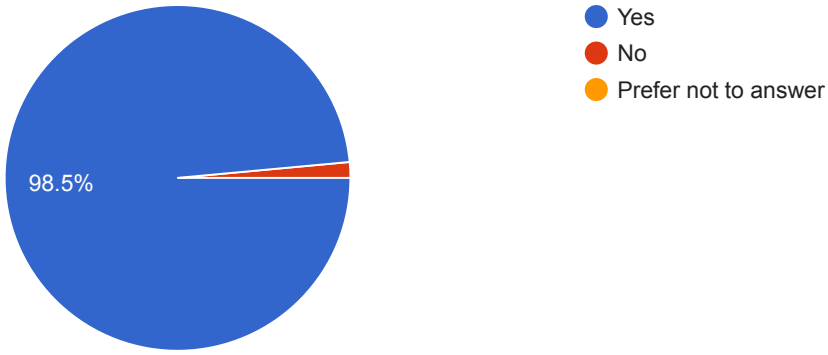
Why did you get the implant/s?

68 responses



Do you still have the implant/s?

68 responses



If you answered No to the previous question, please explain why.

3 responses

Removed the magnet due to it breaking down over time
Magnet migrated and was removed
i have had many in and out. i test prototypes on myself. i have kept my original implant from 2005 though.

What are your thoughts about your implant/s?

68 responses

I love them (2)
not that useful...
I like them, all 5
excelent

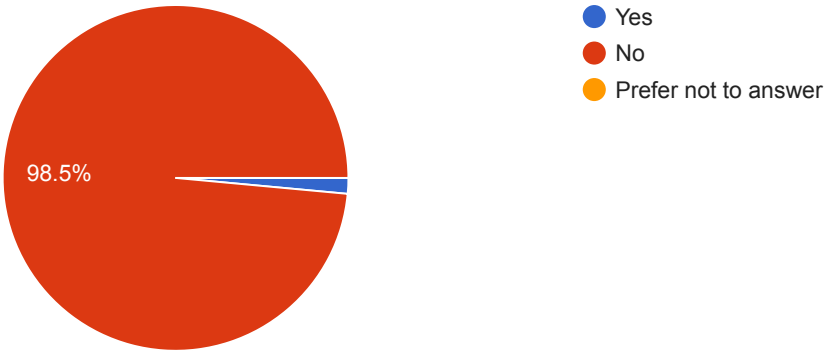
Very recomended. Can't imagine my life without once you used to using them
A bit of a gimmick, but still cool
Fun, wish there was more applications for it
I've written a thesis on them... I have a few...
Er vild med den. Utroligt underholdende og spændende at opleve noget som elektromagnetiske stråler på en fysisk måde.
Nice little gimmicks that don't really improve my everyday life but give me ideas/projects to write articles about, experiment or simply show off a bit once in a while and inform people about technology and bodymodding.
It is a plaything that never the less explores the vast possibilities of human augmentation in the future to come. It is a tiny and almost useless seed, that reminds me what we are capable of. Augmentation is going to be huge.
It's cool
I like it a lot it’s really interesting to feel it react to certain things
I like it. It's cool to be able to feel magnetic fields, and it's a nice party trick to be able to lift bottle caps and such.
Pratique
I work with metal in my career and use my magnet daily.
They're useful.
I think they are an interesting concept and I believe that it's necessary for some trailblazers to take the plunge and experiment with them before they become mainstream- as someone in the infosec field I saw it as a very interesting opportunity to experiment with NFC.
I am very happy that I've gotten both implants, but my magnet has shifted after a lifting accident, and is nearly unusable. I've been wanting to get it removed, but haven't had the opportunity to travel to CPH from Aarhus to get it done properly. It used to be great for party tricks! My chip is fun and currently holds my professional business card... I just rarely run in to people who know how to work the NFC-reader on their phone, rendering it kind of useless at the moment.
I think they're very useful and a unique experience.
It is amazing having technology in the body, playing with it, and it is much safer to locking / unlocking your computer / phone with NFC.
As expected
They are quite fun but not that usable imho, I am able to start my motor cycle with one of my implants which is cool but further they are just gadgets
It s not much more than a watch worn on my wrist.
Future
The question is if AI will overpower us, or if we enhance ourselves. I'm in favour of the latter one.
I love it. Eager to get another. If something happened to this one, I would absolutely have a new one implanted.
Vert handy
I use them all daily. 125khz at work for the security system, NFC for my home locks, and the magnets for picking up screws and feeling current

Currently I have 15 implants; 10 RFID tags and 5 magnets. I love them.
I think it’s an amazing experience to be able to add a sense that I never had before
It makes me feel closer to things I'm passionate about. It's empowering to learn and interact with your body in that way.
Useful but limited in applications for now
I loved it and want to get a new one again.
It is more like piercing or jewelery, like no big deal. For me it is the key to office door which I can't lose (that easily at least).
Its practical, a topic for talking, why not upgrade your body?
It's a nice toy, but I want more functionality.
I like them; good conversation pieces and fun to play with. My T5577 emulator opens the doors at work which is convenient.
Glad I got them, very useful
They're kind of cool but not actually useful.
I can't imagine life without it now. Prior to Google killing off the functionality to unlock my phone with Smart Lock through NFC devices, I used that function for a little over a year, multiple times a day that it was a familiar gesture to interact with my phone. I was extremely upset when Google took away that functionality in an update and no longer have that function. Had to severely change the ways I use my implant today. Still very beneficial as I use it for networking which is great as an icebreaker. I share my business card through tapping my implant and can program it on the whim for any other tap to launch functionality that's available to me.
Useful and fun,
Nice to have
I'm happy with them, I use them almost daily and have never had issues with them.
The extrasensory abilities it provides are very interesting.
They make my life easier.
Looking to get more. Three in total.
I want more!
I'm excited about the technology
Love them, good talking point / party trick
I like them but wish they were more capable and not frowned upon by general society ie if medicine would actually get behind this
love 'em
Perfect
I don't use it as much as I would like to, and I'm having a hard time finding good applications for it. But I'm still really happy with it.
Usefull as Key for Bike Lock and a good Party Trick.
I love it for what I have it used for, a business card and unlocking various things

I love them. Was the first to implant the Biothermo chip and am one of three people with the LED prototype light.
best decision
.
Much less useful than I'd hoped.
They're fun to use and talk about
the future
It makes me more efficient
My NFC/RFID chip can help me identify myself in the future (so i need no key or cards)
could have more features
--
It's a fascinating conversation piece and makes things like opening doors at work slightly more convenient. I'm interested in the concept and idea of biohacking, and I like to talk about my implants to make people aware of new technologies like this that could be the first step to true transhumanism. On a much lighter note, if I hold the finders on my left hand at the right angle and flex my middle finger, I can make the chip visibly roll over the tendon and press against my skin, which really grosses out one of my student workers.

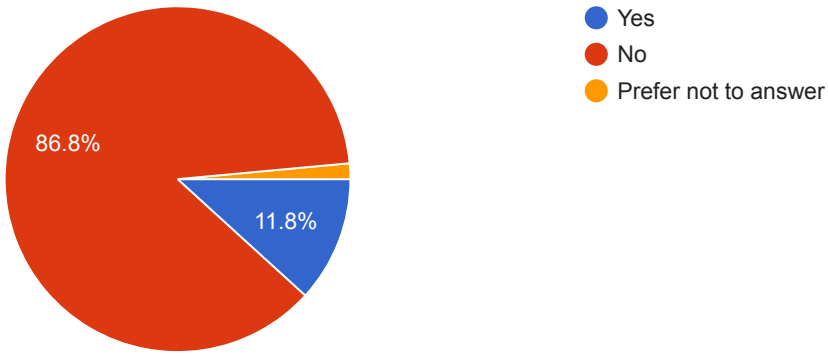
Do you regret getting the implant/s?

68 responses



Do you have any concerns regarding security, privacy or ethics?

68 responses



Please explain your choice.

