

Transkription Interview 24

- 1 I: Cool, perfect. So yeah now we are going to conduct an interview. And it's designed for my PhD-thesis
2 and it's about BCIs, Brain-Computer-Interfaces and healthy users. Ahm so my first question is how have
3 you been in contact with BCIs so far? And what about your BCI gaming experiences? #00:00:33-1#
- 4 TN: So I was subject for an experiment in ... [place] university. Ah ... it was I think it was in ... 2009. So
5 eight years ago. //I: Mhm.// Ahm as far as I remember we spent most of the time, it was an experiment
6 on actually it was on multiple weeks or multiple days. I don't remember. For sure it was not ... one
7 short experience. It was during I think it was multiple weeks. //I: Mhm.// Ah ... and the experience was
8 mostly to to ... put and set-up electrodes on your ... on your ahm skull. I mean on the head. //I: Mhm.//
9 And trying to transform ah I'm not aware I don't remember exactly. I was probably a shaman so
10 transform a shaman between human form and animal form. //I: Mhm.// ... So yeah it's linked to gaming
11 because the subject was ... was world of Warcraft game. But in it the experience in my opinion was
12 mostly to ... to ... to use a switch like on, off or form a, form b. #00:02:07-9#
- 13 I: Mhm. So you had to change ahm it's hard to find the word, like to be an elf or a bear. Something like
14 this? A bear, you know? #00:02:21-8#
- 15 TN: Yes, yes, exactly. #00:02:23-2#
- 16 I: And you did this through your mental strategy. Like changing your thoughts for example? #00:02:32-
17 7#
- 18 TN: Ah yes, so I don't remember in detail. I remember there were I think three ahm ... three different
19 faces. One of ... (smiling) I think yeah, I don't remember exactly. I think it was kind of not [refreezing]
20 but repeating ... some sentence ahm I mean mentally repeating it, not vocally. //I: Mhm.// And some
21 different sentences many times, but yeah, I don't remember kind of ... (break) #00:03:17-1#
- 22 I: Mhm, ok. Are you there? #00:03:20-8#
- 23 TN: Yes, yes, I'm here. #00:03:23-3#
- 24 I: Ok, ok, ok. So ahm as far as you remember it took like several days, not just one time. So you went
25 there several times? #00:03:33-3#
- 26 TN: Yes. #00:03:34-7#
- 27 I: Ok. And it was in a research lab and you were a student in this time? #00:03:41-7#
- 28 TN: Yes, I was in Erasmus exchange and ahm ... there were looking for people for the experimentation.
29 One of my french friends was there and told me that I don't remember I got the information. And they
30 were looking for some people, so I just participated. #00:04:02-6#
- 31 I: Mhm, and there was kind of a calibration before you started the experiment? #00:04:10-0#
- 32 TN: Ah ... I don't remember. Maybe. I suppose but I don't remember. #00:04:17-1#
- 33 I: Ok, ok. Mhm. And now you are working in a software company as well, right? #00:04:23-9#

34 TN: Yes. #00:04:22-5#

35 I: So are you still in contact with BCIs? With this technology? #00:04:30-5#

36 TN: No, not really. I was never ... I mean aside from the experiment I was never in contact with BCI
37 technology. #00:04:40-6#

38 I: Ok, ok. So back to your mental strategy. The strategy you used. Ahm it's ... you were just imaging
39 that you are a bear or that you are an elf. And it what way did you conduct this you know?
40 #00:05:02-6#

41 TN: No, it was not in this way. It was more that I don't remember exactly so and I think it was [name],
42 the girl who managed the experiment. //I: Mhm.// I think she was giving to me or to us I don't know if
43 it was the same experiment for everyone. But she was giving some sentence or ... or ... I didn't enough
44 to prepare or to plan any mental strategy. I was just more following some ... I mean some sentences
45 or ... some mental strategy that were more input that I had no I didn't have to find any strategy.
46 #00:05:45-5#

