

Transcript of the first expert interview

The interview was conducted on 21.11.2022 from 18:00-19:00. Participants were three experts (E1, E2 and E3), two supervisors (B1 and B2) and one interviewer (IL). One of the three experts took part in the interview virtually.

This is a transcript of the audio recording of the interview, which will be made available to all participants of the interview. The conditions from the previously signed consent form apply to the transcript. This transcript has been anonymized.

This interview was originally conducted in German. Unnatural English formulations can be attributed to that fact.

IL: Hello, I'm the person conducting the interview and I like to be called that. And thank you very much for being here. For doing this with me. I've just been asked what we're doing here. I'm not quite sure what the other bachelor's candidate was doing. I only know it roughly. For me, it's mainly about planning the choreographies that you in your formations. In other words, developing visualizations with which you can plan it well, work with it and then train it in the best possible way, i.e. communicate in training. And I know that you've probably already answered the questions with the other bachelor candidate. But I must ask them again briefly. I assume you've all been part of a Latin formation before. Could you briefly tell me what your role is, i.e. whether you're a coach, a dancer or whether you've done both and how long you've been doing it? Maybe in circular order.

E1: Well, I was in the formation in [city name], which started in 2002, and then became a coach in 2007. I then moved to [city name] and that's when I got straight into the coaching role. But for example, last year, because of Corona, I participated as a dancer, but normally I'm the coach.

E2: For me, it's like this: I started dancing in the formation in 2005 and then joined the then B formation in 2016 as a coach, so to speak, and since last, no, since this year, I've been a dancer again.

IL: Okay, and then expert 3 online.

E3: Exactly, yes. I started dancing competitively at [club name] in 2010, got into formation dancing at the same time and then danced in the first national league for many years. I also danced in the German championships and since last year I've been back in [city name], I originally wanted to dance there too, but then it didn't work out with my studies, with the times and with my attendance dates, I'll just say. I wasn't there often enough and this year I slipped into the role of coach a bit. expert 2 and I have swapped positions, so to speak, and I'm now supporting expert 1.

IL: Okay. Yes, that's right. I've already seen you as a trainer when I visited you once. Okay, thank you very much then. As I said before. The main thing here is to make a program for you, if possible. Of course, it would be ideal if you could use it at the end to build the choreographies, i.e. plan the patterns contained in the formation. Do any of you have previous experience with planning such choreographies and perhaps also with digital tools that could be used to do this?

E2: Yes, I think I mainly did the digital work. I got a program from a friend that they use a bit in their formation. But it's a little backyard program that someone wrote for them and there, I mainly created the patterns. Expert 1 wrote them down roughly on paper in a coordinate system and then I tried to adapt them a bit in the program according to the routes, i.e. distances etc., and that's how the patterns of the current choreography came about.

IL: Okay, so this is not a program that you can get publicly in the App Store?

E2: No.

IL: Was there anything about the program where you would say: "That was particularly good, that was particularly useful, a pattern planning program would definitely need that".

E2: Really useful in the program is the drag and drop functionality. I'm only familiar with the version from supervisor 1, where you just enter the coordinates for the pair in the background and that's it. I don't want to go that deep into the program, but for me the version is actually: "I grab this pair, I put it in this place and in the best case it still shows me where the pair comes from". This means that the origin of the path plus the distance covered is also displayed. That was super helpful, and I could also use multiple selection, which meant that I could also move all eight pairs at once or I could just select three and then move them accordingly.

E1: Very practical, yes. And if you have a view from the coach's perspective and from the dancer's perspective, then it's also very practical.

IL: What do you mean by dancers and trainers?

E1: Well, I'm the coach, I see them from above and from the front and when I'm standing on the other side then from the other side.

IL: Ok, so that you can rotate the view.

E2: To invert the pattern, yes.

IL: Ok, were the dancers in the program shown normally in 2D as circles or were they 3D figures?