68 responses

a magnet is passive, it does not contain anything
Security: Just as safe as any other RFID devide, Privacy: See security, Ethics: My body my choice
No problem
@work asked me not to tell everyone as they see it as potentially a security flaw. As I'm amber to copy all access cards without having one.
I am concerned about those things, but not for my uses of the implants
No explanation
I do not.
Den eneste bekymring er hvor længe den holder, og om den skulle gå i stykker og udlede noget i blodet
I don't store any important information on my NFC implant. Neither do I see any ethical problems with expanding the human body with technology. We do it every day externally with smartphones, smart earbuds and assistants - so why not internally?
Not with this tiny NFC tag :) It is a passive chip. The worst that can happen is if I lock it accidentally. It is far easier to skim or steal a credit card.
Just an RFID / NFC chop to use android pay,so no
As I only have a magnet there aren't A lot of security issues. I don't feel it's an rtichs problem either
Magnets don't really have any security or ethics issues, it's just metal.
Je n est pas peur de la sécurité étant donner que je galère à badget m'a résidence
This doesn't apply. No one knows I have it unless I make it known.
I'm not paranoid

I am confident that I, and the likeminded people in my closest circles, are being knowledgeable and responsible in regards to all three issues.

I think future cybernetic implants that are more complex than these will have to be designed with security in mind and to give the user control over their data.

the range is so small, someone must touch you with the phone to read it :)

They are not secure and nor do they have any privacy info.

Since they are only readable when you press a device against your skin you will notice it if someone tries to ‘read’ you without permission. GPS tracking is still not possible so no privacy concerns on my end. Since there is still no ‘general’ use for it there are no ethical problems either, apart from the people you’ve told and jokingly say that you are a freak

Paranoia will distroy ya. Back in 1245 it was considered alien to drink out of a bottle. Jesus, you never know, what fluid might be in it!! No smell, no optics...please shoot me instead of forcing me to use a bottle.....to be continued.

I said "No"

Biometric data (face- / iris-scan or fingerprints) are basically unencrypted private keys. With VivoKey we'll get a solution that is more secure then ever. https://vivokey.com/learn-more.html

I don’t have any major ethical concerns with human augmentation in general. I might be opposed to specific usages or procedures, but I haven’t heard of any that offend me. The magnet obviously is not much of a security/privacy concern.

Always keep on Security and privacy

It's pretty secure and ethics wise anyone can do what they want with their own body imo

This would be a very very long explanation, but tech has not advanced to the point where implants would be a viable means of privacy invasion yet

Yes, I do have concerns regarding security, privacy and ethics in general, not specifically related to the implants. This is one of the reasons why I experiment with my implants, to learn more about the technology and the security, privacy and ethics aspects before these implants are as common as piercings and tattoos. Another reason is to create more privacy and security thanks to one of them (VivoKey prototype implant, can be used to encypt/decrypt/sign data, generate OTP authentication codes, etc).

I’m not sure of the contex here

.

The read range is so small it’s impractical to hack. No one is going to cut off my hand to access my office and they can’t be used for track

I don't think it applies to magnets

it can only be read from very close distance

I don’t have any concerns than the security of the chip itself. Other people corrupting the chip and making it unusable as an example

If we can improve something, we should do it.

In general? Sure. About my implants? No.

Why would there be an ethical problem? Security? If they want to open my house they just pick up a rock from the garden.

It is not unethical so long as getting implants is freely chosen & not mandatory, and if you have a cellphone that is much less secure and contains much more private, vulnerable data than any implants do.

I am concerned of security & privacy. I prefer not to tell many people about it so they won't know which location it is in. I am worried of any moments I would be arrested and at one point nervous of if someone needed to access my phone. If I refused to open the phone and if officials knew of my implant that could unlock my phone prior to Google removing the feature from my android device, they could force me to unlock my phone with my implant. I am concerned of security, as there are devices that could pick up my frequency of my implant within a short range. I have considered making rfid blocking gloves to protect myself.

Inverse Cube Law with relation to antenna design and coupling distance means that being able to identify a person by an implant can only be done in extremely close proximity and even then can have issues with 'coupling' and obtaining data, and then the data storage type and encoding. security is already pretty impressive, EMV is proof of this. Ethics are something that will vary from person to person, and I think that in time this kind of technology will become much more commonplace, but it wont become a mandatory technology in the civilised world.

More security the better

Security wise, I'm honestly more at risk of someone climbing the outside of my apartment building several levels and breaking a window than figuring out how to hack my electronic lock or scan my implant to get it's code and figure out how to use that.

Ethics, no problems there people are nutters.

Privacy,

Again no issue,I know how the thing works, it's not physically possible for you to be tracked effectively with it.

People think "oh you just need a more powerful reader" no.

That's not how it works.

The chip can only respond with so much power.

Not to mention the antenna coupling problems you would face.

Why would I?

I am christian, and my family and friends were worried i was getting the mark of the beast. But once i explaned ut to them they stopped bugging me about it.

If you understand the technology, you can understand it's faults and perks.

These devices extend my capabilities

Its locked they cant really do much

Passive so it’d be hard to not notice someone scanning it. Also just as vulnerable as a non implanted card.

Security is controlled by me, it would be very difficult to do anything to it. Privacy is also controlled by me. As far as ethics, it’s completely ethical so long as it is done responsibly and willingly, and not forced on anyone.

security depends heavily on use context, as does privacy. personal use devices pose no greater risk to security than having windows in your home. an attack on the implant would require a targeted attack against you personally, and if that's the case there are other easier ways to accomplish said goal (e.g. getting into the house by breaking a window instead). fact is, most all attacks are random, even house break-ins, so in a personal use context, an RFID implant with a certain security risk doesn't practically pose any more significant risk to the user than a door lock that can be picked.. i.e. how many house door locks are picked vs just kicking in the door. when it comes to privacy, personal use typically means if any logs are generated, those logs are collected and owned by you, no 3rd parties. if privacy is a concern with regard to covert reading of the implant in the wild, then that's absolutely impractical vs setting up a camera or listening for signals your phone puts out.. so again, not a relevant concern. your standard credit cards are more of a privacy concern because not many people realize that when you use a card to pay, you are letting 5-10 different companies know your location, amount you spent, the date and time you were there, etc.

for me perfectly secure

I think it would be foolish not being concerned about these things when implanting technology in my body. Currently, however, I'm not worried about any of those things with my implant, and I would not use it in a way I think could compromise my privacy for example. But I also think these topics are important for non-implantable technology.

I unterstand the Technology their is mi big Security issue, such as tracking is not possible. I am very open minded, so i don't think there is an Ethics issue. You can make everything to your Body you want. It is your Body.

I understand the limits regarding security and privacy using the implant I have, and ethics is more about personal choice, dont force it on people who don't want one.

The majority of people don't understand how RFID/NFC works at this point, though in future this may change.

j

How could my security, privacy or ethics be affected by an NFC implant?

They are mine, so only my ethics apply. No one knows I have them unless I tell them, so privacy isn't an issue.

The antenna required to pull information from or track someone with NFC would have to be massive in scale

NFC ready proximity is very short

I can manage the usage

No as it can only be read from near and can be protected by a password.

Range is too small. At the moment security implants are in developing we will see how secure they are gonna be.

--

My xEM (T5577 emulator) is set to emulate a Wiegand 26 bit HID card. I'm not concerned about my own privacy or security, but I can wave it over readers everywhere and have the chip read. It's worrying to see that so much around us (data centers, police stations, etc.) is secured with antiquated systems.

I started with a magnet because I wanted to sense magnetic fields, and I thought it would be cool to have one with me at all times. Next I decided to get the lights because I thought it would be cool to have a light at all times. Then I got implant crazy and got just about everything there is to implant because I liked them so much.

What do you think is the future of non-medical implantable technology?

