

Portfolio

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Drive:	https://drive.google.com/drive/folders/1exf09LYeRfVdYIzBnLlPVWMENsfTiStx?usp=sharing

Week 1

Reading

R.1

Following is a small summary of the text. Notes that I have taken during reading can be found on google Drive in the Notes folder.

Summary: The mind operates using two systems. System 1 operates quick and automatically, while system 2 is used to answer more complex questions/activities and monitor system 1. System 2 is also in charge of judging and unbelieving, but does this based on the information given by system 1. The problem can be however that system 2 is very lazy and lets system 1 do most of the work, only interfering when either the question is too difficult or the quick answer generated

by system 1 turns out to be insufficient. System 1 operates using heuristics. Heuristics are methods of finding answers that are adequate but often imperfect. One example of problems caused by heuristics are visual illusions.

R.2

Following is a small summary for each of the papers read. Notes that I have taken during reading can be found on google Drive in the Notes folder.

Software Requirements and Specifications: Building software is like making a machine. The parts that will be interacted with is the application domain. In general developers tend to combine the requirements for the application and the machine. This is however often problematic because in most cases the developers will only focus on the machine part. The author states that the requirement of the application domain should be defined separately and explored extensively. The author also states that the evolution of development methods has been harmed because the idea is created that there is a single best method of development.

Contextual Design: Contextual design is a design approach in which the designer is involved in all step. This also includes tasks like data collection. This helps the designer to get to know what is important for the customer. The designer should start with interviews, and focus on interviewing all types of people in the process, and not just the experts. These interviews should be combined into consolidations. These consolidations should then be shared with all people that could provide with good feedback. Another important thing is to redesign the workplace. During this process it is decided what technology is essential for development. Another suggestion is the creation of An User Environment Design (UMD), which shows each part of the system and all interactions with them. Lastly, the author states that it is important to iterate a design early and often. A good way to do an initial test is to use paper prototyping.

Setting the Scene: To make sure that software solution correctly solves a particular problem, we must first understand the problem. The aim of a software project is to improve the world using a machine. In a machine-building project, our business as requirements engineers is to investigate the problem world. There are two versions of this world: System-as-is, the system that exists before the machine and System-to-be, the system when the machine is done.

A problem can be structured into three dimensions. The first dimension is why. The why dimensions focusses on defining what the problem is that the machine is going to alleviate. Common actions in the why dimension are the following:

- Acquiring domain knowledge

- Evaluating alternative options in the problem world

Evaluating technology opportunities

Handling conflicts

The second dimension is what. This dimension is concerned with the functional services that the system-to-be should provide. This part should be defined precisely and should be written in such a way that all parties understand fully.

The third dimension is who. This dimension defines who of the staff is responsible for specific tasks. Decisions about responsibility are vital for a projects success.

TaskModeling: Traditional functional requirements specify the system's role but ignore the context. This is unsuitable because it prematurely divides work between the computer and the user. The author suggest making a work area description, which states formal requirements and overall purpose. The author states that it is very important to determine what are separate tasks and what are subtasks. This will provide a much better overview of the systems essentials and structure. A good systematic way of expressing problems and solutions are tasks and support descriptions. These descriptions combine subtasks and potential solutions.

R.3

Sensemaking is the process through which people work to understand issues or events that are novel, ambiguous, confusing, or in some other way violate expectations [12]. Sensemaking is a critical organizational activity. For top managers, sensemaking activities are key tasks that significantly influence organizational decisions[11]. Maitlis states that methods of sensemaking can be divided into four distinct forms: guided, fragmented, restricted and minimal. [11].

The first type of sensemaking is Guided sensemaking. This type is highly controlled and highly animated. In guided sensemaking, the stakeholders had a high level of engagement due to many organized controlled discussions. This results in higher knowledge of the issues.

The second type of sensemaking is Fragmented sensemaking. This type is animated but not controlled. This is similar to guided sensemaking with the stakeholders still being very involved, but without controlled discussions.

The third type is Restricted sensemaking, This type is very controlled but not animated. This is similar to guided sensemaking but instead of involving all stakeholders, only a few specific stakeholders are involved.

The last type of sensemaking is minimal sensemaking. This type is neither animated or controlled. This meant that all parties in the organization kept to themselves and only conclusions were shared between them.

R.4

Online education is getting more and more important. In 2013 already 33.5% of student were enrolled in at least one online course [1]. Another factor which

makes online education so important is the global pandemic caused by the corona crisis. While online education is often seen as inferior to offline learning, it has some advantages. Examples of advantages are the increased access of courses for students that live far away and the alleviation of capacity constraints due to room sizes[20]. Online learning is however not only positive. Examples of problems are teachers feeling less able to retain student attention, students requiring more discipline to succeed and the loss of social interaction[1].

What the ideal online course should look like is difficult to describe but I will try to define what I think are important factors for a good online course based on a small study, interviews with other students and my own experiences. From the interviews as well as my own experiences I conclude that structure is very important for online courses. Because online courses require the student to work more on their own it is important that the student should be able to get a clear idea of what is expected without much interaction. The second important factor in an online course is the tools that are used and how well a teacher uses it. A research into the success of online learning[20] states that lecturers should adapt their lessons to make optimal use of the online tools available. Most importantly is focussing on the interaction with students. A research on the satisfaction of online education in China during the pandemic[4] states that the biggest factor of satisfaction for students was the quality of the tools used.

As a conclusion, I think that the success of an online course is dependent on how well the tools to give an organized and structured course. I think it is also important that the lecturer focusses on the interactive parts of his lectures.

Exercises

E.1

A small presentation on online learning can be found in my Drive

E.2

My favorite interviewer is Louis Theroux. What I admire about Theroux is his ability to interview so many types of people. I think the reason he is so successful is that he makes his interviewees feel very comfortable. One of the reasons I think he is able to do this is because he seems very unjudging and passive. Even though he might not look or act very daring, I think it is that kind of atmosphere that allows him to get away with asking questions that might be too extreme for other interviewers to ask without any bad responses. These things make it possible for him to interview people that don't want to be interviewed by other people.

Another thing I like about Theroux is the type of questions he asked. Most of his questions are very simple, but his interviews still result in very interesting conversations.

An example of Theroux getting away with asking something bad is in the following clip: <https://www.youtube.com/watch?v=wU02MBKICiE>. Ther-

oux is talking to the Phelps family, one of the most extreme religious people, and at 3:30 suggest that the mother might not actually believe what she is saying.

What I hope to emulate from Theroux is to also create a comfortable environment and ask simple but good questions.

E.3

The recordings of my interviews can be found on Drive in the interview folder. Following are what I found to be the most interesting thing from the interviews. After this I will reflect on the interviews.

Clement Julia: Clement does not have any experiences with online learning so far. This made it more difficult for us to talk specifically about online learning. Instead we discussed what he finds important for courses in general. Clement stated that structure in lectures is very important. An example he gave to reach this is by having a clear first slide which shows what will be discussed in the lecture and how this is connected to the rest of the course.

Lucas Steehouwer: Lucas has experience with online while he was doing his previous master last year. For Lucas it is important that courses have practical elements that are connected to the theoretical part. Lucas did not enjoy the online courses he had followed last year. Lucas stated that this was mostly due to motivational issues and unclear course structure. Lucas thinks that we are currently focussing too much on simulating the offline learning environment in an online setting. Lucas questions if this is the best way to get to ideal online education.

Jelle Witsen Elias: Jelle did not have any experiences with online learning so far. Interestingly, Jelle does not have a background in computer science but in law. This meant that the focus of the interview was more on his experiences with offline learning and how he thinks this will transfer over to an online platform. Jelle stated that motivation is an important part of a course for him and that teachers should focus on this part. Jelle thinks that in an online setting it is even more important for the teacher to interact with the student.

Reflection: I think that the interviews turned out decent but I do have some points I think I should improve on. The main thing is that I felt that the three interviews resulted in very similar answers. This is because I felt that the interviews stayed very surface level, and did not explore the subject enough. Another point of improvement for me is ending the interview. I did not really know when to end the interviews. A possible way to fix these problems is to prepare better questions and define my goal for the interview better.

E.4

I have reviewed the interviews of Ivan Veno. In my review I will mainly focus on how the interaction with the interviewee is, what kind of questions you ask and if you can get all the information out of the interview that you might want. I will start with my overall impressions and follow it up with some snippets which I found interesting. The interviews can be found using the following links:

David: https://www.youtube.com/watch?v=fLVJzaw_s0U&feature=emb_title

Wilco: <https://www.youtube.com/watch?v=W6CUbnptKhY&start=135s>

Joachim: <https://www.youtube.com/watch?v=7HV3gSq9D1c>

My general impression of Ivan's interviews are very positive. The interviews flow well and everyone seems to be very comfortable. I like how Ivan managed to get much information out of the interviewees with few questions. I also liked how Ivan was reacting to the answers and turning them into new questions. The only problem I have with the interviews is that they felt somewhat short, especially the interview with David. Another small problem I have is that Ivan sometimes summarizes the answers quite extensively which can effect the flow of the interview. All in all I enjoyed the interviews.

snippets

David: 2:54 good continuation of his answer into a new question

Wilco: 2:35 good continuation of his answer into a new question

Joachim: 2:16 Joachim just tanked about his hard times with being motivated in the first few lessons. A good follow up question here might be if he has any suggestions on how to fix this problem

E.5

For the overview of Corona apps we have made a google Drive file located at https://docs.google.com/document/d/1u6IUTjyClg6BgeTIaZAXrhK2G_h19F87RY0gBVDjTw4/edit#heading=h.r3e7ka7zotug

Week 2

Reading

R.1

Following is a small summary of the text. Notes that I have taken during reading can be found on google Drive in the Notes folder.

Summary: People are not great in handling statistics. System 1 cannot properly understand statistical facts, which leads to many bad conclusions. Extreme outcomes are more common when dealing with smaller samples. People often tend to create patterns in random events, because system 1 prefers certainty over doubt. This creates what is called the law of small numbers. Small probabilities are handled by people in two ways: either they negate them, or they value it way to strongly.

People use other numbers to anchor to, even when these numbers are not related. anchoring means that the answer to a question is similar to another number, this number is the anchor. While anchoring is something done by system 2, it still inherits the biases of system 1.