E2: I had then in 3D as cylinders from a slightly more oblique position. But it didn't help me much, to be honest, because a pure cylinder doesn't show me much more than a point on the floor. That's why I didn't use the function at all.

IL: Okay, so you would also say that there was no added value in watching it again in 3D.

E2: Let me put it this way. The added value in 3D would be there if I had a kind of stickman where I know where his head is and where his body is positioned.

IL: Okay.

E2: That would definitely add value. A pure cylinder does not help me much in constructing patterns.

IL: Okay. You've said that it was just a hobby program, definitely not an officially available one. Were there things that really annoyed you when you were using it, things where you would definitely say that we need to improve on.

E2: I know what annoyed expert 1. It was that I could insert intermediate patterns so easily. I created a lot of them. I think expert 1 originally gave me 16 or 20 patterns. In the end we had 56, because I saw relevant points in between that we had to reach. But that's definitely not a bad thing. Intermediate patterns are super important. Maybe it would help to see how the patterns develop. Otherwise annoyed by the program: I wouldn't know anything now. I rather ... well, the functions that were there were good. But it would be nice to have more functions.

IL: Are these the ones you just mentioned, like drag and drop?

E2: Correct.

E1: I also think that if the program had somehow been a bit more appealing, then perhaps I would have worked with it at some point and not printed out my notes.

IL: Ok.

E1: I have to be convinced of something like that.

E2: In fact, I just remembered, that I could print the patterns as a PDF. And I had no control over that later. When I simply had a sheet in front of me and I had divided up the pairs, i.e. each man and each woman had their dot, then a one could be seen twice in the coordinate system, but there was no marking as to whether it was the woman or the man in the printout. I also didn't have the option to print the whole thing out in color or anything like that. It was just an open circle with the number inside. Because I created the patterns, I knew who was standing where. It just wasn't transparent for expert 1 at the time.

E1: Yes.

IL: Ok. I had just mentioned these intermediate patterns and when I visited a training session, there was already a conflict between you and your dancers that they wanted more [intermediate patterns].

E2: I stood on the dancefloor back then.

IL: Yes, would you generally say that more intermediate patterns are better, because they might give more information, or do they become too much at some point?

E1: Intermediate patterns are not bad. They just require a lot more work. You have to work more with people. Because whether I create five patterns and they just run wildly from there to there or whether we have 20 patterns. You have to be more precise. It takes more time, but you probably end up with a better result in the end. Now I've made him happy.

E2: The fact is that you can also overwhelm yourself with intermediate patterns. For example, if it's a choreography that is danced completely stationary, but the steps are always, let's say, in a two-meter square, then I don't always say: "Okay, you're at this point on this beat, you're at this point on that beat ". It's always up to the person creating the choreography to come up with meaningful intermediate patterns. You have to be a bit selective. So as soon as I really have an active pattern change, intermediate patterns make sense, because then I can also, let's say, reflect the image dynamics. The example we had before is when I go from a diagonal into a straight line, then I shouldn't have people walking individually in one place, but I have to tilt the whole thing. This means that some have a small path, while others have a large path, and they have to adapt to each other in such a way that the line always remains. Whether this line stands in 45 degrees, 30 degrees or 20 degrees angle in space is completely irrelevant. It has to remain one line. And that is, what is super difficult to represent in such programs. We didn't have that option. For example, we were standing in a diagonal and the next pattern was a straight line. You couldn't see who had to move how far and how fast. That's always the difficulty in depicting it.

E3: I'll need to have my say too. The program that expert 2 uses, I think it has been around since formation dancing exists and it only contains the most basic functions, just like expert 2 said. The representation in the form of geometric shapes, which used to be Pachisi hats here at TCL, doesn't work at all and that's exactly the problem that expert 2 has just addressed with these dynamic pattern transitions that develop over time. For example, turning diagonals into two straight lines that have a 90-degree angle was not really possible before. You always had to specify the position in one pattern and then in the next pattern. For example, the two diagonals and then the final pattern. And I think it will also make sense if there exists an algorithm ... if you know now, ok, so I'll just put the two diagonals there, they have to be like this afterwards. If you then simply have an algorithm where you say: Ok, I have the position at the beginning, I have the position at the end and the pattern has to develop over 20 beats. That you then simply say: "Ok, let's say I virtually calculate it, then you know:

"Ok. I'll stop here. Here, for example, it makes sense to create an intermediate pattern." I think that's a point that absolutely must be included when writing a program like this nowadays.