68 responses

extending senses

Encryption tech, data on the body (fitness tracker), extra senses

rather

It will progress and develop

Small

No clue

Sensory augmentation/extension
medicinske implantater, i stedet for piller. Sporing. Flere sanser. Mulighederne er mange
I'm convinced it will mae its way into everyday human life/use. Since it requires "damaging" the physical integrity of the human body to a certain degree, acceptance will take a little longer than other with technologies. So it will, for a while, remain in the realm of bodymodders and slowly grow from there. I don't see us going full Deus Ex anytime soon. But small, interesting and useful applications of implantable tech will make their way during the next, say, 50 years.
Basically anything we can dream up. In the near future active implants with their own tiny power source will be where the experimentation is at.
A great medical advancement
I think it’s really interesting to see how you can extend the Human body. Implantable chips are going to be great for a lot of things. I await the day when I can pay with my finger haha
Don't want to predict the future, but something I would like to see more is aesthetic implants, like having LEDs glowing under your skin and such.
Je pense que ça vas se démocratiser comme identifiant ou même comme clés
More sensation, better vision, better means to adapt in a technology run society.
Payment and ID usage
A keyless and cashless society, sign emails with your chip, unlock all doors, your employer simply adds you to their access control system, police can scan your hand for identification.
There is a long way to go before implants like these will be widespread, if they every will be. As the technologies improve, the usability for implants such as RFID/NFC-chips will improve as well, hopefully leading to more people embracing it. But as long as Google actively removes NFC-features from Android, the road will be long and hard.
I think biohackers will create more and more complex cybernetic implants.
Hopefully there will be more implants - it is so exciting to experiment with them
Identification
I don’t think there is a real future that everybody has implants, not everybody will be willing to implement plus we have more ways of carrying data with us which are more accepted by the general public
tomorrow.
Payment application, cryptographic applications (signing, verification)
Will still be around. Co-existence.
I think it will continue to struggle for acceptance among the general public until a new procedure is invented and something (like a celebrity endorsement) triggers a large adoption period among young adults.
Adding more sensors to the implants
I think more and more people will get one
I'm looking forward to longer range, the ability to make payments, etc.
I think in the future it will become more popular to have one or multiple implants, when people realize the advantages of having them. Not having to worry about fogetting or losing keys, extra senses, etc

I think using it for medical benefit like being able to record your health patterns

I think that more technology will be developed that links the subject to themself without the use of an RFID/NFC reader, such as sensors with a response mechanism such a vibration, charge, or spin.

Payments, do more than one thing

I'm excited to see new technologies develop

The chips will be smaller and have more possibilities. The inserting procedure will probably be easier also and no special knowledge is needed for that.

Implants that can help us through the day. Implants as credit cards, cards for public transport, keys for your home etc. Also implants that contain an identification card, with for example diseases, and current medications

Brain-Computer Interfaces

Convenience and security for the very technically minded

I think it will take a while to catch on

computer/brain integration

I think we're seeing an increase of these implants now that many more people are seeing what they can do and we have been diligent to correct myths about this tech, such as the government cannot track your every movement with an RFID implant. Not possible. I feel this tech is a great extension of our bodies and can interact with our world in ways not imaginable yet. I never knew how much I wanted to interact with my phone through a tap on my body. I think it gives humans an exciting sense and brings us to a more intimate level of interacting with technology. It makes tech feel less foreign and more personable.

I still consider RFID/NFC to be medical implants, im not sure what is defined as 'non-medical'. But if it regards nfc/magnets/electronics then I would say it is the future of biohacking and will find its place in various parts of society and industry, but only if it can overcome the misconceptions of modern media and its potential realised or at least its innovation left unimpeded, then i think it can become an integral part of the future of technology.

Small

Identification and payment most likely

The human experience will continue to be expanded and improved by the development of non-medical implantable technology.

Payment processing

This is merely a stepping stone for technology. The vast majority will not get implanted, even if required. Technologies like biometric scanners will take this technology farther.

Further advancements

I wish there was more people interseted

Payment, identification, personalization, etc

I hope for lots of good things to come, but it seems dismal other than what is being done by independent bio hackers

VivoKey :)

a new era

I think it will grow and become more normalized. I've heard some things about batteries running on blood sugar, which I think will really revolutionize what we can do with implants.

I hope there will be an implant for cryptographics keys. And i would like to replace my wallet and my keychain with an implant

I hope it grows and becomes more ubiquitous, and useful in ways we might not even know

Hopefully they will become more mainstream, with more implant types on offer.

k

.

Still in the distant future, barring a paradigm shift.

yes

it is the future

We will wear an implant for d2d tasks

Identification, ID cards, payment means and keys will be obsolete.

I already use it in door entry for security areas at work for home or car opener, I pay at clinic restaurants at my job and working time is recognized by scanning and parking space can be entered by scanning. Handicapped or sick people can have information for the doctors on it. Secure payment is a thing. My cat is chipped for identification and house enty.

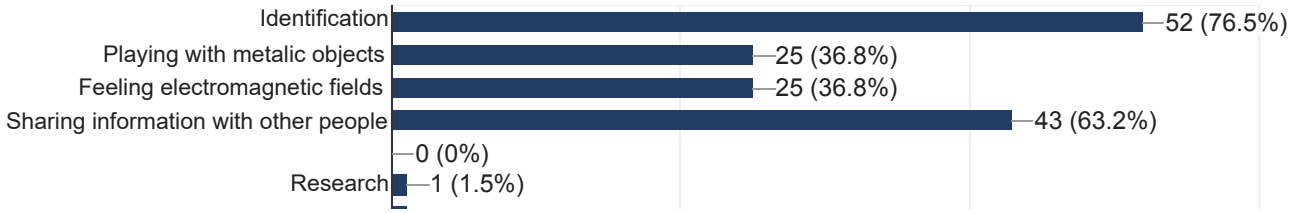
--

The answer I always give to this is that it's like a piercing, but functional rather than aesthetic.

I think some day soon we will be able to pay for things with them. Other than that I have no idea but I am excited to find out.

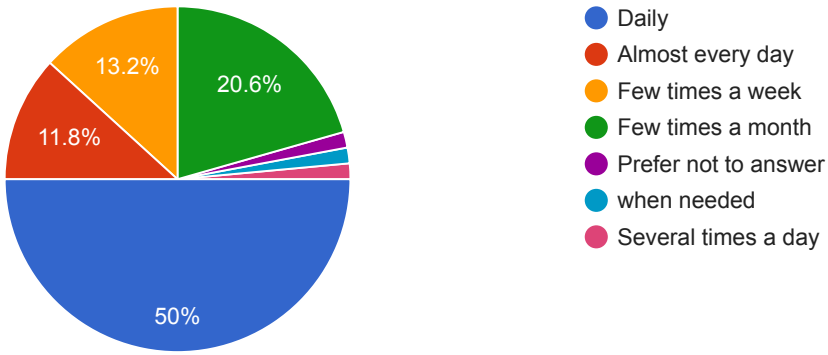
What do you use your implant/s for?

68 responses



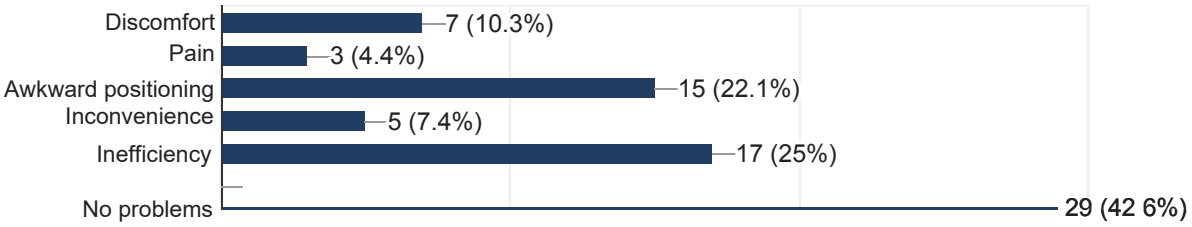
How often do you use your implant/s?

