Participant #4: Okay. Well, basically I try to get this (the values from the meta-analysis provided in the description) into the prior.

Interviewer #1: Okay.

Participant #4: And launched. Well, because this information from the prior service was not in the same scale as the parameters, as far as I understood.

Interviewer #1: Yes.

Participant #4: Anyway, I tried to simulate this data as well as I could.

Interviewer #1: Okay.

Participant #4: And I went back to ...

Interviewer #1: Do you want me to send you the response that you wrote?

Participant #4: I would not ... Yes, that would probably help.

Interviewer #1: Okay, let me quickly send you that, because I have that. You said something about ... which was very interesting. Let me just ...

Participant #4: I should have kept your code.

Interviewer #1: That's fine. I mean, I have what you wrote.

Interviewer #1: Weird. This is what you wrote in the survey. You said that you did not want to set up a beta distribution parameter with mean and standard deviation, so you instead drew probabilities.

Participant #4: I wanted to but, as far as I remember, I'm not as familiar with the beta distribution.

Interviewer #1: Okay.

Participant #4: And the standard one is ours is parametrized as often beta, not a mean and standards deviation.

Interviewer #1: Yes.

Participant #4: So, that would be more difficult for me, and I thought in the end it wouldn't make such a difference. So, I take it to be a normal, and I [inaudible] use this to generate probabilities from those information. Then I do something like this. Size 128, I guess. Delete. Oh, mistyping. Oh.

Interviewer #1: I think there's another one. At the standard deviation, you wrote 28. Could it have been 128? 5.93 by-

Participant #4: Oh, thank you. Yeah. Well then, the probabilities and then the numbers ... I guess we are good. Then I tried to use the parameters from here. Let me try to understand again why I did ... Well, the alpha was a null, so [inaudible] log sheets and I got this mean. This has mean. But now, I-

Interviewer #1: I see.

Participant #4: Oh. You said you had my answer there.

Interviewer #1: Yes, it's written. student's t(3.5, 0.3).

Participant #4: Yes.

Interviewer #1: Yeah, I think that's-

Participant #4: Oh. You were saying, I think, it was ...

Interviewer #1: If you go back to the survey, it should be here.

Participant #4: Probably [crosstalk 00:05:46].

Interviewer #1: It's written in blue. Do you see your prior for the intercept parameter?

Participant #4: Oh.

Interviewer #1: Above the dropdown menu, do you see that?

Participant #4: Mm-hmm (affirmative).

Interviewer #1: That was the prior, you selected.

Participant #4: Probably. Done. I guess I ... had these and then ... Oh. [inaudible] Right now, I'm having difficulty with this part with intercept parameter. Your prior for the intercept parameter.

Interviewer #1: That's what you chose in the survey.

Participant #4: Uh huh.

Interviewer #1: Okay.

Participant #4: Mean difference. Yeah. I'm not very good with doing this and talking about it at the same time, it seems. [crosstalk]

Interviewer #1: That's fine. Let's just-

Participant #4: [crosstalk] set the prior. Uh huh.

Interviewer #1: Let's just focus on-

Participant #4: Oh. I'm trying to remember here. Right now I'm not remember what the vertical and the horizontal part of the square is.

Interviewer #1: Oh, okay. The horizontal thing is changing the mean, and the vertical thing is changing the standard deviation.

Participant #4: Okay.

Interviewer #1: Anyway.

Participant #4: [inaudible] around here. And somehow this made sense when I did it. I don't remember how it made sense. Is this data-

Interviewer #1: But that's what you chose, yes.

Participant #4: Okay, okay. I'm seeing this three here in the T, and I'm thinking it's about the number, the degrees of freedom but it's about the mean and scale. So, it's okay.

Interviewer #1: Yes.

Participant #4: Yes, probably something. I go up here. Oh. I tried to adjust until I got those numbers over there.

Interviewer #1: Okay. Okay, that's fine. You don't need to repeat that, but I'm just curious why you used a binomial process to get the mean.

Participant #4: Oh. Mm-hmm (affirmative), good question. Because every time the subject had the choice to, the person had a binary choice to go on or [inaudible] trying.

Interviewer #1: Okay. Okay, I see.

Participant #4: And it would [inaudible] respective about 128 times maximum.

Interviewer #1: I see. Okay. Okay.

Participant #4: Probably, it wouldn't make much of a difference.

Interviewer #1: I think it just makes a little bit. I mean, it doesn't make a lot of difference, yes. I guess the other question I have is: did you consider modeling it as a Poisson process?

Participant #4: Not much.