People have biases when judging situations. For instance stating what is a higher cause of death is very difficult. Another problem with the human mind is the that we have difficulty understanding probability. An example of this is Linda, a woman who can either be a "bank teller" or a "feminist bank teller". The second is a subset of the first, so the first is always the correct answer. This is however not how all people answer.

When dealing with probability people also tend to give much more weight to specific information about a case compared to the base rate. A good way to not fall into this is to first set a base rate by making an average assumption and then deviate from this assumption using the given information.

R.2

Following is a small summary for each of the papers read. Notes that I have taken during reading can be found on google Drive in the Notes folder.

Apprenticing with the Customer: In this paper the author discusses the use of a master apprentice relationship for the designer. This type of relationship works well because it does not require the costumer to be an expert at explaining himself. This method should lead the designer to have a better understanding of the situation he is building software for.

R.4

What Great Listeners Actually Do: People often think that they are good listeners, but this is mostly false. To be a good listener one should ask good questions, include interactions that build self-esteem, creat a cooperative conversation and make good suggestions.

R.6

Being a good listener is more than just being quiet and occasionally ask a question. Zenger and Folkman state that a good listening is a process in which the listener engages in the conversation by periodically asking questions, making interactions that build the speakers self-esteem and making good suggestions [22]. Methods of becoming a better listener are clearing away distractions like phones or trying to observe nonverbal cues, such as facial expressions. Grohol adds that methods to show that you are actively listening include summarizing, paraphrasing or reflecting on what the speaker just said [8]. Aside from only being a good a good listener it could also show the speaker what parts of the story where not clear enough. This could cause the speaker to elaborate on what he just said. In this paper Grohol also states that it is better to ask for elaboration in a friendly matter, if your reply is questioning their answer too much, it can make the speaker defensive. Grohol also states that asking for an example when an example can make the speaker elaborate on their point. This is similar to tactics described by Beyer and Holtzblatt, who states that a designer should ask simple questions and focus on examples because you cannot expect a costumer or interviewee to be able to answer questions in abstract form [2].

R.7

As stated in *R.6*, there are many ways of being a good listener and ensuring an environment in which the speaker feels comfortable and easy to talk in depth about the questions at hand. There are however also some thing that are best to be avoided if one wants to be a good listener. Beyer and Holtzblatt states in his paper that there are seven roadblocks which should be avoided [2]. Those roadblocks are the following:

1. asking to many "Why" questions. This can make the speaker defensive
2. Quick reassurances, like "Don't worry about that"
3. Advising, while sometimes appropriate, can also make for bad conversations
4. Digging for information when the speaker would rather not give it
5. Being patronizing
6. Being preaching
7. Interrupting the speaker

These things can all break the flow of the conversation and create an environment in which the speaker would rather be quiet.

R.8

Memorizing is an important human ability. I will discuss different techniques of memorization for the task of learning word vocabulary, but I think these methods could be adapted for much more tasks. In their paper, Oxford and Crookall look at the influence of memorization techniques for learning vocabulary [15]. The memorization techniques are classified into four groups: de-contextualizing, semi-contextualizing, fully contextualizing and adaptable.

The first group of methods is de-contextualizing. This means that the words are removed from context fully. Examples of this technique are word-lists or flashcards. This method is very common in high school education, but has several issues. The first issue is that students learn list of words for when they are tested, and forgets them immediately after. The other problem is that because of the lack of context students often create their own associations between words that are not valid at all.

The second group of methods is semi-contextualizing. Semi-contextualizing techniques allow some degree of context but fall short of full context. Examples of this technique are *word groups*, which means dividing lists of words into groups of similar meaning, and *word or Concept Association*, which means that new words are connected to already known words to provide context.

The third group of methods is fully contextualizing. Fully contextualizing focuses on embedding the new words fully in their normal context. Examples of this technique are reading and listening practice, using bigger stories, or speaking and writing practice. This method has the advantage that students will retain vocabulary just through reading practice and will make them more aware of context. The problem with this method however is that while students might be able to determine the meaning of a word in context, there is no guarantee that the word is completely learned or known.

The fourth group of methods is adaptive. The adaptive method reinforces the other techniques at the part of the contextuality continuum. The adaptive method entails going back to words that were already learned at different intervals. This constant repetition is key to memorizing words.

Memorizing is best done by combining different styles of techniques, both contextually and non-contextually. Frequent repetition of the task at hand is also important to create a good memory.

Exercises

E.1

This is an exercise that will be done together with all other students. My task for this week is to get an overview of our group of students. We have decided to do this using a big poll which hopefully highlights the characteristics of the masters Software Engineering student.

The results are evaluated and can be found on the following drive: <https://drive.google.com/drive/folders/1LU9RBTQrom6dJG54GUKyKW5r3XZvCH9o?usp=sharing>.

E.2

I think the problem with the goal of every student evaluating the course with a 10 is that every students definition of a 10 is different. For some students it means the course being fun, for others it means learning a lot, and for others it will mean a course without problems. The question is if this means that the grade of a course is thereby the best measure of success.