68 responses

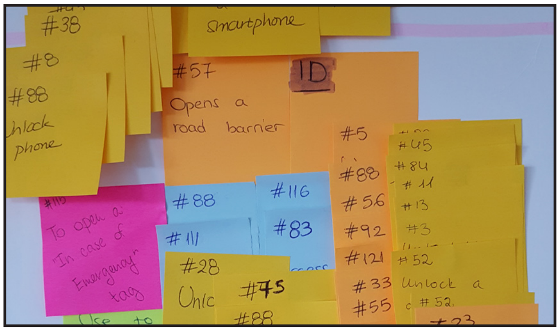


Have you experienced any problems while using your implant/s?

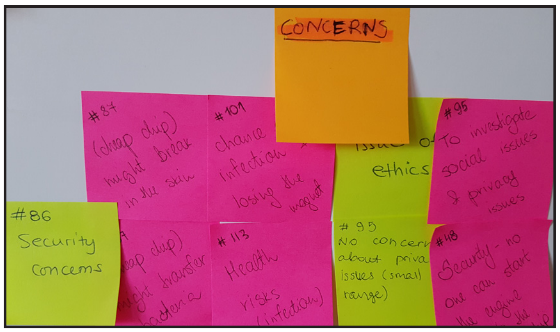
68 responses

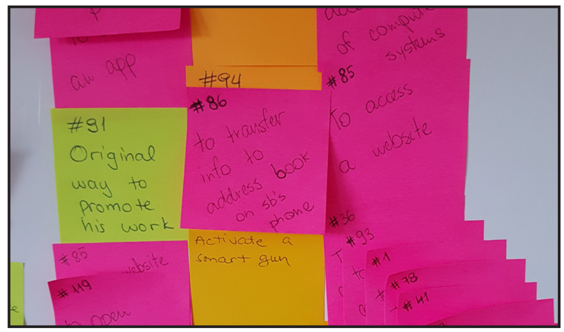


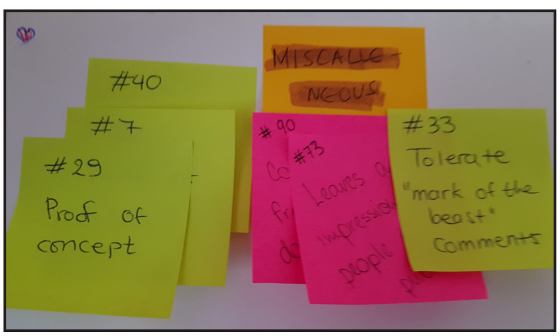
5.3 AFFINITY DIAGRAM IMAGES

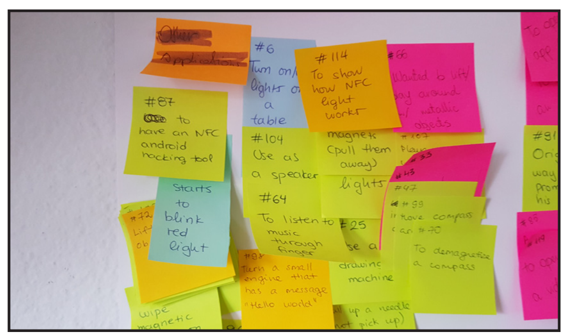

#38
Smartphone
#8
#88
Unlock phone
#57
Opens a road barrier
ID
#5
#88
#56
#92
#121
#33 Unlock a
#55
#88
#116
#111
#83
#28
#75
#45
#84
#52
To open a "In case of Emergency" tag

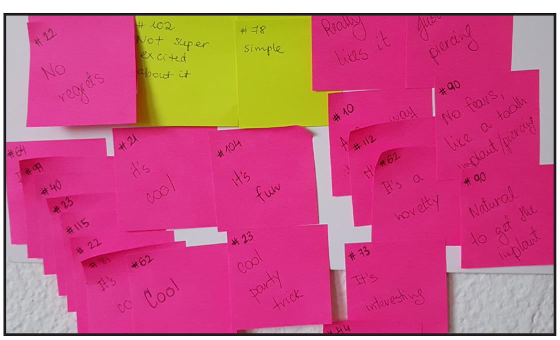

PHYSICAL / EMOTIONAL EFFECTS
#100
#23 Vibrate next to metal
#102 Tell when something is magnetic
#103
#62
#99 Feel buzzing when hovering over electronic
#10 Too much pressure - hurts
Feel electro-magnetic fields
#63

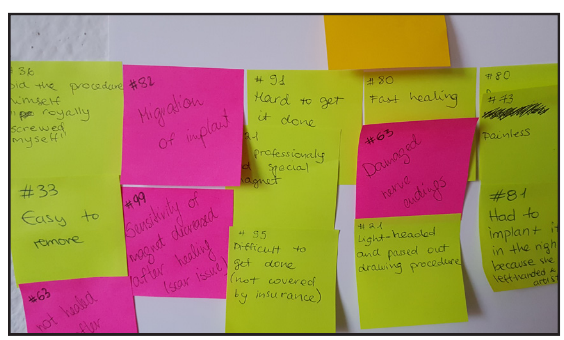

CONCERNS
#87 (cheap chip) might break in the skin
#101 chance infection losing the magnet
ethics
#95 To investigate social issues & privacy issues
#86 Security concerns
#113 Health risks (infection)
95 No concern about privacy issues (small range)
#48 Security - no one can steal

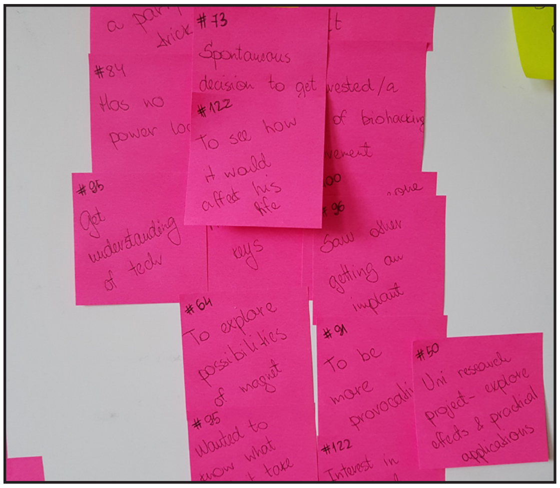

an app
of computer systems
#94
#91 Original way to promote his work
#86 to transfer info to address book on sb's phone
#85 To access a website
Activate a smart gun
#93
#119

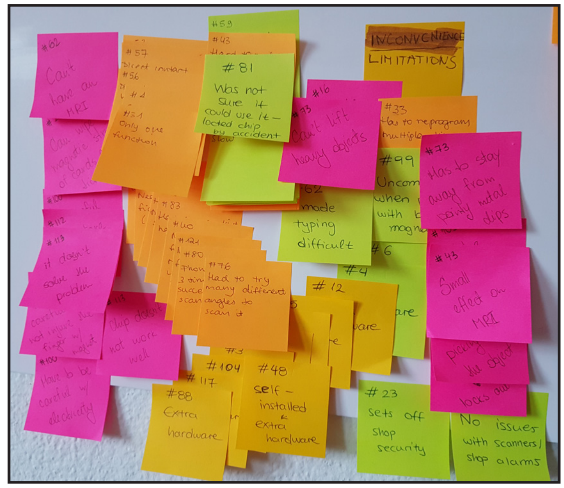

MISCALLE-NEOUS
#40
#7
#29 Proof of concept
#90
#73 Leaves a impression on people
#33 Tolerate "mark of the beast" comments


#6 Turn on lights on a table
#114 To show how NFC light works
#87 to have an NFC android hacking tool
#104 Use as a speaker
#64 To listen to music through finger
Starts to blink red light
To demagnetize a compass
drawing machine