47 I: Aha. So [name] said to you for example ... she gave instructions, right? #00:05:53-3#

48 TN: Yes, yes, it was more following instructions, focusing on applying this instruction than really
49 creating a mental strategy. #00:06:03-8#

50 I: Ah! Ok, ok. And when you think back now in this time. Did you have like of special experiences or
51 expectations towards this technology? Or have you heard about Brain-Computer-Interfaces before?
52 Like what was going on in your brain when you heard about this technology? Or maybe what is still in
53 your brain, yeah? #00:06:32-0#

54 TN: Yeah, ahm what was in my brain? I would say I heard about it for probably more ah large public
55 experiment, not large public, but ... that can be seen in large public like ok, they had an experience is
56 for disabled or ... animals. But our which one way more invasive. Or not invasive ah ... like like we had
57 the with electrodes. But before I didn't hear about it I mean I didn't hear the specific idea about this
58 experience. Or I didn't have any expectation. #00:07:10-9#

59 I: Mhm, ok- #00:07:12-4#

60 TN: Of course I would like I would have not participated if it would have required surgery or any I mean
61 physical risk or modification. But it was an experience that was only putting electrodes and ... yeah,
62 the only physical contact was a gel applied on the head before putting the electrodes on. #00:07:36-
63 4#

64 I: Mhm. And do you remember how it felt? Like how was the feeling with this cap? And the electrodes
65 and the gel? #00:07:47-2#

66 TN: I would say it was not disturbing because it was not something heavy just a bench of gel putting in
67 the electrodes. And the the fact that you have to focus on something you have to focus your mind and
68 something was more ... ahm how do you say ... tiring than the ... than the materials. I don't know if it's
69 clear, but ... #00:08:15-7#

70 I: Yeah, I understand. So maybe when I understood you right, it was kind of boring? Because it took
71 quite a long time and this was more annoying than the cap and the gel? #00:08:30-0#

72 TN: Not boring! It was more tiring. #00:08:33-5#

73 I: Ah tiring! #00:08:31-6#

74 TN: Like ... yeah, I feel tired after each experience because you have to focus and ... and yeah, you have
75 to focus and repeat. So it was not boring because it was not ... I don't remember how long we spent,
76 but for the ... the (smiling) the last thought I have currently, it was really more tiring because you have
77 to focus on something. I would say it's not regular. I don't focus to try to change an elf to a bear or bear
78 to an elf everyday, so ... //I: (smiling).// But you have to focus on it. #00:09:11-5#

79 I: Yeah, of course. Yeah. So it was tiring, mhm. Ok. #00:09:19-0#

80 TN: Yes. #00:09:19-5#

81 I: And did you get feedback if it worked or didn't work? #00:09:29-3#

82 TN: Well, we had the direct feedback. Because we had the screen so most of time it was hard to
83 transform the the bear into the elf or the elf into the bear. //I: Mhm.// Ah ... I didn't have feedback on
84 the global experience on ... on global results. So ... but of, for my own experience I mean my the
85 experience with me as the subject, we had the direct feedback with the with the application.
86 #00:10:00-3#

87 I: Mhm. And did you have the feeling in the cases when it worked well that you were like responsible
88 for the actions? Like when it changed successfully, did you feel like ah! this was me!? #00:10:20-0#

89 TN: Ahm ... yes! Yes! Without any I would say ... in of course it's subjective but without [hours] and
90 without trying or feeling it was it was more ok. It seems for this sentence or for this instruction, it works
91 more than it does not work. But as far as I remember ah ... the result was not great. I mean it most of
92 the time it didn't work, so I don't know what what the what was the expectation from [name] that she
93 tried that .. as I remember the [unverständlich] for me quite low. And when I said for me it's not me as
94 a person I would say me as a subject of the experiment. #00:11:10-6#

