

A Griefbot-app

The Griefbot is an app which you can talk to every day. You just share your feelings, what you did, what you thought. In this way your life is being recorded. When you die, your beloved ones can use the data in the app to bring you back from the death. Using AI, your beloved ones can have a conversation with you, ask you for advice or just have a chat. Users will pay a subscription per month.

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Impact on society

What impact is expected from your technology?

What is exactly the problem? Is it really a problem? Are you sure?

The purpose of the Griefbot is to reduce suffering for relatives or friends of a deceased person. We believe that - especially with tragic and sudden deaths - there is incredible pain by relatives and friends. The Griefbot is an advanced way of looking at photos or listening to that one voicemail. We believe accepting death is easier if you can have a conversation with your deceased loved one. Also the app will connect grandchildren to the grandparents they never knew.

The Griefbot partly solves that problem by enabling a conversation with a deceased parent or grandparent.

Are you sure that this technology is solving the RIGHT problem?

The app can never replace a real life person. However, the Griefbot does not strive to do that. The purpose of the Griefbot is to ease suffering.

We do understand that sometimes it is better to let go or to talk to relatives or friends instead of to a Griefbot. However we think this are choices to be made by the users. We are just offering an extra option to ease suffering.

We also try to build a community, so that relatives can help each other and find support with one another. This way the Griefbot also fuels more and better human connection.

We understand that sometimes suffering is good and helps. However we think a person that is confronted by a tragic death experiences already has enough pain. Would you say to someone who lost someone that they should not look at photo's?

Also, we like to point out that the app is not the right solution for everyone, but it can be a solution for a lot of people.

How is this technology going to solve the problem?

The quality of the solution is dependent on the quality of the data trail. More data means that the Griefbot will act more like the deceased person.

However, the goal of the Griefbot is to ease suffering. Therefore it is enough that the Griefbot reminds someone of the deceased love one. It does not have to be perfect.

We use AI to train the Griefbot to act like the deceased based on the data.

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We know that this works. We have tested it on a lot of users. Based on feedback we are constantly improving the AI. Sometimes it makes a mistake, but this is also good. It is important that sometimes users are remembered that it is not a real person that they are chatting with.

As more and more people use our app for longer periods, we believe that the data-input will become better and better. In the future we will have people that talked to our app for decades. Their digital representation, especially as AI also improves, as a Griefbot will be near perfect.

We have a lot of users that tell us that the Griefbot eases the suffering. This makes us very happy and we are constantly alert on improving.

What negative effects do you expect from this technology?

Negative effects that we expect and sometimes already have experienced are the following:

Some people will get hooked to their Griefbot and have trouble getting back to real life.

Some people will get into trouble with their relatives. For example one sister does not want their father to be a Griefbot and the other sister uses it all the time.

One day the Griefbot will be too good, so the memory of death person will be replaced by an unrealistic digital version.

Maybe the Griefbot will be used in heated arguments. Dad would not have approved this, listen to his Griefbot.

Maybe people will think of people not using our app when alive as really, really egoistic. Maybe in the future it will be frowned upon if you do not use a Griefbot, because you are robbing your lost ones of an opportunity.

In what way is this technology contributing to a world you want to live in?

Very much.

We like to live in a world where technology enables people to freely make choices. If a loved one dies, we believe it is fantastic that you can choose to have a conversation with a Griefbot. If this helps you, we want to help you.

You have a lot of people that write their memoires or record videotapes fot their loved ones to be read/seen when they are dead. We are adding another advanced possibility to this.

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We think death is often random and unfair. We want to live in a world that is a bit more fair and has a bit less suffering. The Griefbot helps with that.

If people think a Griefbot is creepy, they can choose not to use it.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.

People can get hooked to a Griefbot. That is why we allow users to set restrictions and we give them information on usage - time. Also, we believe that the Griefbot should only be used by the people very close to the deceased. That is why we give control to the user of the app (when alive) who can use it after he/she dies. We also learned that our users need real human connection. That is why we created a community of Griefbot users.

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Hateful and criminal actors

What can bad actors do with your technology?

In which way can the technology be used to break the law or avoid the consequences of breaking the law?

Yes, under certain circumstances it can be used to break the law. If a young, underaged person dies and the friend or family member of the deceased gets access to the Griefbot account he or she can use it to draw young kids into dangerous situations, as he or she can impersonate a kid. On the other end, a bad actor can abuse the Griefbot for scamming purposes if he or she can "rewire" the AI behind the bot.

Individuals can abuse the trust put into the deceased to manipulate people to undertake illegal activities, e.g. scam them out of money or hurt other people.