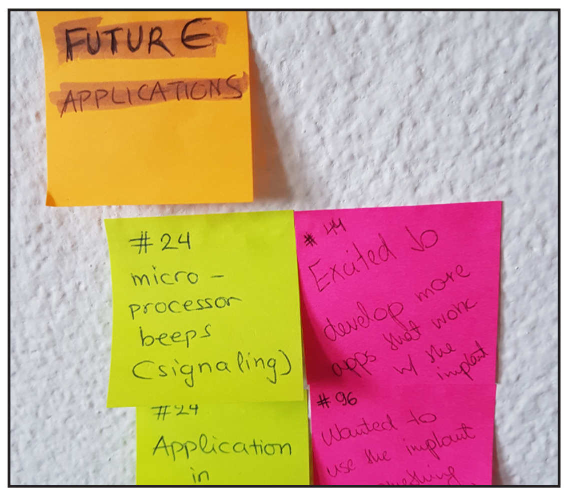

#12 No regrets
#102 Not super excited about it
#78 simple
Really likes it
#90 No fears, like a tooth implant / piercing
#21 It's cool
#104 It's fun
#62 It's a novelty
#90 Natural to get the implant
#82 Cool
#23 cool party trick
#73 It's interesting


#82 Migration of implant
#91 Hard to get it done
professionally
#80 Fast healing
#80
#73
Painless
#63 Damaged nerve endings
#33 Easy to remove
#99 Sensitivity of magnet decreased after healing (scar issue)
35 Difficult to get done (not covered by insurance)
light-headed and passed out during procedure
#81 Had to implant in the night because she


#73 Spontaneous decision to get
#84 Has no power
#122 To see how it would affect his life
#86 Get understanding of tech
#64 To explore possibilities of magnet
#91 To be more provocative
#50 Uni research project - explore effects & practical applications
#95 Wanted to

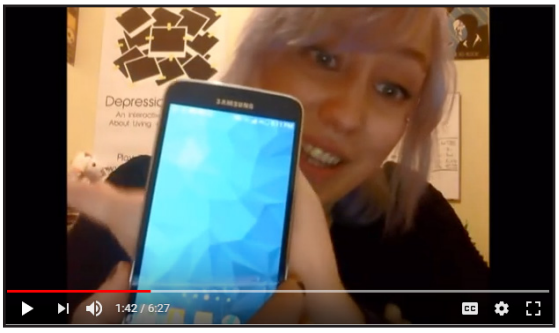

INCONVENIENCE
LIMITATIONS
#81 Was not sure it could use it - located chip by accident
#96 Had to try many different angles to scan it
#48 Self-installed & extra hardware
#88 Extra hardware
#23 Sets off shop security
No issues with scanners/ shop alarms


#61 Can still use key as well
#111 No need of boarding pass or phone at airport
#112 No need for wall or keys
#117 No keys
#88 Always have ID with you - no wallets
#2 Easy to share contacts
#47 Enjoys advantages
#41 No need for pin
#33 Convenient
#35 Can automate most phone functions
#102 Tell which way is north
#32 Fast and easy


FUTURE
APPLICATIONS
#24 micro-processor beeps (signaling)
#44 Excited to develop more apps that work w/ the implant
#24 Application in
#96 Wanted to use the implant


DIAGRAM

5.4 VIDEO SCREEN-SHOTS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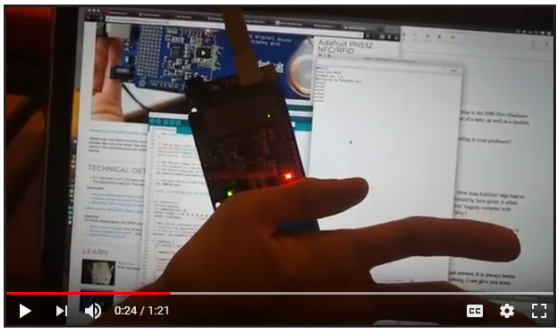
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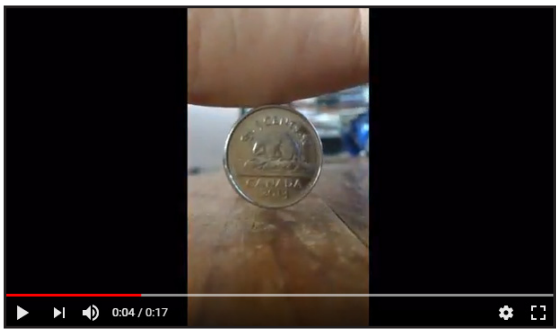
0:41 / 1:53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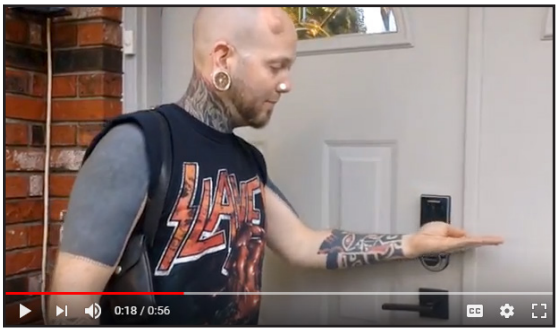
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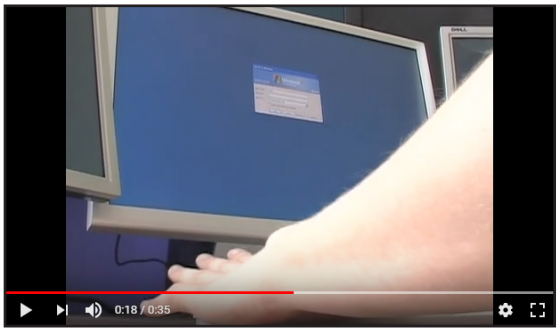
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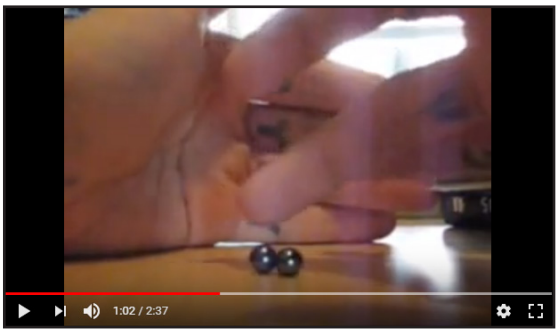
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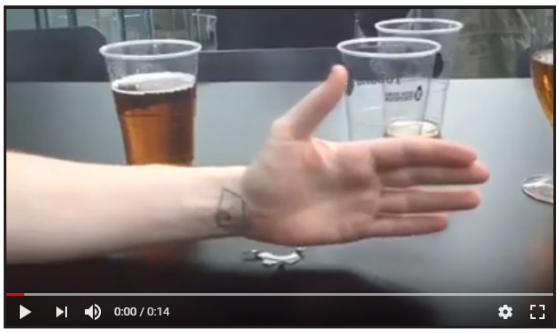
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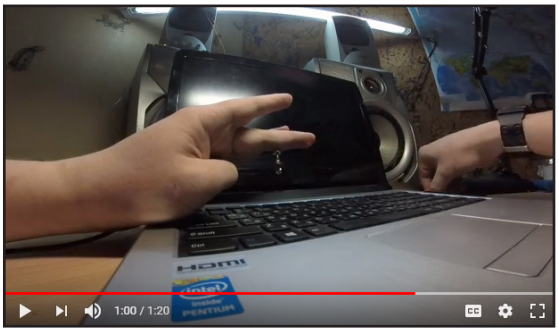
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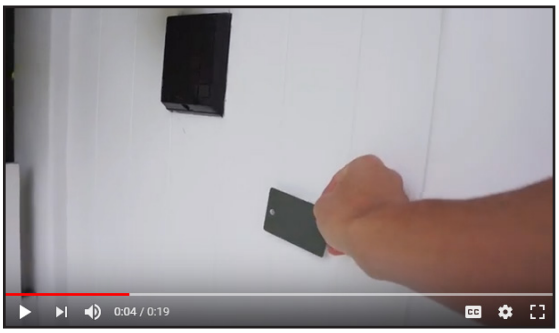
FB.com/ZWatsonPiercing
3:23 / 5:09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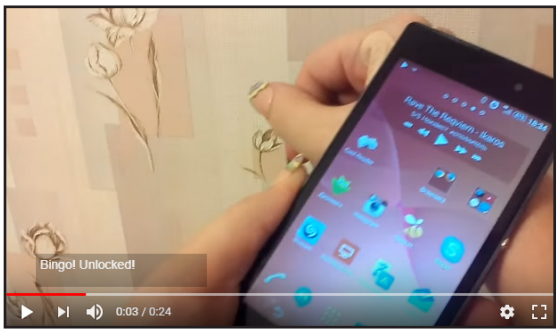
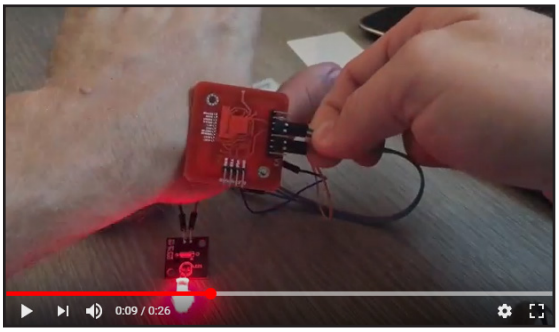