95 I: But still you felt responsible? Even in that cases when it didn't work? #00:11:15-0#

96 TN: No, I didn't feel responsible when it didn't work. I felt responsible when it worked (smiling). //I:
97 (smiling).// When it worked, I was I mean ... at this time I don't remember but the the whole framework
98 and exchange I had with [name] were nice. And and ... it fulfilled my expectations and I mean she said
99 ok, you it's an experience, you can stoph when you want etc. etc. All the ... [unverständlich] was
100 expecting and and there was no pressure on the results or no expectation. We just did the experience.
101 So when it was not successful, I was just thinking 'ok, maybe the ... software or maybe the hardware
102 or maybe the ... experiment has some trouble than I. I didn't feel responsible. #00:12:12-3#

103 I: Mhm, ok. And did you have the feeling that YOU were active? You as a person? Or was it more the
104 computer? Or was it maybe a mixture of both? #00:12:26-4#

105 TN: Ah, I would say both. Because my my active I mean I was ... I was not so active because ... I was not
106 only my brain during focus. And following instructions. It was not really like if I was during something

107 ... physically or really ... ahm inventing a strategy to do something to get a result. It was more following
108 instructions. #00:12:56-0#

109 I: Mhm, mhm. Ok. And you still like gaming? Like not BCI-gaming but you like to to play games? Like
110 computer games. #00:13:09-9#

111 TN: Yes. #00:13:10-4#

112 I: Ok. So compared to normal games (smiling), was this in some way different? Or ... would you have
113 ... would you like to have a try again you know like to try it one more time maybe? Or would you say,
114 no, it was not so funny, so I don't want to have a try. #00:13:36-2#

115 TN: Oh! For sure it was not funny! It was I mean it was funny to to have to be a subject of this kind of
116 experience. //I: Mhm.// And to discover this area as a student. I mean research or research with
117 subjects but it was not so funny as a gaming session can be funny. Or can be I don't know
118 [unverständlich] or what what you want to apply it for. Computer or physical gaming session? //I:
119 Mhm.// Ah I would say I ... it was on multiple sessions so I will probably not accept to participate again.
120 It such sessions, nowadays because nowadays I'm not any more a student. Abroad with bench of time
121 just I'm regular working and so on. Less time to ... to spend on this kind of experience. #00:14:32-5#

122 I: Mhm. And what's your profession now? Like what is it called? #00:14:40-4#

123 TN: So I'm a program manager. #00:14:42-9#

124 I: Program manager? #00:14:42-2#

125 TN: Yes. Ah yes, program manager. It's a mix between a product manager and a project manager. //I:
126 Mhm.// So basically I act a team of developers to develop the right product or the right service. And
127 currently it's more specifically I'm working on a ... ahm ... ah e-book-reader, on [unverständlich]
128 browser. #00:15:12-8#

129 I: Mhm, ok, ok. So in general you like technology a lot? Are you open-minded to new technologies?
130 #00:15:21-7#

131 TN: Ah yeah, I would say I'm probably yes, open-minded, I like technology, yeah. The ... yeah. I'm more
132 technologies and [unverständlich] guy I would say. Or non-tec guy. (?) #00:15:37-5#

133 I: Mhm. Cool. So ahm one concern is I can just suppose, I don't know, that with new technologies for
134 example with this special technology, Brain-Computer-Interfaces, which is like ahm people or
135 researchers they are knowing what is going in your brain. They can detect if you are tired, if you are
136 very active, if you are nervous for example. So what do you think? Do you have some kind of fears
137 concerning new technologies for example Brain-Computer-Interfaces? Or do you think that's a normal
138 development and we should accept this development? #00:16:31-3#

139 TN: ... Ah, I would say it depends on the application. I don't for the research part because usually I
140 mean you can if you are ... I don't know strong ethics and strong framework ethics to do research I
141 have no fear, for the application it would depend. I would say if your employer want that you put a
142 ring or something new to to know how you work, then it would become disturbing. //I: Mhm.// Of
143 course we can always find some ... area I don't know for ... a [unverständlich] or ... and [unverständlich]

144 worker, you can always find some area where it's maybe better for for the person and for the company
145 but for regular workers it would be [unverständlich]. #00:17:31-5#

146 I: And do you think with, for example we are all using smartphones a lot in our daily life ... that the
147 mankind is changing? Depending on these new developments in technology? #00:17:47-8#