IL: Okay.

E1: Maybe you could play the music in the background and the little hats simply move so that you know where in the music which pattern should be. I wouldn't think that would be bad either.

IL: Ok, so the music in the background is already an important indicator.

E1: It wouldn't be a bad idea if you could switch it on and off.

IL: Ok, I also have the question how dancers know when they have to be in a pattern and, usually the music is divided into bars, at which beat in the bar. Do dancers currently need to memorize this during training?

E1: It's counted out and they know: "On beat four, I have to stand in the new pattern".

IL: Ok, and do you think it would make sense to visualize this in the program? That it is explicitly shown there: "In bar four I have to stand at this point in the choreography".

E1: At least that it is included as a remark.

IL: Okay. Yes, I think this might be a good time to share my screen here. Hopefully everyone will see it roughly the same way. Exactly, this is the prototype by supervisor 1 that already has been developed further. I had another question. We've drifted a bit away from the intermediate patterns. You mentioned, and I think expert 3 did too, that it's often problematic that transitions aren't displayed correctly. That we simply have two patterns and that's it. You can always do that. Expert 3 said that a smart algorithm would be great. And that does exist in theory. It would just be interesting to know what kind of transitions there are. Are they just straight lines, so that you walk straight across the dance floor, or are they perhaps straight lines that are strung together like this? Or are they curves that people walk on?

E1: Anything is possible.

E2: I don't think there's a definite answer to that because it really depends on the choreography. In fact, the most important thing about the algorithm should be that collisions between paths are avoided. For example, two pairs cross paths. E.g. you define: "Ok, I have to hold one couple back because it has priority to be in front later". So, for me as a dancer and actually also from a coach's point of view, that's always been the case: The person in front has to get to their position as quickly as possible. In other words, if someone who has to dance behind them has to pass them first, it doesn't make sense to me. But that's not an answer for everything either. It is simply important that when paths cross, there is no collision at that moment.

IL: Okay, so that is also something that occurs frequently during training?

E2: At the beginning, when we're intensely training patterns, then the problem arises frequently with dancers saying: "I'm colliding with this person and I'm colliding with that person and how should we do that" and so on.

E1: Exactly, you could perhaps have the solution in advance so that you see: "It's getting tight.". Then you can tell him: "Hey, he has to pass behind, he has to slow down a bit, that's what the program should tell us. "

IL: Okay.

E1: That would take all the discussions off the table.

IL: Are there any other problems that only become apparent during training? Let's say we have already planned our choreography and then we attend training. What are typical problems that often occur?

E1: Well, if we have relatively close patterns and one woman throws her foot up and the next man is already standing on the other side, then it gets tight. These are simply things where people meet and where the program probably can't calculate that a foot will come up. So yes, things like that tend to be a problem.

IL: Ok, is it also the case that apart from the collisions ... you already mentioned it before, that the distance between two patterns is a problem? Is that also a frequent problem, that we have too long distances or too short distances?

E2: Well, I'd say yes and no. It always depends on whom you ask. So, the pattern I created, I think I could dance them all. But if you then ask others who are possibly taller than me, they say: "Oh, I can't do the distance". That's always an individual issue. On the other hand, it really helps to just look at the big picture: If I have to go three steps, I can't make four meters of distance. That was one of the most important things when planning the choreography, that we can't say: "Ok, we have five steps and eight meters of path here. That just doesn't work". Then we have to adjust the patterns. Therefore, assessing the distance was super important.