E.3

For this weeks interviews I will be talking with Lucas Steehouwer and Clement Julia. We will be talking about what types of jobs we want to get after our masters. Last week I felt that I did not got deep enough into the question as I would have liked. This is why this week I have made a more detailed plan of action. The general plan for the interviews is the following:

First I will ask the interviewee about past jobs, what they liked, and what they didn't like. If they have done jobs related to our field of study I will ask them more elaborate questions about it. If they haven't done any jobs yet, or very little, I will skip this part and try to focus more on other parts.

In the second part I will ask if the interviewee already has an idea of a future job. If so, I will ask him to elaborate, and ask him how he knows this so sure.

The next part is talking about what the interviewee finds important for a job and why. I will also ask if the interviewee already has a goal for a job in the further future. I will also ask if he thinks the job he will take just after the master is different from what he will do later down the line.

I will end my interview with giving the interviewee a set of choices. Each will be a choice between two things for which I would like to know which one they prefer, how much they prefer it, and why.

The goal of the interviews is to get a good idea of the aspirations of the interviewees. Castillo-Montoya states in her research that during research interviews we should not ask pure research questions because they would overwhelm the interviewee [3]. This is why will try to ask as little abstract questions, and end the interview with choice questions which will make the ideas more palpable. The step of making the process less abstract is what I got from the paper explained in *R.2*. The questions can be found on the drive.

Clement Julia: The first interview was done with Clement. Clement has worked for a big company full time as part of his bachelors. He enjoyed it and found that he had learned a lot from it. He did state that he did not like the amount of things he had to do that was not related to programming.

For the near future Clements states that he first would like to go to a smaller company and maby later transition back to a bigger company. Clement does not have solid plan for after the masters, just that he would like to work at a smaller company. It is important for Clement to have freedom in what to do, something he felt was lacking in his last job.

For the further future he expects to eventually go over to a larger company. Clement enjoys programming so he would like to be more technical than social in his work.

At the end Clement states that he would like to work at a startup rather than an established company because it will provide more freedoms. Finally Clement states that motivation is more important than money, given that the salary will still be enough to live on.

Lucas Steehouwer: My second interview was done with Lucas. Lucas did not have much work experience in the field of our study aside from being a TA during his bachelors. Lucas liked being a TA but not for the courses with bad organization.

Lucas has now good plans for a job after his masters for a job. He does not have things he really wants to do, but has some examples of things he would not like to do. Lucas explained that he started with the bachelor information science and later switched to computer science. He said he made the change because he did not want to become a consultant, which many information science students become. Lucas also states that he does not want to get involved with the financial world, because he thinks it is uninteresting and unethical.

Lucas states that he does not mind being at the same company for a long time because he likes the stability. Lucas also states that he would not want to work in a company that is too large since he does not like the organizational work it brings with it.

Reflection: I am satisfied with the interviews of this week. I think the interviews were better than last week. I think that the improvement was caused by a better plan beforehand. I do think that the plan could be improved even more. One of the things that I found was that some questions seemed to have the same purpose. This meant that the question was made redundant by the answer to a previous question. I think that focusing on what each question will add to the interview beforehand could improve the overall interview.

E.4

For this weeks review I have looked at Lucas Steehouwer interviewing Clement Julia. I will review the interview looking at the following elements:

- Are the base questions answered
- How deep is the interview diving in the subject
- How is the interaction with the interviewee

I would like to start with stating that I really enjoyed the interview. I think the interaction between the interviewer and interviewee seemed good and the interview had a good flow. One thing I was somewhat missing was a question if

the interviewee had a certain aspect of coding in which he would really like to work. In general I think the interview worked very well. Next, I will list some timestamps which I found particularly interesting:

8:20 I really like this question because it gives us some insight and is a good reactions to what Clement has said during the interview.

7:10 Clement start talking about him wanting to still be relevant in 10 years time. A good question in my opinion would be to ask if he has a plan to make sure this is the case.

Ad Active listening

Ad Reliability of information you get ou of interviews

Week 3

Reading

R.1

Following is a small summary of the text. Notes that I have taken during reading can be found on google Drive in the Notes folder.

Summary: Humans constantly convince themselves to have a good understanding of future and past. Humans have a hindsight bias. This means that they evaluate something based on the outcome and not on the soundness of the process. This is problematic because it rewards irresponsible risk seekers that are successful by luck.

System 1 makes us thing see the world as more tidy and simple than it actually is. This gives us the illusion that we understand the past. The problem is that this makes it hard for us to distinguish the influence of sound decisions and luck.

Another interesting thing stated by the author was that humans are often overconfident. This was shown in multiple ways but mainly in the form of stock market traders. Most traders aren't performing consistent or well, but are still very confident in their skills.

R.3

People can react to knowing very little about a subject in different ways. Some people will try to first get more knowledgeable about the subject, or will not comment at all because they know they have not enough knowledge on the subject. However, there is also another common reaction of people called Ultracrepidarianism. Ultracrepidarianism is a concept that means giving opinions or advise about things that one knows very little about.

Ultracrepidarianism can be dangerous when the comments made can have bad consequences. An example of this is the current Covid 19 crisis. Villain

states in his article that the current crisis has shown many people commenting on this complex issue without any real knowledge [19]. He thinks that there are two reasons for this phenomenon. The first reason is the media overflowing the people with information. The media's goal is almost always to have more viewers, which means that not all information will be shown equally. The second reason is that there is still scientific uncertainty. This uncertainty causes people to think that every theory is just as valid as the other. The Covid crisis is a great example of the dangers of Ultracrepidarianism.