Bingo! Unlocked!
0:03 / 0:24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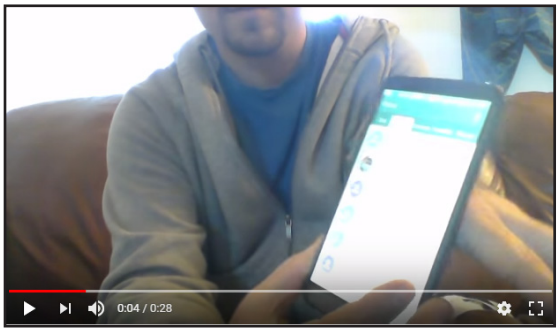
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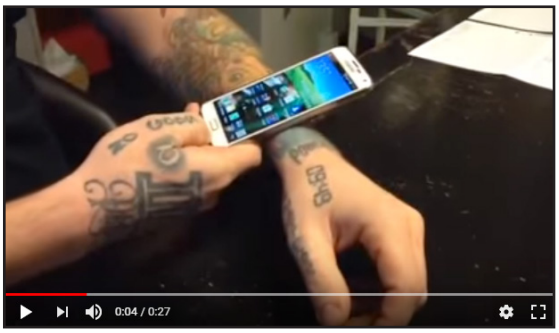
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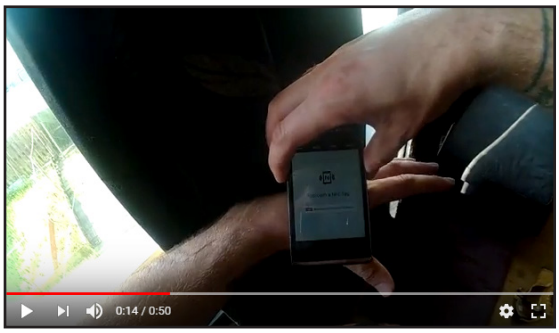
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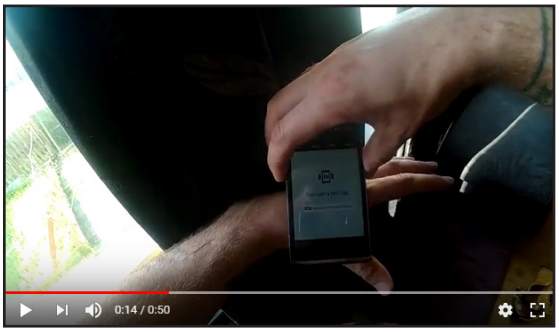
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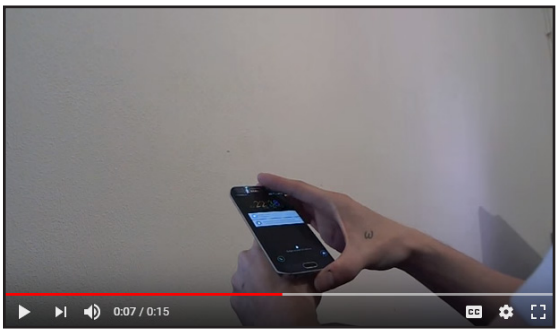
SAMSUNG
Normal Indoor Lighting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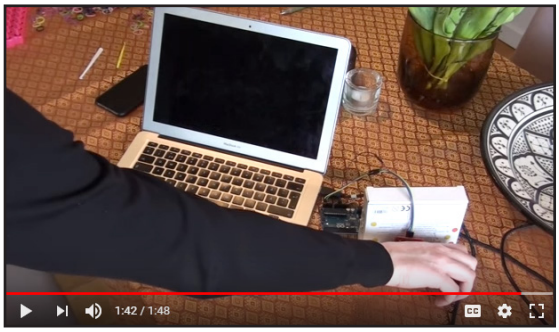
0:04 / 0:23


0:08 / 0:46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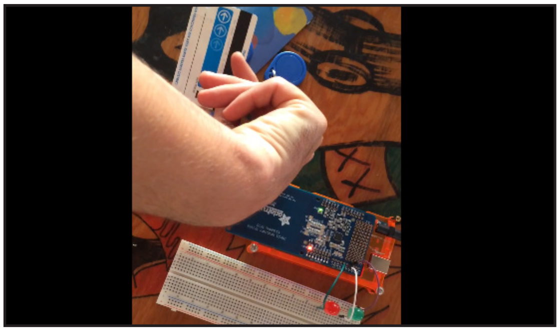
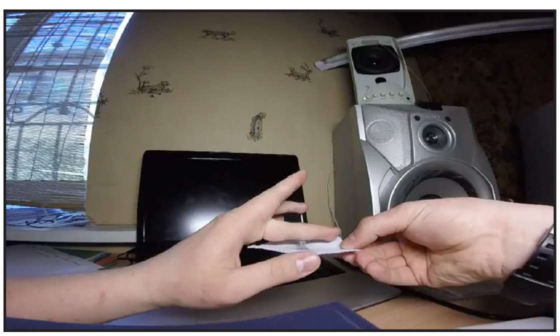
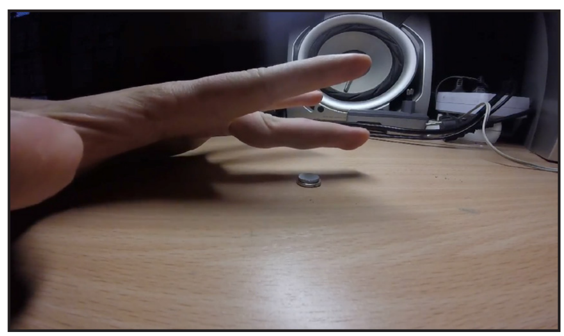
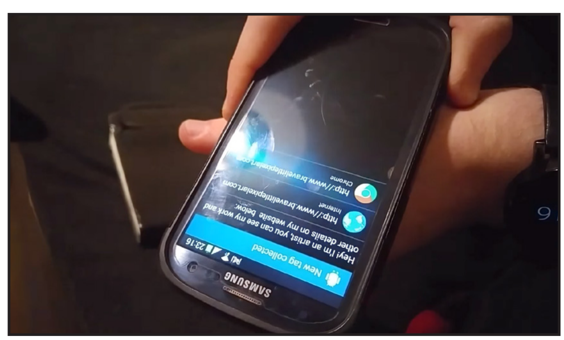
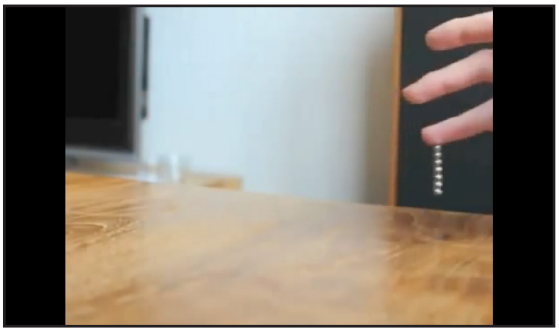
0:40 / 2:19