IL: Okay, we can just have a look here. In the prototype that already exists, it's now done in such a way, only recorded for the men, that the distance between the current pattern and the next pattern is recorded. Here it's just two meters. If you then continue, you can see that dancer one has to walk another five meters to the next pattern. Would that be enough information, or would you need more?

E2: So actually, I think I would be a fan of it, as it was with the program I had. So, if you were down here that there would be an x at the position the dancer came from. Because as a matter of principle, I'm always interested in where I came from when I create a new pattern instead of where I'm going to. So, I always have to look into the past, because I'm not creating a choreography back to front, I'm creating it front to back. This means that the pattern that comes first is my (expert 3 wants to say something right away, ok) origin, and then it should actually tell me the distance that I have covered to the next pattern. Unfortunately, that doesn't help me much, because in the process of creating the patterns, as I said, I work in a sequential manner and not vice versa.

IL: Ok yes. Expert 3, did you want to say something else?

E3: Exactly. I completely agree with expert 2. It's not just the route that needs to be displayed, but the development. You always have a start image and then I'll just say the end image, quite banal, then you also look at the start image on the first page, but then you have to turn the page around again and say: "Ok, you have to go there". Because in the end, it's all about making it visually better and then you have to be able to somehow display arrows or faded circles with the numbers. "Ok, that was the first pattern, and this is now the second pattern, the current one, where it goes". Yes, exactly. Very good. The way it's shown there. That's good.

IL: I didn't want to interrupt you. I just turned it on to show that we had already pursued the idea. Now, of course, the thing is, there's still quite a lot here. So far, only the current pattern is displayed and the next pattern. And I had already mentioned that arrows, for example, would be nice between the images, or would you perhaps prefer it without arrows, but that you can see the next image already faded out. Do you have any favorite?

E2: I think, for example, lines that at least still show the man with the current location and the next location in this case ... I think it would be useful to have a dotted line in between, because you can also see which paths cross. I think that visualizes relatively well who I could collide with.

E1: I can guarantee there will be conflicts, if the men all run to there and the women to there, then there's bound to be a bang somewhere.

B2: I have another question, because purely from an implementation point of view, it's based on an algorithm. And then, if you make these paths, wouldn't it perhaps even be helpful for you if you said: "Ok, then I would like to change this a bit, this path. That you pull the lines up or down a bit?"

E2: A curve or something.

B2: Exactly. That if the algorithm practically says: "That's a straight line" and you say: "No, but it's kind of a curve". That you can adjust it.

E2: That would definitely help. Yes.

IL: Ok, it should definitely be possible to change the transitions if the patterns are already planned.

E2: As I've already said. I think an algorithm would actually help a lot, but I don't think it's the final solution, because in my experience theory and practice always diverge at some point. And the algorithm helps me to establish a basis and then, in this case, I can adjust the curve. Of course, the path will then be longer, but I would be able to avoid collisions and that would help quite a bit. Furthermore, the dancers would be able to understand it better.

IL: Okay, you just mentioned that the dancers need to look into it. Do they get something like homework?

E1: They should just remember the positions that they stand on.

IL: So, the homework content is to simply memorize the positions in the patterns. Is it also something like, which pose to dance, which steps to do ... is something like that also a part of the homework?

E2: You should go through it mentally. If we've made changes in training beforehand, that people have that in their heads. They should not attend training after two days with all information gone.

E1: But this is mostly wishful thinking.

IL: Ok, have you ever had any requests from...Sorry, expert 3. Elaborate before I continue.