Another concept which is related to Ultracrepidarianism is the Dunning-Kruger effect. The Dunning-Kruger can be described as the ignorance of one's ignorance [5]. Dunning shows in their paper that the less knowledgeable someone is of a subject the more likely they are to misjudge how knowledgeable they are. Their deficits leave them with a double burden—not only does their incomplete and misguided knowledge lead them to make mistakes but those exact same deficits also prevent them from recognizing when they are making mistakes and other people choosing more wisely.

Another somewhat similar effect was discussed in part 3 of *thinking, fast and slow* [9]. In this part Kahneman discusses people being very confident in their decisions even after being shown to be not very good. He shows that even he was susceptible to this.

It seems that while some people can deal with not knowing some things and letting other people make decisions, many people convince themselves that they know enough to answer themselves.

R.4

Humans are often prone to remembering things different than how they actually happened. Many forms of memories can be untrue and can be altered. One example of short term memory being influenced was shown by Lampinen, Neuschatz, and Payne [10]. They did this by first presenting the participants a list of words. After, the first list was removed and a second list of words was presented. The participants were asked to identify which words from the second list were present in the first list. The authors found that when the second list consisted of words that had similar meaning, the participants would perform much worse. This means that the memory was altered to fit words in the list that were not in them before.

Another way of creating false memories is during traumatic experience. In her Ted talk Milton states that memories are stored better in different levels of stress. Memories are stored the best if under a reasonable amount of stress. However, when the stress levels get higher than a reasonable level, the creation of memories gets more difficult. This means that people with traumatic experiences often either don't remember it, or incorrectly.

Another way of false memories is called confabulation. Gilboa and Moscovitch define confabulation as honest lying. Confabulation is common with Alzheimer patients. The patient that is suffering from confabulation is unaware of the falsehoods, and will cling to their false beliefs.

An interesting other concept of false memory is called the Mandela effect. The Mandela effect is a false memory shared by a group of people. The example where this effect gets its name from is that there is a general idea that Nelson Mandela has died in the 80s. This is however false since Nelson Mandela died in 2013. In his paper French states that the Mandela effect is heavily linked to conspiracy theories.

The last thing I wanted to discuss was Part 3 of *thinking, fast and slow* [9]. In this part the author states that it is harder for us to understand why we made a decision, after we know the outcome of that decision. This is not directly false memory but does mean that we cannot always understand our past self completely.

Exercises

E.1

- a. I think the information from all different sections are very interesting and broad. I have very little complaints. The only thing I would have liked to see is more conclusions based on the information gathered. An example of this is Team 3, who were looking at the best online courses. While they have discussed several courses in depth, I would have liked to see a final section in which the findings from the different online courses were combined.
- a. I think a key question for online learning should be "How can you motivate a student during an online session". Another question I am very interested in is "How can you organize your course in such a way that all students can easily follow it from home."
- a. I think the best way of developing meaningful questions is by first doing research on similar projects/problems. This will hopefully provide the context with which you can more easily pinpoint problematic sections. These problematic sections can then be examined further to create a set of questions that will help solve the problems.
- a. To answer my two questions I think it is first important to define general methods which are used to combat the problems at hand. The second step is to think about how these methods can be applied in an online setting. This will hopefully result in a list of possible solutions.

E.2

I am part of the Info Support group. This group will try to use Requirements Engineering techniques to answer the question. "What can Info Support improve in their website". The Info Support group consists of Gert, Paul, Paulo, Tarick and myself.

Interview 1

Our first step was to get an interview with Barbara, our contact from Info Support. The first interview had the following goals.

1. First it is important to get to know Info Support as a company. What are their goals, what types of projects do they have, and what type of employees do they want.
2. The second goal is to get a better idea of their question for us. Currently the question is very broad, which makes it difficult to work on.
3. The final goal is to get an idea of their recruitment process. This will hopefully provide us with a better idea of the company goals.

To achieve these three goals we made a list of possible questions to ask during the interview. The plan is to structure the interview in the following way. First we ask for an introduction of Info Support as a company. If we feel that we have enough information gathered about Info Support we will ask what they expect from this collaboration. Finally we will ask Barbara to describe the recruitment process.

Reflection 1

The interview was conducted by Gert and myself. The interview went really well and we got answers for all our goals. From the interview we got the following answers to our goals:

1. Info Support is a company that does software projects many different big companies. The employees often will work at that company during the project. This is why Barbara said that employees are often called consultants.
2. The question from Info Support results from the fact that while the website is used a lot most people are coming to the website, it is always from other websites. Info Support wants us to focus on students and young professionals because we are in that demographic.
3. The recruitment process is extensive and fairly strict. The recruitment starts with an interview about motivation and personality. After this a list of questions need to be filled in testing the capabilities of the interviewee. A second interview is taking which is more technical. In this interview, beside the recruiter, a unit manager and a teacher are present. They will test your ability to work in a team and to handle the complexity of the tasks.