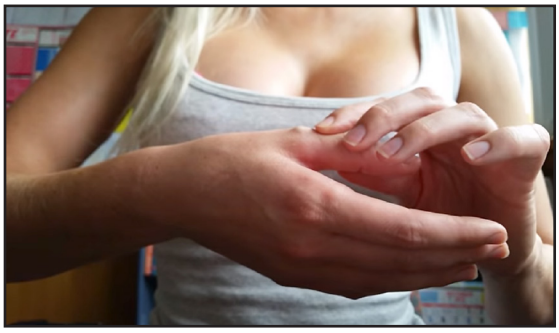


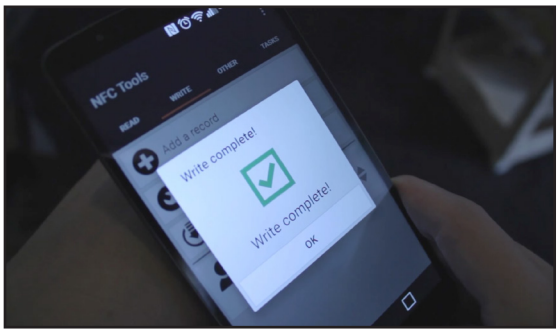


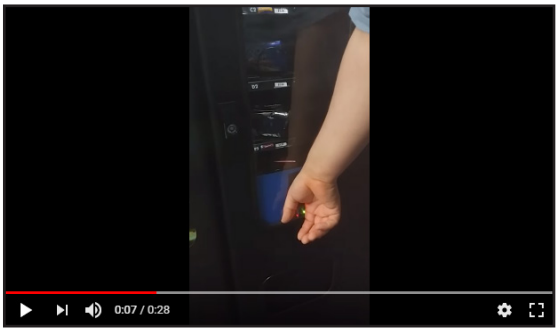



SAMSUNG
New tag collected






NFC Tools
Add a record
Write complete!
Write complete!
OK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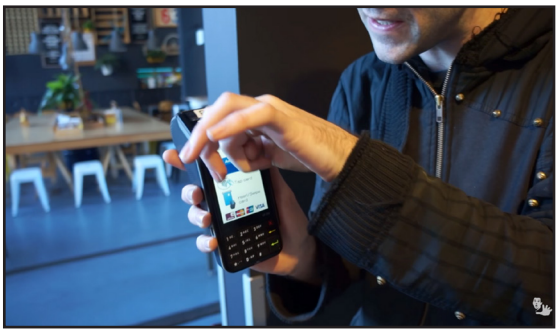
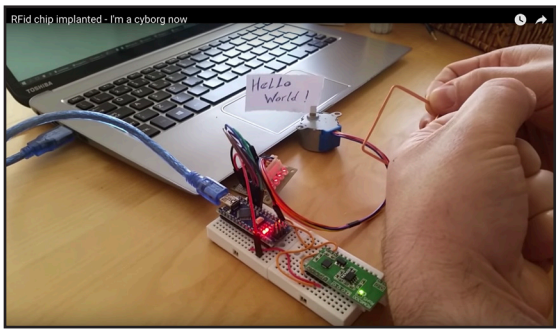
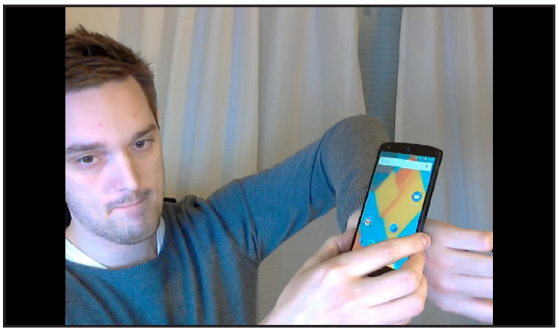
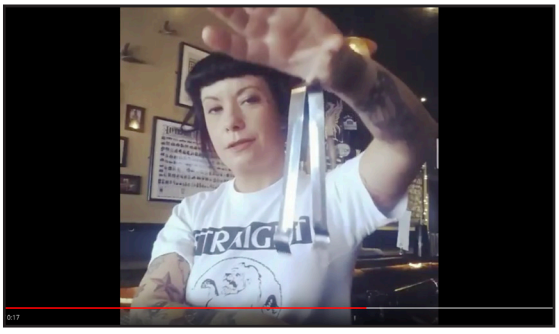
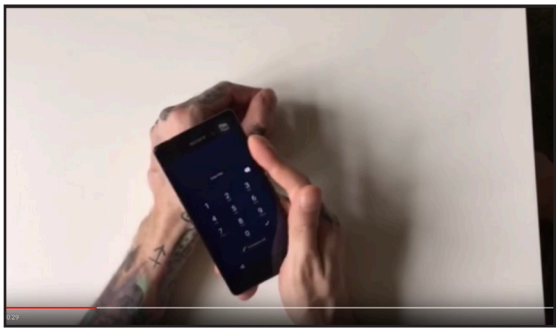
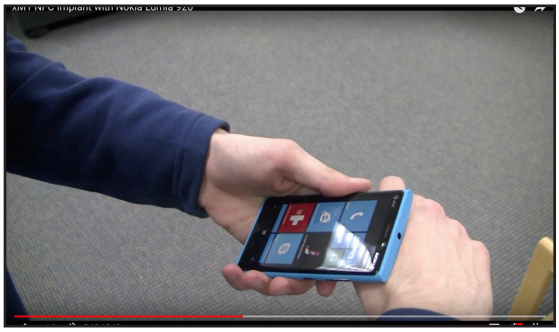


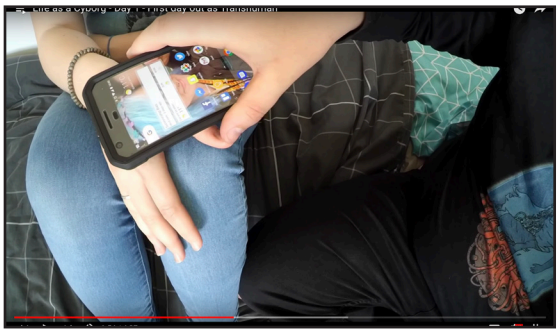

RFid chip implanted - I'm a cyborg now
Hello World !