E3: I have to check in from time to time. So very briefly. I also don't believe that the algorithm will be the solution to the puzzle, but I do believe that if you have multiple patterns, that develop over time, then the algorithm can be quite useful. Because then you can decide, for example: "Ok, two diagonals, they have to rotate in this ratio and then, as I said, they become these 90-degree lines. I think then it makes sense. But for every pattern it really doesn't make sense, like expert 2 said, or expert 1? Only if the whole unit practically moves in one block, then I think it will be a very good option. To what you have just described. I think that's very good too. I just think I would do it the other way around. I would always show the next pattern highlighted in color and the last pattern faded, so that you know where it's going. And what I also wanted to ask: Maybe it would even be an option, expert 1 and expert 2 for us, if you knew, for example, that I could a block of four and then move them simultaneously. For example: "Ok, the distance between dancers must now be 50 centimeters larger in this pattern. Then you don't have to move every single dancer 50 centimeters to the right and left, but you simply say: "Ok, there are 5 or 10 pattern, where a diamonds points to the back and three rows at the front " and then I say, for example: "Ok, the men who are now standing in

this pattern must be 50 centimeters further apart". Then you could make it a bit easier in terms of the algorithm. Instead of manually dragging each dancer to the next position. Is that correct?

E2: Yes. I agree. I want to come back to the program again. I could not scale patterns in the current formation. I had to move each individual dancer to their new position to make the pattern more compact. If you could then simply say, as expert 3 said: "Instead of one meter, we now only want to stand 50 centimeters apart", it would then automatically be the same scale for everyone.

E1: How did you do it in your program, supervisor 1?

E2: Supervisor gives manual input.

B1: Yes, exactly. So that's the part the interviewer works on.

IL: That just sounded like a tool with which I can scale an image. For you it is just the formation. Is there a minimal grid resolution? Currently you use one-meter increments and in supervisor 1 tool we got half a meter as the minimum distance. Is there any kind of measurement that I can use as the minimum distance? Half a meter or a quarter of a meter?

E2: The program actually used a quarter meter. However, we never set it to a quarter of a meter, because you can't tell from the distance to the edge of the pattern whether I'm standing 10 centimeters or 40 centimeters away. Half meters is actually the scale we use.

IL: Okay.

E2: I mean, in the best-case scenario, you have the option to choose the resolution. In your example quarter meter, half meter and one meter. Of course, it would be helpful to adjust it.

IL: We've already talked a lot about, how patterns and transitions look like. I want to mention a few more features, that we thought about after I visited you in training. Once it was ... I can't remember which pattern it was in. It was like this: All the men had to stand in a line.

E1/E2: Jive.

IL: Everyone looks towards the stage and moves in the direction of their arms. I remember that very well. It was often the case, for example, that people stood at a bit in a curve. Is the alignment of the dancers something that often causes problems?

E2: Yes, actually almost always.

E1: Yes.

IL: Ok, and that's how it was: Arm and head, and body too, were all pointing in the same direction. Is it also sometimes the case that they point in different directions?

E2: Yes.

E1: It also happens that you look in different directions. Before we changed it, we had a pattern where some people started at the back and others at the front. But now we've actually tried to take that out, because it just makes the whole thing more restless, but it does exist.

E2: So in my eyes, I think I also mentioned it ... it would make sense to have the possibility, if you look at the circles now, that there are two triangles, one larger and one smaller, which I could then use as an example: the smaller one for the head, i.e. for the viewing direction, and the larger one is the orientation of the body in space. I could actually imagine doing that, because then I know: "Ok, my body is facing diagonally, but I'm looking forward. I think that would help too.

E1: That would help a lot for the complete choreography, because you don't have to write it down, but you could inspect it right here in the program. Oh, that would be easy.

IL: Okay.

E3: We even have the one pattern, where we could use that. It's in the Jive, before it goes into this row of eight. When the men dance around each other in the double kicks, we're standing diagonally in two different directions. You could theoretically have seen it if the men had danced like that when you visited our training.

IL: Even if they had danced it well, I probably wouldn't have recognized it, nonetheless.

E3: Nicely saved.

E1: You would definitely have seen it in another formation group.

B2: Supervisor 1 is staying out of this completely.

E1: He just thinks his part.

B1: I am not present. I'm just an observer.

E1: But that certain grin that keeps coming back...

IL: Well then. I'll go to a pattern, where you can perhaps see this nicely. Yes, let's do it here.