148 TN: Ah! (smiling). That's an interesting question. Ah ... we can discuss [unverständlich], but it's so ... I
149 think the people are changing but mankind are [unverständlich]. I mean it doesn't change ah ethics it
150 doesn't change really people if they are good or bad. Or even more less more [unverständlich] but if
151 the ends in something that feel good or feel good for them, themselves, for their value. Or ... or for the
152 greater good of the country or humanity, I would say, interaction between people change, but people
153 don't really change themselves due to technology. #00:18:37-6#

154 I: Mhm, ok. So you have not a lot of concerns in regard to privacy or protection of your data for example
155 in your cell phone as well? Or through using your laptop? #00:18:51-1#

156 TN: Oh yeah! Yeah, yeah, I have. It's because ... because people I mean humanity didn't change so
157 some people still want to make more money than others. //I: Mhm.// That's the price of of their own
158 value or of their own ... I would privacy in the case of privacy, so yeah, for sure. Some people would be
159 happy to ... to steal your privacy or to steal your data and to make more money. Even if it's
160 anonymised or [unverständlich] data that ahm yeah, for this like ... European Union, the [GPR] is
161 trying to [unverständlich]. But it will be I don't know if it's I can say it in English, but like cat and mouse
162 game. #00:19:42-5#

163 I: Yeah, I know. Mhm. Yeah, that's true. So if I understood you correctly, it's like ... a new instrument
164 people use but the idea of man is still the same. Like we have good people, we have bad people. A lot
165 of people want to gain money, so this system is still the same? #00:20:09-1#

166 TN: Yes, exactly. //I: Mhm.// It's simple really. And you can use it for good things and you can use it for
167 not so good things and sometimes the situation is not black and white. And ... people have to draw a
168 limit. //I: Mhm.// I mean you may actually draw a limit if some people are ... seem not to use it for the
169 good. #00:20:32-9#

170 I: Mhm. And for example in your daily life when you are using a laptop and cell phones, something like
171 this. Do you restrict like ahm the use, do you say, ahm, I'm using it a lot or too many times, I want to
172 restrict it. Or I want to protect my data more. For example with Facebook? #00:20:56-3#

173 TN: Ah .. yes. Mhm ... I'm careful with it. But I would not say I'm restricting myself, but I will not publish
174 very private photos on Facebook. //I: Mhm.// But it was not ah ... it's not an active ah ... decision. I do
175 it just I will not [unverständlich] so I don't have to risk not to put them on Facebook. #00:21:26-9#

176 I: Mhm. Or maybe the use of technology and social media. So you are using it a lot but you don't want
177 to restrict it. So it's ok for you the use? #00:21:38-4#

178 TN: Yeah. The use is ok for me. And I don't want to restrict myself there. But as I'm careful ah I don't
179 feel that ... I have to restrict myself. #00:21:50-5#

180 I: Mhm, ok. Cool. And ... just one more question. Ahm when we are looking in the future. //TN: yes.//
181 Maybe, you are a software manager (smiling), I'm sure that you know more about technology than I
182 do I suppose. What do you thinking about future developments? Maybe regarding to Brain-Computer-

183 Interfaces? I just ... I can tell you that ah Elon Musk, you know the founder of Tesla, //TN: yes.// he
184 founded an ... a new company which is called 'Neuralink'. And they are doing a lot of research in the
185 field of BCIs or even Mark Zuckerberg, the founder of Facebook. So something is going on in this field.
186 Ahm what do you think, what could be possible in the future? Like are your ideas concerning this
187 development? #00:22:56-6#