Besides the answers to the goals there are also some other interesting things we want to remember from the interview:

- The first interesting thing is that the employees are more like consultants, than just developers. This is something that is not clear from their website, and thus a possibility for improvement.

- The recruitment is currently a complex system which seems to work well since they have a very low number of students drop out
- Barbara stated that the website is updated frequently.
- Barbara also stated that while they get many students, it is mostly through other website which link through.
- The students they hire almost always finish their projects. This is something that should be mentioned on the website.

Interview 2

Later in this week we had a second interview with Info Support. This interview was not taking by me, but I did help extensively with creating a plan. Our second interview is with Sigrid, who is supposed to know more about the technical side of the website. For this interview we have the following goals:

1. Get elaboration on a few things which were not completely clear from the first interview
2. Get a better idea of what type of people they want to attract and what steps they took to get them.
3. Finally, we wanted to use master-Apprenticing techniques to get a better idea of the website. Our idea is to show Sigrid a page on the website and ask her to explain the thoughts that went into the design.

The things we would like elaboration on from the last interview are the following:

- How is the website designed to get people that want to have a job which is like a consultant?
- Is the goal for Info Support to get more students that apply, or that less students apply, but that they are a better match. This would cause less rejections.

Reflection

The second interview was conducted by Gert and Paul, with Paulo taking notes. The whole interview is written down at <https://docs.google.com/document/d/1j2uM9k4B11gXkMZCqfP8tiVvc30IFVVYX5pGVuXMSZc/edit?usp=sharing> The interview went well but there were some points we can improve on. The first thing is that the interview was not really led by us, but by the interviewee. This made it more difficult to get to the questions we want. The interviewers were also too easily content with the given answers. Finally, the Master-Apprenticing did not work as intended. These thing we will have to keep in mind in the following interviews

Week 4

Reading

R.1

Following is a small summary of the text. Notes that I have taken during reading can be found on google Drive in the Notes folder.

Summary: The problem with cognitive illusions is that they are much more stubborn than visual illusion. People are able to learn from past events but do not easily change their beliefs. An example the author gives is a research in which 14 clinicians were compared to a simple algorithm. In 11 out of 14 cases the algorithm performed better. Even though this was substantial evidence that algorithms work better for some task none of the clinicians were convinced. The author states that humans often prefer humans over computer, even when the computer performs much better.

The author continues with a story in which he shows that in many occasions just following a written out process for a task is the best you can do. The example he uses is of hiring people. The best thing you can do is to beforehand determine a few traits which are important and only focus on those for every interview. This is not a difficult process but just requires discipline.

The author asks himself when you can trust an expert intuition. The answer is that it depends on how regular the situation is, and how many opportunities the expert has had to learn about the situation.

The last part of this week discusses the difference between the inside and the outside view when working on a project. The inside view looks at the own experiences of the worker and forecasts the results of the projects based on them. The outside view means that you look at similar projects and what results they achieved. Only looking at the inside view often results in too optimistic expectations.

R.2

For this assignment I am in a group 3 with Clement, Casper, Ruben, Sven, Jeffrey, Paulo, Jesse and Stijn. We have decided that the best method of working is when all students do a part of every sub-exercise. I will discuss the parts on which I worked. An overview of our results can be found at: <https://docs.google.com/document/d/1Hmz1v2LguTpu-ew5onKEr7ux7rPWGUeJZL345QpbUng/edit?usp=sharing>.

- a The first step is exploring the definitions of truth. We have done this by looking at five different theories, and divide those theories into different writers. We have looked at the following five theories: Correspondence, Semantic, Deflationary, Coherence and Pragmatic. I will be looking at the Semantic Theory together with Clement. I will focus mainly on the theories by Davidson, while Clement has looked at the theories by Tarki.

I will first give a small summary of Clements part because Davidson uses things from Tarki. Tarki introduces the concept of truth within language using T-conditions [21]. T-conditions are sentences in the form *name* is *Predicate*. An example is the sentence "snow is white". This sentence is only true if all snow is white.

Davidson extends this idea by stating that this type semantic theory develops a basis of a holistic conception of linguistic understanding[13]. Davidson states that it is possible to reach a full meaning of a language if it is possible to develop a theorem that specifies what a sentence means, for every sentence in the language.

b TODO

c The last step is to explore and describe two different conspiracy theories. The two conspiracy theories we are discussing are the Flat Earth Theory and the anti-vaccine movement. I will be focussing on the anti-vaccine movement.

The anti-vaccine movement is itself not a conspiracy theory, but the ideas of the movement often are. The anti-vaccine is group that, as the name suggests, is against the taking of vaccines. In recent years there has been a rise in the anti vaccine movement what can be seen in the USA, where more than half of the states saw a decrease in vaccine-rate in the last 10 years[17].