B2: Oh, I love it when it turns purple. It just looks so cute.

IL: So here, the dancers are already in pairs. That's why it's only one circle, for both dancers. And I didn't know how to call it properly. You can see elements in the pattern like diamonds. Is there a special term for this?

E1: Rhombus.

E2: For us, these are also simply geometric shapes.

IL: Just geometric shapes. Okay.

E1: Rhombus or diamond, yes. Diagonals.

IL: Yes, I saw that you had diamonds, diagonals and straight lines.

E2: There are even more arrowheads.

IL: Arrowheads? Ok.

E3: The diamond also exists.

E1: We also had a bird in there, but we took it out. It was not recognizable.

IL: Ok, so there are a few. Are there any patterns that cause particular problems?

E1: Diagonals. Always.

IL: Always diagonals?

E1: I think it's mainly in my formation group, but diagonals are terrible. That's always been the case. No matter what choreography we danced.

IL: Would the others also say that diagonals are really a problem?

E2: Diagonals and straight lines actually. The problem with straight lines is when people have to stand 100 percent behind each other, and you can only see half of one person's face. That's a huge pain in the ass, because he's looking right to the person in front and should disappear behind him. But he doesn't. And that is always a difficulty.

E1: But the best program in the world can't change if people just don't understand that they should stand behind each other.

B2: That means we should write software for robots so that you can replace the pairs.

E1: They get electrocuted if they're wrong, that would be something.

E2: Shackles. Expert 3, sorry.

E3: Unfortunately, from a dancer's point of view, it's always very subjective, because there are always people who say they're behind someone. But then, for example, they have a 20-centimeter wider shoulder. And then maybe they don't stand with their heads behind each other, but with their feet. But one of them holds his head at a slight angle and then it's no longer a row. But when it comes to the diagonals, where you practically have to look forwards and align yourself at a 90-degree angle or a 45 degree angle, it becomes extremely difficult to perform this patterns.

IL: Do you think it would make sense for a dancer to be able to see in advance which neighbors in the pattern they need to orient themselves to?

E3: Yes, that is definitely a guide. The only problem is that there's always a chance that you'll say: "Well ok. Then I have to stand like this in relation to my neighbor" instead of first learning and really knowing the position by heart. But if I always say: "Ok, I'll for example, stand on the diagonal so that it fits with expert 2 and expert 2 is no longer correct from the third practice onwards, then the whole pattern always shifts.

IL: Okay. So, it's a "the other person will do it right and everyone shifts responsibility" problem.

E3: Exactly. That's the way it is at tournaments, where you have to get into the pattern, the way it's presented. But in training you should achieve the pattern as it is in the plan.

IL: Okay. Now I need have a quick look at what else I wanted to address. We already discussed a lot of the things I wanted to do. You've actually mentioned everything yourselves. I would like to ask: Suppose we don't have any choreography yet. So far, it's often the case that you take choreography, at least that's what supervisor 1 told me, together with the music from other formation groups. But let's say you don't have a choreography, maybe just the music, and you want to build it yourself from scratch. How would you go about it? I don't know if you've ever done that before.

E1: I once made a choreography myself. Not one that would have been allowed one a tournament, because a complete dance was simply missing. We actually picked the music first. And we also tried to cut it. We counted it out so that it was easy ... yes, that you know it's a 4/8 or 8/8. And also cut it together with the transitions. And then we thought about a choreography and what we could do with the choreography. I didn't create the patterns first and then think about which steps I could use to get into it somehow, but actually I did the choreography to the music and then ... you could see: "Well, you can just bring in a good change of patterns, for example".

IL: Ok, so first comes the music and then "what do I dance", i.e. the steps, and then what patterns emerge from that?

E1: I don't know how the professionals do it, but it seemed so rational to me.