188 TN: Ah! I think the most visible most visible progress would be probably with disability like ... if you
189 can't move anymore your arm and we we ... could imagine to ... ah! It's more (smiling) cyber
190 [unverständlich] word from writer but you know implement a chip in your brain and link with
191 prostheses. Or with your existing arms. That linking the nerve you lost in an accident. Or ... so this is
192 probably the most obvious. And ... but I don't know when I heard this [unverständlich] I think the ...
193 another area will be more sleep improvements like you put something on your head. Go to sleep and
194 you track all you while your're sleeping. And ... maybe I don't know maybe it could help regular user
195 or maybe more for ah ... mentally ill people. //I: mhm.// Ah ... and when I think on that
196 [unverständlich], it's not like ah ... very crazy like from even depression maybe, could, I don't know
197 enough from this ... on the signals, so ... I will speak more but ah ... maybe yes, it's an error and ... yeah.
198 Otherwise I don't know enough in this field so ... you probably know more than me (smiling).
199 #00:24:35-7#

200 I: Yeah. But it's always cool to hear like new ideas and ahm ... you're right. Like ahm the research ahm
201 with patients who are suffering on depression, that's a huge field in this context. Or people who are
202 suffering on schizophrenia. Or people with autism. So yeah, right. That's a huge field now. Or it will
203 come in the future I guess. Ok ... and you think more for medical purposes, right? Like for healthy users
204 ... ? Like we are? #00:25:21-1#

205 TN: Sorry? #00:25:22-5#

206 I: And for healthy users like ... we are? Like Facebook users or ... #00:25:30-7#

207 TN: Yeah. Maybe for ... sorry, for sleep //I: mhm.// sleep control or not sleep control, but sleep self ...
208 self-measurements. //I: mhm.// I don't know yet, maybe yeah, I don't know. #00:25:53-2#

209 I: Mhm, ok. And would like to try this maybe in the future? Not with gaming but if like the the stuff
210 with these electrodes? If it would become easier? If would be a headphone for example? That you put
211 on and you can put it off, you know, this would be much more easier. Would you be open-minded to
212 off it maybe? #00:26:19-7#

213 TN: Oh ... to test maybe. To use it regularly, I would say it depends on ... on the deeper ahm ...
214 characteristics. Is it only for research, is it for my daily life? Is it only ... you know, I'm in .. what would
215 be what would be done with that? And ... who will ... who will this? Who pay (unverständlich). I would
216 say if it's free to use a service that mean I'm providing that also. Maybe I should be careful. #00:27:01-
217 8#

218 I: Mhm, ok. And you mentioned before the implantation of chips. And for example in the north of
219 Europe they are already using this. Like healthy people, they are they want a chip for example, in their
220 hand, to open doors that they don't need keys for example. Or ahm to pay with this chip. Ahm would
221 you be open-minded to do something like this? Because it's ... something is already going on.
222 #00:27:41-9#

223 TN: Yeah. Oh ... I would say probably not except if I have ... in another way, but I will probably I mean
224 with current state of ... of medicine. I would prefer to ... I would say to wait at least some some ... some
225 years or to see what the future of it. I mean it's ah ... a surgery has always consequences //I: yeah.//
226 you can be a little scared. But there can be ah ... long term consequences in implementing a ... a
227 physical ... I mean a non non-organic ... content in your ... even if it's in your finger. You ... we don't
228 know yet what will happen in 10 years, in 20 years. //I: mhm.// So [unverständlich] no other choice I
229 would not do it. //I: mhm.// But for me this is this is not ... it's far away from BCI in the sense of it's an
230 independent chip we here don't use, so ... I would say it's far away from any cyborg idea or any BCI
231 idea in my opinion. #00:29:00-5#

232 I: Mhm, ok. So the BCI system if you understood you right, is like far away from the cyborg idea?
233 #00:29:09-8#

234 TN: No, no, no, no. #00:29:11-9#

235 I: No! #00:29:12-6#

236 TN: The fact that someone had a chip in the arm, in his hand, to open a door. People use all this it's
237 funny for journalists or ... for ... non-tec people because they say: oh! this guy can open his door with
238 his hand. But at the end if you are the ... if you have a ring with the same chip it would do the same.
239 And ... and the guy would not have to ... to be subject of a surgery. #00:29:45-2#