Interviewer #1: Okay.

Participant #4: I didn't really think about it. But because it was very far from 128, probably wouldn't make much of a difference. Probably, the way the ... question was posed [inaudible] choice, you could go on and stop. You have a maximum 128. Maybe if there was no maximum number, then I would have gone for the Poisson. If the prior information here had been somewhat about in the log scale already, I would probably have gone with a Poisson distribution then.

Interviewer #1: Could you elaborate on that?

Participant #4: I didn't really think much about it. I didn't think-

Interviewer #1: Okay.

Participant #4: What? Which of the two is the best option? [inaudible] about the beta. Sorry, the binomial. Because of this, you have a maximum number size. Each time you have a decision to make, so I thought more instinctively on a binomial distribution. Well, the model is Poisson and really, Poisson is a binomial with a sufficiently large number of times, so that wouldn't make much of a difference.

Interviewer #1: Right, okay. So, that's how you chose the ... Could you show me the R script again?

Participant #4: I remember I did something like that.

Interviewer #1: Okay.

Participant #4: I don't remember now if that was a really good idea.

Interviewer #1: No, this is fine. I mean, this is one way of doing things. It's interesting for us to know how you do it. Oh, I see. From that to that. Okay.

Participant #4: I guess I could think about a standard deviation among different times right at the same [inaudible 00:13:06]. Of course, I don't really want standard deviations.

Interviewer #1: Okay. Let's go back to the survey, the html file.

Participant #4: In [crosstalk] now?

Interviewer #1: Yeah, so the same question I have is how did you choose this prior? You don't need to do the calculation, but you can just tell me quickly.

Participant #4: Okay, okay. Well, we didn't have information. As far as I understood, it was not the objective of such studies to estimate alpha. It was an objective just to estimate beta. So, because of both, I thought more of a weakly informative prior. I don't remember now if it's more about something about the RMS or if it's something about [inaudible] arm, or if this is something from Gelman's ...

Participant #4: Is Gelman the right pronunciation? G-E-L-M-A-N?

Interviewer #1: Yes, I think so.

Participant #4: Oh. Him, yes. Or if it's something about his work on weakly informative priors. But I thought about 2.5 times the standard deviation. I had the standard deviation then, and I was yet to think about the scale of the ... distribution around zero because it was the most intuitive allocation for the mean difference.

Interviewer #1: How did you arrive at that number? Like, 2.5.

Participant #4: [inaudible] did. Oh, here. Oh, from where? 2.5?

Interviewer #1: Yeah.

Participant #4: Oh, how did I use.

Interviewer #1: No. Why did you use 2.5? I guess that's my question.

Participant #4: Yes. First because I thought it was a good scale for a weakly informative prior.

Interviewer #1: Okay.

Participant #4: Then I thought so because, if I recall correctly, I chose it because it was the default prior for beta in [inaudible] arm. The R is 10. Package, which looks like a GLM for R. Or because I read it in that article, 2008. I don't remember the year.

Interviewer #1: Oh, the Gelman book, you mean? Okay.

Participant #4: I had the book but I don't remember. No, no, it's an article about ... If you search articles for weakly informative priors-

Interviewer #1: I see.

Participant #4: You'll find it, probably.

Interviewer #1: Okay.

Participant #4: I can give you the citation right now.

Interviewer #1: No, that's fine.

Participant #4: Here. Well, about the beta, is there anything else?

Interviewer #1: No. Okay. I'll look at that paper. Don't think I've read that.

Interviewer #1: Let's go to the next page.

Participant #4: Oh, just a comment on this paper.

Interviewer #1: Okay.

Participant #4: If I recall correctly, in this paper they depend ... T distribution with one degree of freedom. I don't know how to pronounce Cauchy in English. [crosstalk]

Interviewer #1: Yeah, Cauchy.

Participant #4: Somewhere, yeah, where he stands, weak, there's someone saying they regret they did it to have proposed the Cauchy. They prefer now something like three or seven degrees of freedom.

Interviewer #1: Yeah, that makes sense.

Participant #4: I've seen some statistician on Twitter calling it Gelman's Super Silly Distribution. But the scale is there, if I recall correctly.

Interviewer #1: Okay. That's interesting to know, I think.

Interviewer #1: Okay, let's quickly go to the next page.

Participant #4: Hello?

Interviewer #1: Yeah, I can hear you.

Participant #4: Okay, next page. Okay, next page.

Interviewer #1: This takes a little bit of time to load, but if you scroll down to the next ... No, this one. This is what you've already seen, but this visualization, what it's doing is it's taking the same prior probability density but it's transforming it into the scale of lambda. So, that's the response scale. Could you go up? Could you scroll up a little?