IL: Ok, I mean the program is not just for professionals. It should be usable by everyone who has something to do with the domain. At least that would be the ideal case. That's why we could build it in such a way that only patterns are displayed, but that the considerations beforehand are perhaps already included. That's a rather vague question, but it's important for understanding. I don't have to do everything, there may also be some work to build on, let's see. Now you've already mentioned ... the way you think about it. Are there any important decisions you have to make? For example: You have five dances. For example, which dance comes when?

E1: Not really. For example, we now have a choreography that contains an incredible amount of samba. What did we have with Tina? Was there something in there so terribly often?

E2: Wasn't there quite a lot of Jive in it?

E1: It's usually a dance that happens quite often and where ... but that's actually, I don't know if the professionals really do it with the music selection and then watch, do they?

E2: Well, that's the way it is with the professionals: They have an orchestra play some of the music for them. That means that, I don't know, a Michael Jackson song can become a Viennese waltz, for example. They decide for themselves which dances they want to include. That's why it's difficult. For us it's more ... we look for what songs there are and cut them together. Now we have the choreography Crazy Fire from Ludwigsburg. That was already a finished choreography and how they came to it ... I have no idea. How they came to have five sambas in it ... I have no idea. So, it's definitely music-based somewhere, but it can be different depending on the formation group.

E1: I also think that they choose the pieces of music. Because there is often a theme. And there are lots of different themes. The last one was Tina Turner, and some of them even had even had a pop formation. The music is always chosen a first. I think expert 3 wanted to say something.

E3: Yes, exactly. Well, it's like any good essay. There's always a basic theme that you have to agree on and then you think: "Ok, is this perhaps some melancholy in the choreography as a whole or is it something that should perhaps just have a lot of grooves, where the audience also gets carried away, for example? Crazy Fire and Unstoppable from TCL are just such choreographies that are simply extremely fast. And we chose songs that we didn't yet know whether we wanted to do as a rumba, for example, so whether you wanted it to be pitched as a rumba or a jive. And you listened to them, and you listened to them and, as expert 2 said ... the orchestra always played the individual instruments and then there were professional singers and things like that. And then at some point a version was practically adopted. You listened to them and then you thought: "No, maybe it's too rumba-heavy, you want to add a bit more dynamics". However, there are simply songs that you can't pitch. That sounds totally creepy. Especially Russian formations with pop choreographies. It's crazy what you can do with the music. Sometimes it doesn't make sense, but in theory you can do a lot. You always have to think about whether the song you want to have pitched ... for example, if I have a rumba, e.g. Fields of Gold, does it still sound like the song if I include it in the choreography as a jive? And that's how it was done at the TCL back then. There were 20 different versions until the final result was achieved. Then they thought about the steps, just like expert 1 explained, and then they started working on the patterns. And then of course there were problems during the pattern development, e.g. if you didn't get the steps right. And then you had to change the steps or also have to change the pattern again.

IL: Okay. So, if you have different dances where you pitch the music... do they always have the same beat? I remember from my dancing days that it's usually four or two-four time for Latin dances.

E3: That is correct. Yes.

IL: Do you really always count in 4 quarters, or do you divide it into eighths? For example, that a pattern must somehow be performed on the sixth of eight beats.

E1: Yes.

E2: There's even an "eight-and" or something like that. We have that too.

E1: There is even an "and-ah". That's a sixteenth.

IL: Okay. So even down to the subdivision into sixteenths.

E2: But that's what the rhythm of the dance is. Samba is counted in sixths, Cha Cha or something like that in eights.

IL: Okay, so it's also really important that it goes down to sixteenths. If I want to know: "This pattern is at eight-and". Or is it not important to know?

E3: It is very important.

E1: Eighths would be sufficient.

E2: It would be important. Eighth notes are already sufficient. Sixteenths don't help that much.

IL: Ok, that's definitely good to know. Then I only have one more question, and that is: "What have I forgotten? What other problems do you have or what else would you generally like to see in a program like this? You can also think a bit out of the box. Maybe not just what is traditional for these patterns, but what would theoretically be useful in some way."