It is even possible to imagine that a Griefbot will be taken hostage and only returned to the Original owner after paying a lot of money.

Can fakers, thieves or scammers abuse the technology?

The Griefbot of a celebrity (in the broadest sense) can be abused to incite violence or other forms of societal unrest even after the person dies. If Griefbots become more common, Fake Griefbots of celebrities can become a problem.

We can imagine that people with strong believe systems have problems with the idea of a Griefbot.

Can the technology be used against certain (ethnic) groups or (social) classes?

Poor people can be excluded by the pricing of the product, giving them no acces to the memories of their loved ones.

Individuals who don't have any proficiency in technology also run the risk of being excluded of use.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.

The only way we can see the Griefbot pitting people together is between either the family members or friends of the deceased. If a certain group finds some information about the deceased undesirable and doesn't want to believe it, it can create unrest between family members.

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Also their can be unrest if one side of the family wants the Griefbot and the other does not want to.

Fake Griefbots can also create problems, but that is very speculative.

How could bad actors use this technology to subvert or attack the truth?

After someone's death the Griefbot could be programmed to "hide" certain information, views, motivations or ideas the deceased has. This can potentially be abused to omit bits of the personality of the Griefbot.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.

Yes. We think the Griefbot is a very personal solution, so we created a very personal two-factor security. You can only use the Griefbot with a double authentication. Also we encrypted all data in our datacenters and made sure security is very high level, so it is also impossible to hack our Griefbots. An elaborate back-up procedures makes sure, that you can always return to the Griefbot of a few weeks/months ago.

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Privacy

Are you considering the privacy & personal data of the users of your technology?

Does the technology register personal data? If yes, what personal data?

The General Data Protection Regulation defines personal data as data relating to an identified or an identifiable natural person. Natural persons are living persons, so the GDPR in principle does not apply to deceased persons.

However, our Griefbot is also filled with data of living persons as well, especially those with a close relation to the deceased, to which data the GDPR will apply.

Also the data of the persons that use the griefbot is processed in different ways, and some of these data falls within the scope of the GDPR.

For both of these categories we know that some of the data that feeds the Griefbot contains sensitive categories of data as well. For example, some Griefbots are fueled with mail conversations and that means that a lot of very sensitive personal data can be included.

A lot of people share with their loved ones very sensitive data like passwords and bankaccounts etc. which can be a huge risk of potential hazard.

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

Yes, the deceased may not have a say in the creation of his/her griefbot.

Even though deceased, you might want to protect some aspects of your private life after death. In some countries it is e.g. prohibited to defame deceased people, something that can easily happen when, without knowledge and consent, after death a Griefbot is created.

Moreover, not only information about the deceased him/herself can be revealed by a Griefbot, also the data of those that came into contact with the Griefbot. Privacy includes the right to reputation.

There are two dangers in this respect.

First, that the Griefbot is too static and does not let the deceased evolve like he or she would have in real life. E.g. when someone dies in times where same sex marriage is not accepted, in real life he or she might have come to accept this, but the Griefbot does not automatically. Creating an image of the

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deceased as a conservative and maybe even discriminatory person.

On the other hand, as griefbots are self learning, they can also evolve the deceased into a person he or she was not in real life, e.g. becoming discriminatory on the basis of the information that is fed to the griefbot after death of the actual person.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

Privacy is not the same as data protection.

Privacy as a fundamental human right is embedded in national and international constitutions and conventions. For the EU important pieces of legislation are the Charter of Fundamental Human Rights of the European Union and the European Convention on Human Rights. On the basis of art. 8 of the European Convention on Human Rights an invasion of privacy can be justified, if it is foreseen by law, on the basis of one of the interests mentioned in article 8 (2) and is necessary in a democratic society. This is judged on the basis of 2 principles, proportionality and subsidiarity. Proportionality means that you can reach the purpose with the measures you take and subsidiarity means that no less invasive means are possible.

The GDPR is a very extensive piece of legislation but is based on 8 primary principles: purpose specification, purpose limitation, data minimisation, data quality, security, accountability, transparency and participatory rights. So, to be compliant with privacy and data protection legislations, we strive to design the griefbot with these principles in mind.

Does the technology mitigate privacy and data protection risks/concerns (privacy by design)? Please indicate how.

In view of the principle of data protection by design and data protection by default in the development of the Griefbot consideration must be given to measures to mitigate privacy risks. What kind of data do we need to use to give the Griefbot the functionality we perceive. What exactly is our purpose, and what is needed to achieve this? There would be a difference for example if a Griefbot is specific to one person. So only data concerning person A and the deceased are used for the griefbot that is meant for person A, such as emails and Whatsapp conversations between person A and the deceased, instead of using the entire email database of the deceased and all Whatsapp messages of the deceased with anyone. It also needs to be considered if other persons data, than those of person A and the deceased can be pseudonimized or preferable anonimised. Security is very important so only person A can "feed" the griefbot and has access to the griefbot.