Participant #4: Oh.

Interviewer #1: Yeah, this one.

Participant #4: This?

Interviewer #1: The middle one. No, the middle one.

Participant #4: Middle one. Okay.

Interviewer #1: Yeah.

Participant #4: Confirming these parameters, there is one scale. Okay. Okay, here I would probably come back to that same and see if there's something wrong there. Then 3.5, 0.3.

Participant #4: Okay. Right now, what I'm thinking about is looking at 128 to see if there's too much distribution after it, and from what I see there may be something. But I don't think it's too much, and because it's not a Poisson, there's nothing I can do about it. Well, it's centered around the information we had before.

Interviewer #1: Okay.

Participant #4: So, I guess I'm fine with this.

Interviewer #1: Okay. I mean, I guess my question more is how is this ... looking at this, how are you using this information? What are you looking for in this visualization?

Participant #4: I guess here I am looking for ... because if I could choose this one or the other one, I would probably choose this one first because I had to use something like I used for the other one. But looking at this one here, I am seeing more clearly the information you give me on the case description. We had, let me recall the number. Something about 24 and 44 as a mean, so we have this here and we have some distribution, which I guess it's reasonable about this one here. And we don't have too much distribution here of the prior after 128, so I guess it's reasonable.

Interviewer #1: Okay. That's interesting. Would you change your prior in any way?

Participant #4: No. No, I'm very happy with it. Happy for now.

Interviewer #1: Okay. Okay, let's go on to the next visualization then.

Participant #4: Hello?

Interviewer #1: Yeah, let's go on to the next visualization. Scroll down.

Participant #4: Mm-hmm (affirmative).

Interviewer #1: Oh, before this, I just had one question. Did you use the dropdown at all, the dropdown menu?

Participant #4: Please repeat.

Interviewer #1: Did you try to use the dropdown menu at all?

Participant #4: The dropdown? Oh, there was a normal here. Yeah, I think. But then I'd prefer the student's t distribution because it would be a little more conservative. But if there was only the normal one, I would be happy with it too.

Interviewer #1: What do you mean conservative?

Participant #4: Conservative in the sense that it allows more probability in more extreme options, parameter numbers. It's a prior [inaudible 00:25:19]. It's not a data itself yet.

Interviewer #1: Okay, that makes sense. Okay, let's come back to this one. So here, this is the prior predictive probability distribution. Just to give you a quick overview of what that is, if your prior distribution is assumed to be the data generating process, then I'd sample from the prior distribution, fit the model, and visualize the predictions. That's what the prior predictive distribution is. This visualization shows you what that looks like.

Participant #4: [crosstalk] Okay. This is the same I had already [inaudible 00:26:14]. Okay. Let me try again that one. If there's a problem, I'll go back to it. Okay. [inaudible] conservative. No. Here there are 20 curves, right?

Interviewer #1: Yes.

Participant #4: Okay. Oh, I guess I'm okay with it.

Interviewer #1: What?

Participant #4: I'm not sure it is ... I thought it would be a little more distributed widely [inaudible] to the sides. But I guess it's fine.

Interviewer #1: Why did you think that it would be more widely distributed? Could you tell me what you were expecting?

Participant #4: I was not expecting something very concrete. I'm too much used to means and not so much with posterior predictive values. But, considering the SD, 5.9, and the scale here from zero to 50, maybe I would be more comfortable if I could block this out and see from here to here because the maximum number was 128. Probably, it would be as widely distributed as I would expect. I guess it was more of a visual feature than exactly the numbers that are represented.

Interviewer #1: If you change the position of the widget, like change the prior, do you see ... could you show me what you were actually expecting if that value exists?

Participant #4: Whoa. This is weird. I was expecting the lines to move, not the marks on the-

Interviewer #1: Scale.

Participant #4: Axis. Yeah.

Interviewer #1: Sorry. No, we couldn't show the whole thing because sometimes the values and detail were so high, so we decided to move the axis.

Participant #4: Oh, that's okay. I guess I was more expecting something in relation to the screen than about the x-axis. I'm okay with that x-axis as it was before. Let me see. I'm okay with it, with the numbers. I was just expecting it to occupy more of my screen.

Interviewer #1: I would just suggest you to switch to the normal distribution and talk about what differences you see. I just wanted to ask you to change the dropdown to the normal distribution.

Interviewer #1: Hello?

Participant #4: Please say that again.

Interviewer #1: Wait, let me turn off my video. Okay, I wanted to ask you if you could change the dropdown to the normal distribution to look at what that looks like.

Participant #4: Whoa.

Interviewer #1: And contrast this information to what you saw before.

Participant #4: Mm-hmm (affirmative). Well, I wanted it to occupy more of my screen. Then I'm very happy now. Probably, I would be a little happy if I could make 128 to appear. Okay, happier now.

Interviewer #1: Okay.

Participant #4: Okay. Visually, I'm more happy when 128 is on there. Here, I'm happier with this visually. But then, it is different and this edge issue is more because of the binomial versus the Poisson distribution. There's not too much that's over there. Maybe I wouldn't change, if I were sure about this. I'd really like to see this this way. Now, I'm considering maybe the normal distribution would have been a better option than the student's T.

Interviewer #1: Another question I have is: why didn't you change the standard deviation? Why did you decide to change the mean?

Participant #4: I did change the mean? Oh, sorry.

Interviewer #1: Could you tell me what your [crosstalk 00:34:39]-

Participant #4: Oh, I guess I was happy with this. First, sometimes the y- versus x-axis in this gray area confused me a little, and because I had some specifics in mind. I could also choose to write them. Sometimes it could be, it would be easier for me. And we are around that same mean. We are reasonably close to 128 being on the margin, so I guess I am happier with this. Now, occupying a lot more of my screen now, among subjects' distribution.

Interviewer #1: Okay, that makes sense. Cool. Should we move on to the next page? This is going to be ... Let's quickly do the next page and then yeah, that's the last page of this section.

Participant #4: Okay.

Interviewer #1: Again, this is similar to what you saw before but this is only like, we changed the parameter to the mean difference parameter.

Participant #4: Mm-hmm (affirmative).

Interviewer #1: It takes a while to load. Okay, it's loaded. Let's go to the next, second visualization. The first one you've already seen before.

Participant #4: Okay. I have this.

Interviewer #1: Now, scroll down. No, no, no. You've done this.

Participant #4: Okay, now?

Interviewer #1: Yeah, this one. Again, this is the response scale for ...

Participant #4: Okay. Oh, it's the same thing but with different numbers. Well, I guess I would stick to the same. That one. Now, I really would want to be able to have something about times instead of difference here. Anyway-

Interviewer #1: Wait, could you repeat that?

Participant #4: Mean ... Right. The information we had on the study was all in the linear scale, not in the log scale.

Interviewer #1: Yes, yes.

Participant #4: Sometimes I miss this. Right now, I feel I wanted the information to be on the log scale also. But everything else, I think, with what we have, I'm as happy here as I was also here, too. As we move on.

Interviewer #1: Wait. I didn't quite understand that. Are you saying that you are satisfied with this prior?

Participant #4: Yes, yes. I hope so. I guess so. Now, because you asked again, and because of the last time, I wonder if I shouldn't use a normal distribution. But then, because we are not using the ... because it's prior and we want it to be weakly informative, then I would be happy with either. Probably, the normal distribution was the first one. I'm not sure which would be most probably, but possibly I would have stuck to the normal distribution if it was the default option.

Interviewer #1: Okay. I guess one question I have is: how did you interpret the information in this visualization? Like, when you look at it, what did you understand from it?

Participant #4: Well, for me it's easier here than in the log scale. [crosstalk] probably-

Interviewer #1: I mean, when you say it's easier, what things are you talking about?

Participant #4: Because every time I see a number in the log scale of a parameter, I have to back-transform to think about it. An example, if someone says beta (parameter) in the Poisson distribution ... beta [inaudible] plus one, I have to ignore it. It's something from one divided by 2.7 to 2.7 times. I don't really reason in the log scale.

Interviewer #1: Okay.

Participant #4: So, it makes more sense to me to see that this problem the same size here because it's one time, and maybe it's two times or four times or the equivalent of the other side, the number of times it will pop the balloon.

Interviewer #1: Okay.

Participant #4: I'm used to thinking about one and a half, two times. So, it's more probable anyway, and two times it's possible.

Interviewer #1: Okay. Cool. Let's go on to the last one.

Participant #4: Mm-hmm (affirmative). I believe here.

Interviewer #1: Again, this is the prior predictive, and you're only changing the prior on the mean difference parameter. You should assume, again, that we've chosen a very good prior for the intercept parameter.

Participant #4: Okay.

Interviewer #1: I'll just let you interact with this. Again, if you could tell me what is the information that you're seeing, how are you interpreting it, and does this affect your decision at all? If it does, then how does it affect your decision?