E2: So that's a very extravagant idea, and I don't know to what extent it can be implemented later from the trainer's point of view. I had it earlier from the stickman, where I could actually define the arms and the head. For example: The men are all standing in front and take the two arms out to the side, so I might build that on a stickman at that moment and all the others are the same. I could actually imagine something like that. Maybe to make it easier from the coach's point of view to know where I am at that moment. And also, for the dancers: At what point do I arrive?

E1: I always have really, really great ideas. I always have no idea whether it's somehow feasible, and because it's the basic thing, I also don't know whether it shouldn't actually have been another done by the other bachelor candidate. But actually, if you could then let it run to the music and theoretically put our team in the background, so that you could see: "Hey, he's standing completely wrong, like the right circle in front". Do you understand what I'm trying to say?

B2: This is already her bachelor thesis.

E1: That was actually the kind of thing where I can say: "Hey, he's completely out of the circle ". If you sometimes look at it yourself as a coach and see: "Something is wrong", but you haven't filmed anything and even if you have filmed it, you have to watch it three times. And that would be much quicker. You can pass that on to the other bachelor candidate.

E3: Exactly. What expert says, that would have been my point too. That you simply transfer this mask from theory to practice. I don't know whether it's possible to, for example, that you read in a video and then say that you transfer the mask from the program to the video and can then practically show: "Ok, he is dancing this part wrong for the third time."

B2: However, in theory you could implement it in here partly. If you make a video and extract the information, that you overlay both and see the transition when you press the "Next" button. That

wouldn't be quite as cool as seeing it directly, of course. The other option would have to do with augmented reality and is therefore the topic of the other Bachelor candidate.

IL: I was just about to say that.

B2: That would be one option you could consider.

E2: What I could still imagine although I don't know if we have any application for this ... is basically when you make a new choreography and instead of simply communicating the patterns to the dancers, that you put them ankle cuffs on their feet, and they dance the choreography. So, you can roughly place yourself on the dancefloor and then you draw it with those cuffs so that it is then transferred to the coordinate system and then you just have to adjust the finer details. So, for us now, if you're standing at the top as a trainer, the pattern looks really cool to you, but you don't know exactly how to draw it in the coordinate system. So that you can then transfer it from the surface into the program. I think that would also be a pretty cool feature.

IL: That would also be something for supervisor 1 in particular. I would have another ... No, I'll leave it to expert 3.

E3: I also have something else. It's actually just about visualization and simplification for teams. And I think it's good, for example, if we just take this pattern. It would be nice if you could select them all and rotate or scale them at once. Another example would be body and head rotation. That you select it for one dancer and transfer this information to all the other selected dancers, like expert 2 mentioned it. So, that you don't have to do it for every dancer separately. That would be super important.

IL: Yes, definitely a good idea. I agree. Would you say that some kind of ... you were talking about Stickman's, where you said: "He'll spread his arms". Would that make sense to take it even further. That you encode in the image, how the dancer stands there.

E2: I don't know if that's going into too much detail. I think it's just to help people ... so for me at that moment it would be easy to roughly visualize: "At what point am I standing there?". And to draw the rough body image. I think that would be completely sufficient.

E1: I believe so too.

E2: Because anything else, I think people would really think about it a lot and lose time again. I would use the simple version and just roughly visualize: What is your body position? They have to know the choreography anyway.

E1: And you can also over-define.

IL: Ok. Does anyone else have anything they want to get rid of?

E2: It looks good. I think it has potential and I think that's the right way to go. As I said: For me, in my eyes, it's actually ... I would rather know where I'm coming from and not where I'm going. That would be the most important thing for me. And to display collisions on paths. I think that would be one of the most important things.

E1: And I would like the body rotations, what you mentioned: Body there, head there. Then we can actually save ourselves all the definitions. Yes.

E2: Yes.

IL: Okay. Then I would say we took about an hour for the interview. Thank you again. That was very helpful. And I think I'll see you again, at least that was the plan, in the next few months. And thank you. And also, thanks again for taking part virtually.