

### 3D Timeline User Study

Thank you for participating in our user study. During this study you will explore two different graphical user interfaces **multiview** and **timeline** that both support exploration of 3D modeling histories. Your task is to answer very simple quiz questions with regards to presented 3D models, assess the usability of the systems and at the end compare and contrast the two interfaces and the types of explorations you will have experienced. The experiment will not last more than 15 minutes and you can withdraw at any point in which case your answers will be invalidated.

Q0. What is your 3D modeling experience? Please tick as appropriate.

☐

Beginner

☒

Intermediate

☐

Expert

Please continue on the next page.

## Multiview User Interface

In the multiview user interface you are presented a sequence of 3D models ordered from the bottom right to the top left. You can navigate all models simultaneously and select and highlight individual meshes in each window independently.

Dataset:

Brick

Q1. Between which two models were the most unique non-duplicate components added?

9, 10

Q2. How many components have the longest life span, i.e. appear in the most models?

3

Q3. Between which two models the most duplication happened?

7, 8

Duration:

5:52

Please continue on the next page.

## System Usability Scale

If you feel you cannot respond to a particular item, you should mark the centre point of the scale.

Interface:

Multiview

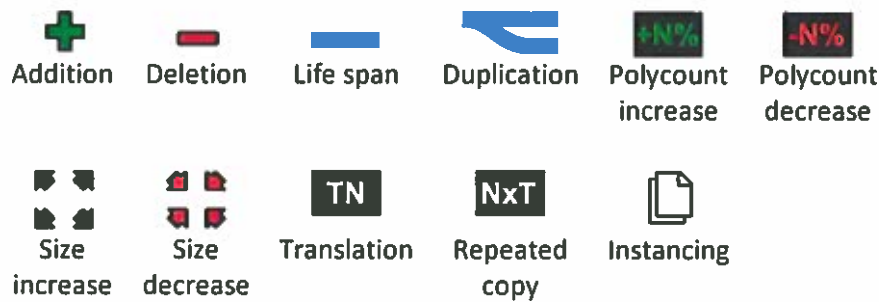
	Strongly disagree				Strongly agree
1. I think that I would like to use this system frequently.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
2. I found the system unnecessarily complex.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
3. I thought the system was easy to use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
4. I think that I would need the support of a technical person to be able to use this system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
5. I found the various functions in this system were well integrated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
6. I thought there was too much inconsistency in this system.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
7. I would imagine that most people would learn to use this system very quickly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
8. I found the system very cumbersome to use.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
9. I felt very confident using the system.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
10. I needed to learn a lot of things before I could get going with this system.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5

Please continue on the next page.

## Timeline User Interface

In the timeline user interface you are presented a sequence of 3D models ordered from left to right. You can navigate all models simultaneously and select and highlight individual meshes in each window independently. In addition, you can move the slider to reveal the flow of editing operations in the main morphing window. Tool tips on each 3D view reveal the file name of each model.

Timeline legend:



Dataset:

Medieval

Q1. