

Our Virtual Existence: the Eternity is here!

Antonio Castro

LIACC-NIAD&R, Faculty of Engineering, University of Porto

R. Dr. Roberto Frias, s/n

4200-465 Porto, Portugal

<http://antoniocastro.blogspot.com>

frisky.antonio@gmail.com

1. VISION

What characterizes the existence of a person? The fact that it has a blood and flesh body, the actions and goals achieved during its life, or both? Like we all have a real existence, we propose to create a virtual existence for each one of us. Like our real life, our virtual life would have knowledge of our goals and desires in all areas. Like our real life, our virtual life would have autonomy. It would know all about us, our ID number and data, our IRS information, our health information, and so on. The “real I” should be able to define the preferences and goals of the “virtual I”. Those preferences and goals should be possible to change along our life. It should be able to pursue those goals in our behalf. It should be able to learn, interact and adapt to the virtual environment, like our “real I” has to learn, interact and adapt to the real environment. Our “virtual I” should exist, of course, in a virtual space: the Internet. It should seek our goals and preferences, inform and give advices to the “real I”. It should be able to communicate all this to us through our home PC, our mobile phone, PDA, and so on. We should be able to carry our “virtual I”, if we wish, with everything about us, in our mobile device or in a flash pen. Because it knows everything about us, it should be able to represent us in the restaurant information system, in the IRS information system, in the health information system, in the Bank information system, and so on. Say goodbye to ID cards, driving licenses, passports, and so on. Our “virtual I” will represent us to the police and immigration officer. When our “real I” dies our “virtual I” can continue to live, representing and pursuing our goals. Our family and friends can continue to talk with us, through our “virtual I”. - **The eternity is here!**

2. PROPOSAL

Peter Braun and Wilhelm Rossak in their book [1] gave the following example: “Imagine yourself, for example, instructing your mobile phone to go shopping on the Internet: A piece of software will search for product information, compare prices, hunt down bargains, and, finally, buy the desired good with electronic cash – all without keeping your phone online for the next 3 hours and ruining your eyes with a tiny display”. They continue saying that the software should be proactive and “intelligent enough to interpret our needs beyond the level of basic keyword matching”. They also gave other fascinating examples in the preface of the book. So, what are we proposing here? We want to go a step forward. We do not want to instruct any kind of device to do something for us. We want that to be automatic and based on our goals, preferences and geographic position.

We propose the creation of a piece of software, for each one of us, which will have a virtual life. It will have a form and it will be able to communicate. Most of the time, our “virtual I” will

interact with other systems through some kind of protocol. However, to interact with humans, it will use its 3D animated form as well as its speech capabilities, when possible. We do not want a robot. A robot occupies space. We want something that we can carry in our pocket. Our “virtual I” will be able to learn and will have the knowledge of our goals and desires in all areas: entertainment preferences, food preferences, academic, professional and family objectives, among others. It will know our geographic position and, combining that with the knowledge of our goals and preferences, will infer what we want and need, and start the necessary actions. It will not be necessary for us to instruct any kind of device to search for the best hotel, for example (unless we want to give an explicit order). Our “virtual I” will know when to do it. Besides knowing our position it will know the nearest device with capabilities to communicate with us. Whether it is a mobile phone, a PDA or a computer, it will find it and interact with us to give the information we need (the nearest hotel, the restaurants with our preferred food, academic conferences related with our research in the town where we are, movies and other amusement activities according to the day of the week and our family composition, etc.), to ask for our permission (to buy a certain good, to book a flight or hotel, to buy and send flowers to our wife or girl friend, etc.) or, simple, to talk and keep us awake (it will avoid that we fall asleep during our driving on way home).

As we state before, our “virtual I” will have learning capabilities but we also want to be able to define daily, weekly, monthly and yearly objectives as well as long-term goals. Our “virtual I” will be able to pursue those goals in our behalf. He is our parallel existence, our confidant, our guardian angel, our priest. Someone (or something?) that we trust and knows what we are and what we like. We will not need to have other “agents”, specialized in trips, restaurants or other things. It will be able to take care of everything in the virtual world like we take care of everything in the real world.