In which way can you imagine a future impact of the collection of

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personal data?

For the impact of the data as such, depending on what data exactly will be used to feed the griefbot, we do not see reasons for future impact. As the griefbot functions on the basis of self learning algorithms it might be a problem that the griefbot develops in an unforeseen way, creating a person that no longer corresponds to the actual deceased, displaying behaviour that would not be the behaviour to expect from the actual deceased.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

We are continuously working on being compliant with GDPR law. On a more fundamental level, we are exploring two potential improvements.

First we are thinking of a Griefbot that is completely personal, so there is only a one on one relation with the Griefbot. This solves a lot of issues with privacy.

Furthermore we think that if the griefbot is personal and has the sole purpose to help one specific purpose grief, it would make sense that the person using the griefbot has some say of control over the development of the griefbot.

Second we are exploring the option that a deceased person has to give permission for the Griefbot while alive. Just like a donor codicil.

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Human values

How does the technology affect your human values?

How is the identity of the (intended) users affected by the technology?

There are two kind of users. The user that will become a Griefbot and the user that will have conversations with the Griefbot. We understand that the identity of both users will be affected by the Griefbot. This is a very personal choice. However, we also believe that providing the opportunity to digitally live on can inspire people to have a better life and provide loved ones with a possibility to ease suffering, which both are very valuable.

A person that uses the Griefbot during life will - on a regularly basis - talk to the app. This also will provoke the user to reflect on his/her life and life choices. We believe this helps the user to become a better person.

For the beloved ones, we believe that too much suffering is wrong. If we can ease suffering by offering a Griefbot than that is in line with what persons want to be: someone who mourns but is helped in the process.

We think that religious people can use the Griefbot, because there is a clear distinction between the soul and digital technology. We are just providing a tool that helps your mourn (like photo or video).

The technology is matching values that are important for people, we think. People live on when they are remembered. Parents or grand parents get a voice. We think that is very valuable. It is also an opportunity to share your insights and wisdom with your loved ones after you die.

How does the technology influence the users' autonomy?

First, we believe that there a lot of people that do not want to live on as a Griefbot. They should not be pressured to do so by their relatives. Using the app and/or becoming a Griefbot should be a personal decision.

We are also very aware that the technology can be addictive. People can get addicted to chatting with the person they miss so much, and start disconnecting from the real world. This might be a serious problem and it influences the autonomy to make choices.

Also, we think people should make autonomous choices. They can not trust a Griefbot to make choices for them. We think this an issue to be addressed. People live on, circumstances change. It is bad idea to trust a Griefbot to help you make decisions.

The Griefbot provides you with new choices. The autonomy of people is empowered to make new choices. People can decide to live on digitally.

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People can decide to mourn with the help of the Griefbot.

What is the effect of the technology on the health and/or well-being of users?

If people talk to the app on a regular basis about their life, we believe this helps you improve your choices. It inspires reflection on your thoughts, action and feelings, which is a good thing. Maybe sometimes you will regret the things you said to the app, but we believe that if you use it for a longer period, you will come to terms with who you are.

For beloved ones, the app helps with the mourning process. However there is a chance that the user loses connection with real life. We believe that the Griefbot helps with the mourning and we monitor that effect closely.

Finally, we really believe that it is helpfull and inspirational to provide grand children with the opportunity to talk to a digital representation of their deceased grandparents.

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.

For the person that becomes a Griefbot we will build some controls in the bot. First we give the opportunity to erase or activate or erase the Griefbot (so it can be connected with a testament). Second we do not provide the possibility to correct or change data during life (so you do not feel the urge to optimize the data). user we decided to build controls in the bot. For the beloved ones, we inform the user of extreme use, we give the option to restrict access and we provide a distress-button for when the Griefbot misbehaves.

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Stakeholders

Have you considered all stakeholders?

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.

Name of the stakeholder

(direct) relatives of the person who died (Griefbot-users)

How is this stakeholder affected?

A dead person can be kept alive (not only in the minds and hearts, but even in a near-real-live context) when relatives can still talk to a bot that mimics this persons vocabulary as if he or she has never died. In this sense the bot can help to remember and keep a person alive like he or she really was.

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

Name of the stakeholder

(former) relatives of the person who died

How is this stakeholder affected?