A decrease in vaccine rate can be very dangerous. The problem however is that if enough people are vaccinated, the people that are not are not in danger. This means that there are no immediate effects when being unvaccinated, only if enough people are unvaccinated. The WHO(world health organization) lists six misconceptions about vaccines that contribute to them being anti vaccine[18]:

- 1 *Diseases had already begun to disappear before vaccines were introduced, because of better hygiene and sanitation.*
- 2 *The majority of people who get disease have been vaccinated.*
- 3 *There are "hot lots" of vaccines that have been associated with more adverse events and deaths than others. Parents should find the numbers of these lots and not allow their children to receive vaccines from them.*
- 4 *Vaccines cause many harmful side effects, illnesses, and even death - not to mention possible long-term effects we don't even know about.*
- 5 *Vaccine-preventable diseases have been virtually eliminated from my country, so there is no need for my child to be vaccinated.*
- 6 *Giving a child multiple vaccinations for different diseases at the same time increases the risk of harmful side effects and can overload the immune system.*

These are all interesting reasons, but I will highlight two of them further. The first point I would like to discuss is the fourth misconception. This misconception is popular in groups that don't trust the government or science. This creates ideas like the government using vaccine to control the population.

The second interesting misconception is the fifth. This misconception shows a kind of problem that vaccines have. If a vaccine works too well, people will forget why they are needed since the diseases are not common anymore. This effect can be observed when looking at the trust that countries have in vaccines. In the developing countries, like Ethiopia, are the most trusting in vaccines[16]. This is most likely caused because in those countries the effects of vaccines can be seen the most.

Exercises

E.0

With everybody taking the course we are collecting questions for Sven van der Zee. The questions can be found at: https://docs.google.com/document/d/12Cg9o90rfm9ZM15XyK_gVCbn3rpGS0q-3sg4W8x-czY/edit?usp=sharing

Sven van de Zee is the Senior Requirements Analysis at the Nederlandse Spoorwegen. He is very experienced in the field of requirements engineering and thus can teach us a lot of things. The two things I am most interested are the answers to the following questions: "What would you say is a requirement?" and "What is your standard process for finding the requirements?". As an extension to the last question I would also be interested if there are big differences between the processes in different companies.

E.1

- a I am part of the Info Support Group. We have the assignment from Info Support to look at their website and think about how it could be improved using requirements engineering techniques. This website is a possible career tool, which means that examining will be good for this exercise.

Last week we started with this assignment and so far have done two interviews. Information on these interviews can be found in section .

- b Because I am part of the Info Support group the plan is for us all to interview a worker from Info Support. In this interview the plan is to get an idea of the working background of the interviewee and how the other jobs compare to his current job at Info Support. We will also ask the interviewee for their opinions on the website. Important is for us to know if the core principles of Info Support are clear from the website. An overview of the plan and the questions can be found at: <https://docs.google.com/>

document/d/1MI_Xpl6SapmVF4h9q3UA0B1i28v9YZzRZZ_CwyKINKk/edit?usp=sharing

Sadly, we were not able to get enough people from Info Support to interview. This means that I will be interviewing someone outside of Info Support. The plan for the interview will be similar but I will skip the questions about Info Support. The overview of my plan for the interview can be found at: <https://docs.google.com/document/d/1gZajR84-1H9N9xZ11b95QI40PBV69NodAIiXWg3C2x8/edit?usp=sharing>

The overall structure of my interview will be the following: First I will ask for an introduction into his education and past work. This will give me an overview of things to talk about.

In the second part I will ask about the transition from studying into working life. I want to know what the biggest differences are and how he dealt with them.

The third part of the interview will be focussed on his current job and how he got where he currently is. I also hope to get to know if this was his goal and if he is happy with his job. I hope that I can transition this into a discussion about what he feels is important in work and what he looks for in a job.

Finally I will ask him about the Info Support website. I will ask him what he thinks of the website. I will then ask him what he thinks Info Support is for a website. I will then reveal to him that the workers are like consultants. It will be interesting to see if he thinks the website represents the company well.

E.2

I will now describe two Requirements Engineering scenarios. I will describe what the main setup and problem is. I will then discuss what the parts of the scenario is.

1. My first scenario is in the field of AI. What is interesting about AI is that most companies have data but don't really know how to use it. All companies want to do something with AI but only because it is the hip new thing. This creates situations where the goal as well as the path to it are not very clear. Using requirements engineering techniques can help to clear these things up.

In my example we are asked to help an auto car lease company. The company only leases electric cars, which means that the cars gather data. They want you use this data to better determine what type of contract fits the driver. The challenge of this scenario is that the cars are gathering a lot of data and determining what would be best to use is tricky. This is also an example of a scenario where a complex result might not necessarily be the best one. Besides this it is also important that the workers in the

company understand what you have done with the data and that it fits in the the working environment.

2. My second scenario is in the field of web development. A company feels that there website is not popular enough with older people. Your task is to improve the website so it is more accessible for older people. The company has not done any research on their own yet, but has some budget to help you.

The difficulty of this scenario is that the problem sounds simple but does not have be. There can be many reasons why a website is not popular for a specific demographic, and all those reasons will require another solution. Another thing to keep in mind is that you don't want to upgrades of the website have a negative impact on the other visitors.

E.3

In the Netherlands a corona app is developed. This app is created to combat the spread of Covid 19. I will now discuss two requirements of the dutch corona app and why I think they will fail. Note that I am only looking at the dutch app and will assume that the app will not be mandatory.