One of the things that we want him to take care for us is the computer desktop. Why can't we have a more intelligent computer desktop? Why do we need to know where to install the applications and where to save our documents? Why do we need to organize the hard disk in folders and sub-folders? We, computer users (at least the regular computer users) don't want to be preoccupied with these things. We just want to manifest our intention of doing something. That's it! We want our “virtual I” to do the rest of the job. It will know where to save the files and classify them according to our interests. Best of all, it will know where it is the document that we want to change or print. Finally, and because he is virtual and has mobility capabilities, it will be able to carry with him our preferred way of work and organize things, to other computers desktops (we will have the same

desktop behavior in our home computer and in our office computer, for example), but also to other mobile devices.

When will this “virtual I” be born? It will depend on us. We will decide. However, one thing we know: it will not die when we die. It will continue to live, representing and pursuing our goals. As we stated before, our family and friends can continue to talk with us. Finally and because the future is something that we do not know (yet!), we might even be able to interact with our “virtual I” from the above. The eternity is here!

3. CHALLENGES

Automation, mobility, ubiquitous and pervasive computing, accessibility, flexibility, semantic web, intelligent devices and other related technologies are very present and popular nowadays. A lot of research has been done and will continue to be done. The interest in Ambient Intelligence (see applications opportunities in [2]) is huge. The support of the EU Commission is an example of the importance of this subject.

We would like to point out some challenges regarding the implementation of our proposal. Those challenges are, in our opinion, excellent research opportunities. An implementation of this proposal will raise challenges regarding: infrastructure, security, privacy, information control, human computer interaction, protocols for interaction with different devices, 3D representation (holograms), speech recognition, learning, inference, machine learning, wearable appliances, protocols for interaction with different operating systems, protocols and mechanism to locate the nearest devices and negotiation.

This proposal raises some big problems. Security and privacy is one of them and it is one that has a great impact regarding the users’ approval. Another issue is related with how to store the information, together with the software, and make it possible to transfer from one device to another. If we want to create a virtual representation of us and want this virtual life to “live for ever” we may expect that a lot of information will be generated. Remember that we also want our “virtual I” to represent and work for us in different computer desktops, organizing and classifying things according to our way of working. This will generate information that needs to be stored and transported from one device to another.

Besides the technical issues there are some social and cultural problems that might arise. Will this proposal contribute to increase or decrease the isolation of the human being? Will this proposal contribute to increase or decrease the problems between different cultures?

We foresee that, in pursuing the implementation of this vision, a lot of good and useful services will appear. Some of them are improvements regarding existing ones, others are new. We would like to point out the following:

- Improvements in services related with entertainment (cinema, sports and restaurants, reading, and so on).

- Improvements in services related with travel (flight and hotel search and booking, traffic information, and so on).
- New services related with pursuing professional, family or personal objectives. We can define a plan of goals (short, medium or long-term) and have our “virtual I” looking for the relevant information and events, notifying when necessary and alerting when we pass nearby one of those events.
- New services related with alerting us for potential dangerous situations or potential health problems (alerts when falling asleep during driving, unusual heart activity, high level of cholesterol, and so on).
- New administrative services. It will represent us in the several information systems of public administration and in private institutions, from the city hall to the small restaurant near our home.
- New desktop and computer services. This is our preferred one. Work organization, classification, search, among others, the way we like and in all the computers and devices that we use.
- Finally: the eternal life! Our “virtual I” will continue to exist and our family and friends will have a more personal and interactive memory of us.

Remember that most of these services will be triggered automatically, in an intelligent way: taking into account not only our preferences but also our geographic position and other kind of sensed information. That’s the difference regarding some of the services that already exist or that are proposed by others.

4. CONCLUSION

Our objective in this position paper is to present our long-term vision of this fascinating topic. We know that, for now, this vision raises a lot of questions and might even be polemic. We also know that some of these things are “futuristic” and, for now, not very realistic. However, we will be very happy if everyone that reads our position paper feels more motivated for doing research in any of the topics that our proposal encompasses. We also hope to contribute to the definition and implementation of more intelligent and useful services and devices, for the benefit of all mankind.

5. REFERENCES

- [1] Braun, P., and Rossak, W. *Mobile Agents: Basic Concepts, Mobility Models, and the Tracy Toolkit*. Elsevier Inc. (USA) and dpunkt.verlag (Germany), MK ISBN: 1-55860-817-6, 2005.
- [2] Luck, M., McBurney, P., and Preist C. *Agent Technology: Enabling Next Generation Computing. A Roadmap for Agent-Based Computing*. Version 1.0, AgentLink II, January 2003.