This person can connect again to the person who has died even when formal contacts have been shut down (f.i. by the persons who now consider themselves as direct relatives).

We block this opportunity by only allowing the person with access to the data - accounts to use the Griefbot.

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

Name of the stakeholder

Non-connected people who want to connect now

How is this stakeholder affected?

Can you imagine what will happen when people pop up from whom nobody

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(in the first or second stakeholder-group) new that they were connected to the person who died? Does a person have the right to take secrets with them into the grave or can a grave be digitally opened afterwards? Who decides on what to do in this kind of situations?

We block this opportunity by only allowing the person with access to the data - accounts to use the Griefbot.

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

Name of the stakeholder

The deceased person

How is this stakeholder affected?

We are creating a Griefbot that is based on someones data trail. This is not the real person, only an impression. Furthermore the Griefbot will continue evolving as a result of conversation. This way a 'new' deceased person will emerge. We think you should give permission beforehand and we are researching this option.

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?

Name of the stakeholder

Religious people

How is this stakeholder affected?

We thought of people that have religious objections on Griefbots. We carefully try to communicate that the Griefbot is only a tool to help you mourn, but we already see that people are sometimes objecting.

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

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Name of the stakeholder

An ex-wife / debtor

How is this stakeholder affected?

What if there are some dirty secrets in the past of the Griefbot. Something to do with money or adultery? What if someone wants to know these secrets and wants the Griefbot to tell.

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.

By our stakeholder-analysis we even more realized that we can only support one on one relationships with a Griefbot. If more people want to use the Griefbot, there will be more Griefbots.

We will create one primarily user, who can allow access to other users, but they will talk to their own version.

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Data

Is data in your technology properly used?

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?

Yes, dependent on the available data, the personality of the griefbot might be close or far from the deceased person. The limits are clear to us. The griefbot can't "cope" with it, so we would make the users aware of its limitations.

How does the technology organize continuous improvement when it comes to the use of data?

We will let the griefbot develop itself, there will only be moderation on extreme new behaviour arisen from the self-learning of the bot.

How will the technology keep the insights that it identifies with data sustainable over time?

The bot might develop itself to a future version of the deceased that might never have existed. On the other hand it might not evolve, and keep certain beliefs in a time frame (eg. the view on same sex marriage), while if the deceased might have lived, they might have evolved in their beliefs.

In what way do you consider the fact that data is collected from the users?

There is no business model behind the grief bot.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.

Not at the moment, no.

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Inclusivity

Is your technology fair for everyone?

Will everyone have access to the technology?

Yes.

However we charge a subscription fee for users. Also, our griefbot can only be based on an active social media and data profile. Our Griefbot is based on western datahubs. Chinese and Russian datahubs are not possible.

We do understand that there is a difference between have and have nots, but we do not see this as a reason to change our technology.

Does this technology have a built-in bias?

Yes.

Of course. The idea of the technology / griefbot is that it is biased. We have only one version of the griefbot for all users. There can only be one subscription and so there can only be one griefbot of the deceased. This subscription can only be requested by the person that has access to usernames and passwords and a certificate of death. This subscriber can give more people access by buying additional licenses.

Does this technology make automatic decisions and how do you account for them?

We think it is important that our technology is biased, personal and does not account for decisions. Just like a real person. That is why we designed our technology as a black box. Users will only experience the user interaction without knowing why the griefbot does what it does!

Is everyone benefitting from the technology or only a small group?

Do you see this as a problem? Why/why not?

We believe that we add a new service to society, so we are not disrupting existing economical models. We do believe social relations can be disturbed but also enhanced. We think this is the responsibility of the users.

Since social media is widespread and our subscription fee is low (think around 10 dollar per month) we do not believe a small group will benefit.

Does the team that creates the technology represent the diversity of our society?

Yes. Our design & development - team consists of a lot of different people. We even made sure that cultural differences (we have people from 4

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continents), gender and age (we also have older / retired designers) are part of our team!

Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.

Yes. Based on this discussion we decided to limit the accessibility of the griefbot to one person. A person that has a death certificate and usernames and passwords. The user can buy additional licenses.

Secondly we started a discussion with life Insurance companies to include a griefbot - possibility so we make it even more affordable for everyone.

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Transparency

Are you transparent about how your technology works?

Is it explained to the users/stakeholders how the technology works and how the business model works?

We do explain - in broad terms - how the technology works. We list the data sources and social media channels we use to feed the AI to create the chatbot. On our website we explain the idea behind the technology. We explain our mission and the impact we want to have on society. However we do NOT exactly explain why the griefbot is giving certain answers. There are two reasons for that.