1. *People will be able to warn all other people they came close to if they get corona:* The idea of a corona app is that people are being tracked using their phones. This means that the app will know whi you have been close to. There are however some things which will make this process much harder than it might seem. The first one is that being tracked requires having your phone with you. For many people it is not normal to always carry their phone with them. While this is a small problem that could be alleviated by changing some habits the bigger problem is that the corona app is not mandatory in the Netherlands. This means that it is very possible that you have been close to people that don't have the app and thus won't be alerted.
2. *People will know if they have been in contact with a corona patient:* This requirements is very similar to the first but is slightly different. The idea of the app is that you will be alerted when you have been close to a corona patient. This requirements has the same problem as the former because it also relies on people using the app. An added problem however is that it is not determined how long you have been close to someone.

References

- [1] I Elaine Allen and Jeff Seaman. "Grade Change: Tracking Online Education in the United States." In: *Babson Survey Research Group* (2014).
- [2] Hugh R Beyer and Karen Holtzblatt. "Apprenticing with the customer". In: *Communications of the ACM* 38.5 (1995), pp. 45–52.

- [3] Milagros Castillo-Montoya. “Preparing for Interview Research: The Interview Protocol Refinement Framework.” In: *Qualitative Report* 21.5 (2016).
- [4] Tinggui Chen et al. “Analysis of User Satisfaction with Online Education Platforms in China during the COVID-19 Pandemic”. In: *Healthcare*. Vol. 8. 3. Multidisciplinary Digital Publishing Institute. 2020, p. 200.
- [5] David Dunning. “Chapter five - The Dunning–Kruger Effect: On Being Ignorant of One’s Own Ignorance”. In: ed. by James M. Olson and Mark P. Zanna. Vol. 44. *Advances in Experimental Social Psychology*. Academic Press, 2011, pp. 247–296. DOI: <https://doi.org/10.1016/B978-0-12-385522-0.00005-6>. URL: <http://www.sciencedirect.com/science/article/pii/B9780123855220000056>.
- [6] Aaron French. “The Mandela Effect and New Memory”. In: *Correspondences* 6.2 (2019).
- [7] Asaf Gilboa and Morris Moscovitch. “The cognitive neuroscience of confabulation”. In: Jan. 2002, pp. 315–342.
- [8] J Grohol. “Become a better listener: Active listening”. In: *Psych Central* (2018).
- [9] Daniel Kahneman. *Thinking, fast and slow*. New York: Farrar, Straus and Giroux, 2011. ISBN: 9780374275631 0374275637. URL: https://www.amazon.de/Thinking-Fast-Slow-Daniel-Kahneman/dp/0374275637/ref=wl_it_dp_o_pdT1_nS_nC?ie=UTF8&colid=151193SNGKJT9&coliid=I30CESLZCVDL7.
- [10] James M Lampinen, Jeffrey S Neuschatz, and David G Payne. “Memory illusions and consciousness: Examining the phenomenology of true and false memories”. In: *Current Psychology* 16.3-4 (1997), pp. 181–224.
- [11] Sally Maitlis. “The social processes of organizational sensemaking”. In: *Academy of management journal* 48.1 (2005), pp. 21–49.
- [12] Sally Maitlis and Marlys Christianson. “Sensemaking in organizations: Taking stock and moving forward”. In: *Academy of Management Annals* 8.1 (2014), pp. 57–125.
- [13] Jeff Malpas. *Donald Davidson*. 2019 (accessed September 27, 2020). URL: <https://plato.stanford.edu/entries/davidson/>.
- [14] Amy Milton. *Can we edit memories?* 2019 (accessed September 18, 2020). URL: https://www.ted.com/talks/amy_milton_can_we_edit_memories.
- [15] Rebecca Oxford and David Crookall. “Vocabulary learning: A critical analysis of techniques”. In: *TESL Canada journal* (1990), pp. 09–30.
- [16] Nicole Lyn Pece. *This is the most anti-vaxxer country in the world*. 2019 (accessed September 27, 2020). URL: <https://www.marketwatch.com/story/this-is-the-most-anti-vaxxer-country-in-the-world-2019-06-19>.

- [17] Ed Pilkington. *US states saw drop in vaccine rates for children as anti-vaxx theories spread*. 2019 (accessed September 27, 2020). URL: <https://www.theguardian.com/us-news/2019/nov/16/vaccines-measles-mumps-polio-hepatitis-b>.
- [18] Unknown. *Six common misconceptions about immunization*. accessed September 27, 2020. URL: https://www.who.int/vaccine_safety/initiative/detection/immunization_misconceptions/en/index3.html.
- [19] Nicolas Villain. “Ultracr pidarianisme, biais cognitifs et Covid-19”. In: *Revue de neuropsychologie* 12.2 (Apr. 2020), pp. 216–217. ISSN: 2101-6739. DOI: 10.1684/nrp.2020.0549. URL: <https://doi.org/10.1684/nrp.2020.0549>.
- [20] Thierry Volery and Deborah Lord. “Critical success factors in online education”. In: *International journal of educational management* (2000).
- [21] Jan Woleński. *The Semantic Theory of Truth*. accessed September 27, 2020. URL: <https://iep.utm.edu/s-truth/>.
- [22] Jack Zenger and Joseph Folkman. “What great listeners actually do”. In: *Harvard Business Review* 14 (2016).