Participant #4: Okay. Well, here I had zero and 0.6. I thought it was more like 0.78. Let's see if it looks reasonable. Wow, the student's T. Student's T here is much more reasonable than when we were talking about the alpha. I guess it's as widely distributed in that as I expected, even though there's something over there. It's something we possibly have to live with because of the Poisson instead of the normal, instead of the binomial.

Participant #4: But, because you asked me the last time to look at the normal, I'm eager to see how it looks like because I'm guessing it would look even more reasonable. Oh, there it is. It even stopped with 130. I'm happier again with the normal than with the student's T. Also, because of the boundary, if I could top off everything after 128 and look at what came before, and if I could count how much percent of this was after the 128, maybe I would accept the student's T, considering I'm still about to gather data. But visually, the graph using the normal distribution looks much more reasonable than the one from the student's T.

Interviewer #1: So, if you could elaborate, by reasonable, do you only say that... is it predicting too much probability for above 128? Is that what you mean by reasonable?

Participant #4: Yes. Two components here. First, the graph stopped at 128, so I tend to feel more comfortable with this. Second, it's really psychological. I'm seeing it occupy a lot more on my screen, so I can see the distinction between persons and so on. So, I feel like it looks more like a posterior predictive, or a predictive, really, person, because the first time ... there was a really long tail. It was everything so crammed on my left, I thought it was weird.

Participant #4: If I had a strong conviction that the numbers were right, I would be okay with the student's T, but if I was in doubt between the two, I might pick the normal because of how it fitted more, the support of the weight in the problem because it should be stopped at 128.

Interviewer #1: Okay.

Participant #4: This left tail here is, just because of the density smoothing.

Interviewer #1: Which one? Oh, yes. Yes, that is correct. Because of the density smoothing.

Interviewer #1: I guess, wrapping up, I have two more questions for you. One is: what other information would have been helpful to you when you were selecting these priors?

Participant #4: I can't think of anything except that those numbers up there, I think it's okay because I thought, initially, in terms of binomial distribution. But then the Poisson was already picked. Speaking to the choice of prior distribution, I think it's it. I don't know. I don't think of anything else.

Interviewer #1: Can you think of other instances in your past, like when you had to choose priors, was there any information that you had to consider?

Participant #4: To be honest, right now I'm actually using priors for the first time. In the last month, years, I've been really more then using Bayesian data analysis. But I stick to weakly informative distribution, both in the alpha and in the betas because I didn't have prior information that could really help me. I stick to ... rigid parameters, so I was not preoccupied with boundary issues.

Interviewer #1: I guess my follow-up question to that is: when you say a weakly informative prior, how do you decide what is weakly informative?

Participant #4: Right now, I'm using the same thing, around zero in the log scale and with a scale of 2.5 times ... normalized to, yes, because everything is binary. Or, indicator variables, anyway. So, I'm sticking with that around zero and 2.5 of scale. And for the alpha, because I didn't have any prior information, I stuck to zero and with 10 of scale because it was the prior of something from the same source. I knew it was something that could not be, you know, 0.000. Would be more like 10% or 70%, so any weakly informative prior would be okay.

Participant #4: I didn't have any situation until now that I had to think much about the prior. But another thing about the weakly informative prior is using pragmatist analysis. There was once or twice there was a variable I didn't really think it was such a good idea to have it in the model. When the variable was in the model, other variables would have more unreasonable values. If it wasn't in the model, everything behaved a little more like I expected. These variables had a few categories which had few subjects in these categories. So, there's this argument that a prior, not only it helps the problem to fit the model, but also it helps a little to avoid grossly incorrect results because of poor chance of the sample characteristics. Something light regularization.

Interviewer #1: Yeah, that's a [crosstalk 00:53:17]-

Participant #4: Yes, while I do not really intend to go for something that would ensure I had regularized parameters, I thought it would be better to have some prior than to have a flat prior.

Interviewer #1: Okay, cool. Again, this is great. Thank you so much for taking the time for doing this. This is a great insight. Yeah, this is just great.

Participant #4: Thank you. I know it's hard, but if you can please tell me when you have something ready [crosstalk 00:54:13].

Interviewer #1: Okay, yeah. Sure. I have all your email addresses. I'll send you an email regarding the results.

Participant #4: Okay.

Interviewer #1: Hopefully by the end of this year, but let's see if it gets published.

Participant #4: Yes, yes, yes. You never know when it gets published. Good luck with that.

Interviewer #1: Thank you.

Participant #4: Ciao.

Interviewer #1: All right. Do you have any questions for me?

Participant #4: No, no. I guess it's a-