One we do not always exactly know how the AI reaches a certain response and (two) we believe that the impact of the Griefbot is bigger if you can not track down how an answer was reached. After all, that is also impossible with human interaction.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?

We do not.

The decisions the Griefbot makes are: which answer am I going to give. When am I going to sent which app-message, and so on. We do not explain these and we tell people on our website. The reasons for this are listed under the question above.

Is it possible to file a complaint or ask questions/get answers about this technology?

No.

We believe that a Griefbot is a very sensitive and personal experience. We want to give you an experience as good as possible, but we can not have a discussion about the behavior of the griefbot. Users can always choose to terminate the subscription.

Of course we do provide a FAQ.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?

We are not. This is something we can improve on. We listed some improvements in the change-question (below).

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Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.

Based on the last question we created a specific section on our website in which we explicitly - by a questionnaire - help users to make the right decision. We tell them about the large social impact of the Griefbot, we share user stories and we explicitly tell them that the griefbot is an impersonation of the deceased, that is created by an AI that is by design a black box for us.

This helps the user to make the right decision. We also have plans to provide a feedback-section, reviews and community for users.

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Sustainability

Is your technology environmentally sustainable?

In what way is the direct and indirect energy use of this technology taken into account?

We offer cloudservices. These cloudservices are energy consuming. However, we host our servers with suppliers that have high standards in environmentally friendly datacenters. Our product could use more resources from the local client (laptop, tablet or phone) so there is less traffic and energy consumption in the datacenters.

Do you think alternative materials could have been considered in the technology?

This question is not applicable since we create a software - based product.

Do you think the lifespan of the technology is realistic?

This question is not applicable since we create a software - based product.

What is the hidden impact of the technology in the whole chain?

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Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.

We are currently investigating if we can offload certain resources to the local client.

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Future

Did you consider future impact?

What could possibly happen with this technology in the future?

The Griefbot can be an important support for people and a normal part of grieving, on the other hand, there is a lot of potential for future abuse. A better Griefbot does not automatically mean that there will be a better world.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.

When my mother died I was only four years old. Now that I am twenty eight years old I only heard the stories from family members and people who worked with her, about the wonderful person she must have been.

Four years ago our daughter was born. She is four years old now and I keep on struggling with this missing part in my life. What kind of things would my mother have said to a four year old from her role as a grandma?

I thought I would never know, until this new technology came up. They call it a grief bot, but my daughter just calls it grandma. She talks to her all the time and I hear them giggling when I walk out the room. Sometimes she whispers that my daughter is exactly like I was at that age. What a nice thing that my daughter can grow up with the (grand)mother I never had, although they will never meet in person.

But, what does 'meeting in person' actually means now that everything has gone digital? Is it really necessary to make a distinction between what is fake and what is real? For my daughter grandma is real and that is the only thing that counts...

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.

When Carl died we all wanted to stay connected, like everyone does when the grief bot asks you if you want to remember a person's life and connect again.

But when we connected I got a whole different Carl than I expected. In my mind he has always been the most caring husband, the best I could wish for. But now that I have asked him some questions, he gave me some unexpected answers. And when my friends asked him questions he answered very rude. Was this always the case and did I just didn't see it?

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I don't know what to do with it anymore: should I keep my own memories alive or should I replace them with new ones? Do I end up with a totally different person in the end? What is real and what is fake? I don't know it anymore.

The strangest thing is that my friends say I should get myself into a new relationship again and forget about Carl. But how can I do that when he keeps on talking to me like he is still with us? It feels like betrayal if I leave him now. Or do I betray myself by not letting him go? How did people do this in the old days? Did people just disappear in time? Could they be forgotten?

I feel trapped in this situation but it's like a circle I can't get out of.

Would you like to live in one of this scenario's? Why? Why not?

Keeping dead people alive might seem logical and nice, but has the pitfall that people can no longer be forgotten in a natural way. In my western culture nature intended us to slightly disappear from each others minds, but this is not possible anymore. What does that do to our human values and to our mental and physical state of mind? Is this a healthy or unhealthy part that we choose to walk on? Could we foresee this when things seemed less complicated?

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?

No, we haven't thought about that at all. Like most technology developers we decided to launch the tool first and see what happens. I don't know what other people will do with it, but if an investor wants to pay me a million I think I will sell my idea's anyhow.

What do you think? Could an external part be a 'bad actor'? What could possibly go wrong? I still have my million dollars though...

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.

Maybe we should decide on not making or implementing things if the future scenario's turn out to be too radical. But things will change and society changes as well. And what will happen if somebody else decides differently?

Do we really have an opt-out if the standard is to opt-in or is this just an illusion? Do we really have a choice?