240 I: Mhm, mhm, ok ... Ok. Yes, so the point is the surgery. That it ahm- #00:29:55-6#

241 TN: Yeah. #00:29:56-3#

242 I: Because it's invasive. And it's like- #00:29:57-0#

243 TN: For me it's the surgery that's for ah ... a larger ah ... I would say at a upper level of ... more how do
244 you say, in a more abstract field. It would kind of create two kind of citizen [available] if you have I
245 don't know something that can register ... ah ... ahm oh ... microwaves, no ... not microwaves, but
246 waves, radio-waves //I: mhm.// you maybe, you won't be accepted in a, I don't know, for example to
247 visit a military area. You because you are have it on you and you can't drop it at the ... somewhere or
248 if you have a GPS ah ... a chip maybe some area would be restricted for you because you can't turn it
249 off or you can't ah ... you can't stop it. So ... on a higher level it could create kind of two way citizenship
250 where you have ... regular people and people with some chip on them. #00:31:09-6#

251 I: Mhm, ok. Yeah. #00:31:11-8#

252 TN: Of course there is no, I mean as far as I know there is no such ... problem yet because it's only a
253 few people. And because the chip is on you and you don't have large [problems] and so on. You you
254 can't have complex stuff there but we could imagine that you have ah a [mark] to register
255 conversations and you could register with that and people won't know about it. And even if they search
256 for it on you, they won't find it. #00:31:43-0#

257 I: Mhm ... ok, yeah. Cool. Yeah! Ahm we are almost done. Ahm do you have the feeling that I have
258 forgotten something? Like about Brain-Computer-Interfaces or technology? Because sometimes I have
259 like certain questions I'm asking every interview partner. But sometimes know people more than I do.
260 And they say, ah! You have to be careful or something like this. So does something come into your
261 brain? Like concerning this technology. Or have we said everything? #00:32:24-5#

262 TN: Oh! ... I think I've done everything ... there is probably one concern in ... I would say with all the
263 terrorism stuff. //I: mhm.// ... and if, it's that they all dream of [police] or or information. I mean more
264 intelligent people like I think ah ... ah is it saying, is this guy saying that can we have an [way] of proofing
265 it. And ... any it could be used wrongly like ... like you set-up the device and you apply on someone and
266 because the result say this guy is lieing on I don't know //I: mhm.// any [unverständlich] of the ... you
267 you could set-up someone with this ah I don't say it will happen soon but ... if you have this kind of
268 device, then ... you you can always ... change or adapt the reality to what you want to say. #00:33:27-
269 6#

270 I: Mhm, yeah. Like manipulation? #00:33:30-6#

271 TN: Yes, yes. #00:33:32-3#

272 I: Mhm, cool, cool ... Yeah, so thank you very much! Ahm I just have one question for statistical
273 purposes. Ahm what's your age? #00:33:44-8#

274 TN: I'm 30 years old. #00:33:48-8#

275 I: Mhm, 30? #00:33:50-8#

276 TN: Yes, 30. #00:00:01-0#

277 I: Ok, perfect ... It's funny because in my research I have like mostly men because men are more
278 interested in this kind of stuff. And mostly men about 30 years. It's so funny (smiling). #00:34:07-8#

279 TN: Oh, maybe ... (smiling). Maybe it's a side-effect of the fact that in information technology and
280 [unverständlich] it's mostly men studying and working. //I: yeah.// It's changing a bit ... and 30 years
281 old you have mostly men and ... (smiling) on men and they [unverständlich] recently you I would say
282 it's maybe (smiling) you know you have maybe strong correlation on ... due to the topic you are
283 studying. #00:34:40-8#

284 I: Yeah, yeah. That's true, it's just funny. I'm always like when I'm asking my interview partners ah,
285 what' your age? How old are you? It's always a similar answer (smiling) ... Ok, so ahm thank you so
286 much! (talking about ethics commission document and treating data anonymously) ... Ok, ok, so thank
287 you very much for your time! And have a wonderful day! (smiling) #00:36:24-4#

288 TN: You too! #00:36:26-1#

289 I: Thank you, bye bye, all the best. Bye! (switching off the recorder)