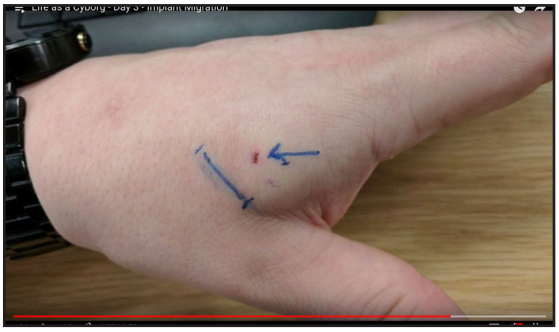


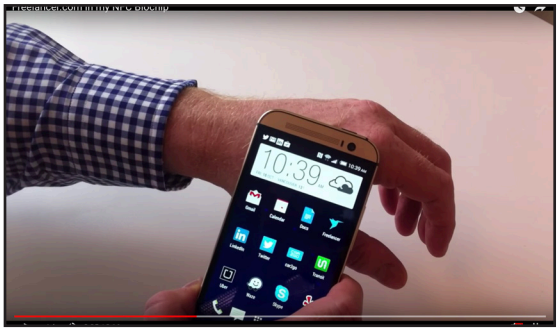


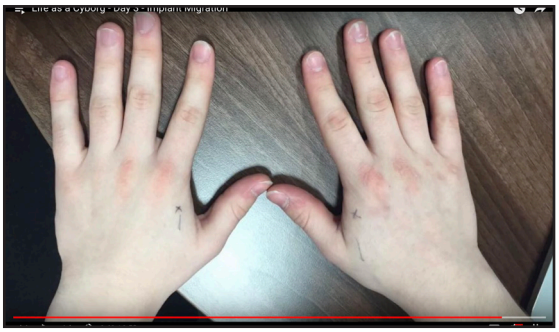


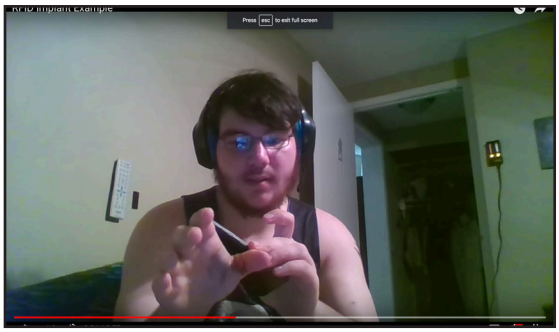


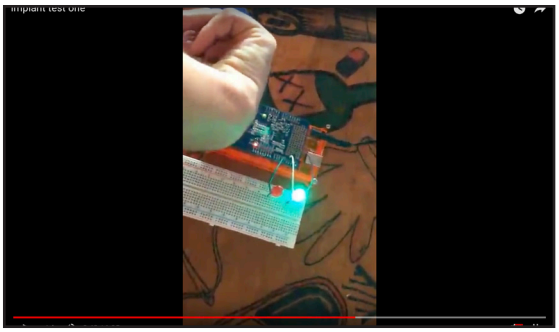


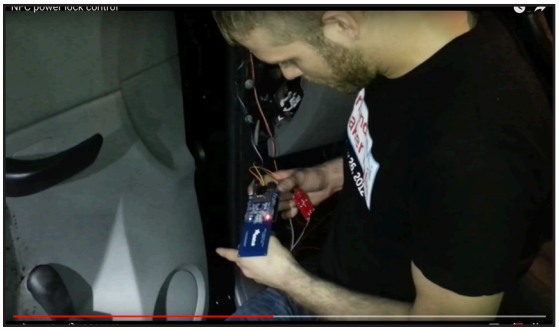


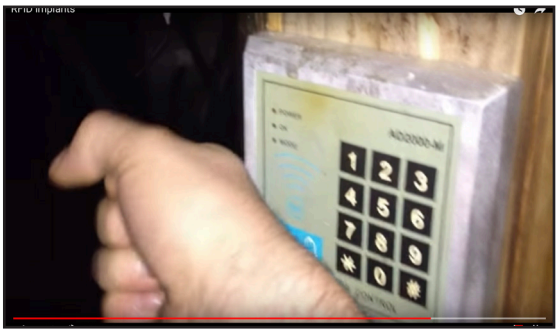






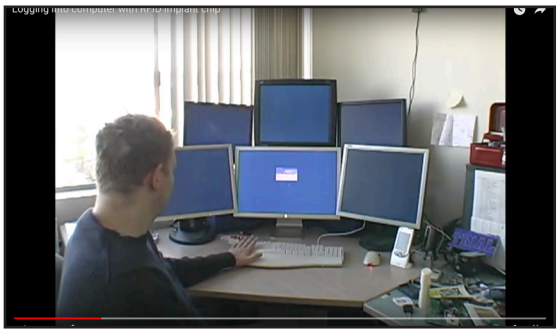




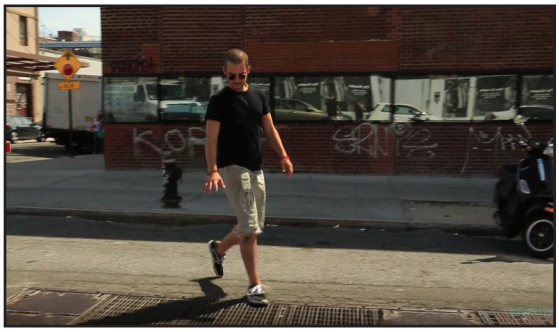

RFID implants


Useful NFC/RFID tag implant applications 3: Open road barriers


RFID front door entry using implanted tag

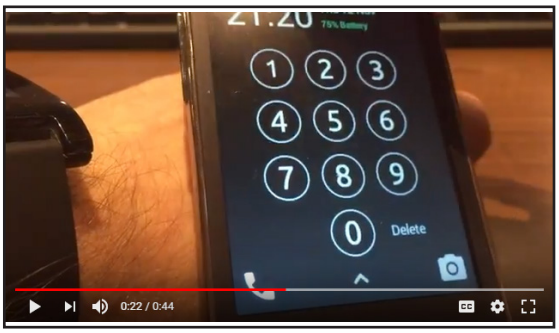

Logging into computer with RFID implant chip


TRAFFIC CONTROL
NEW YORK CITY
Runaft

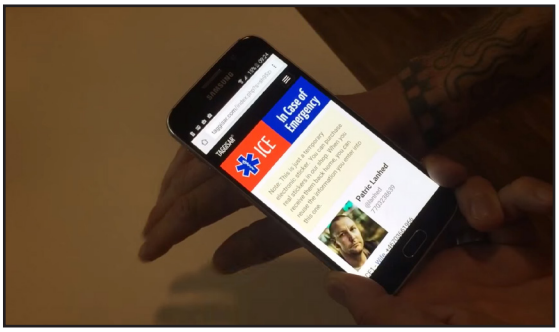



0:02 / 0:13

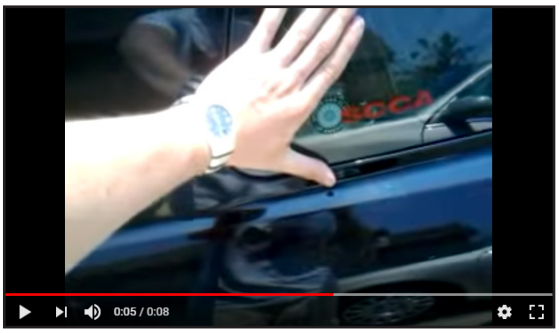

0:08 / 0:35


1
2
3
4
5
6
7
8
9
0
Delete
0:22 / 0:44


1:12 / 7:34


ICE
In Case of Emergency


7:17 / 7:34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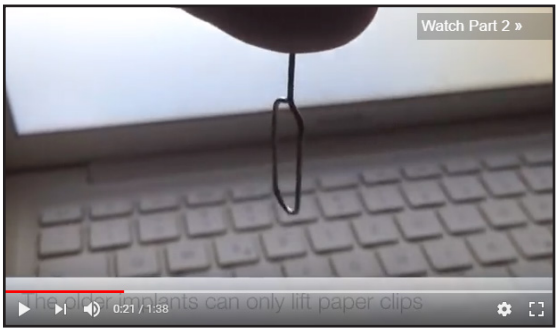
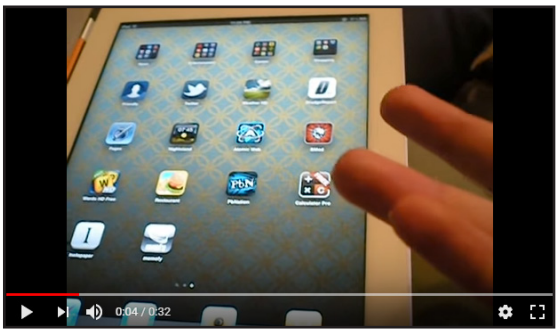
0:35 / 0:53


Watch Part 2 »
0:21 / 1:38


0:31 / 0:51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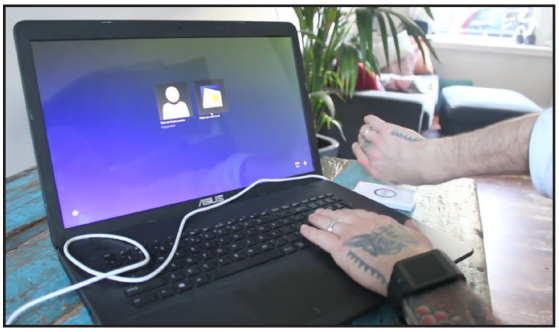
0:04 / 0:27




59-JD-TT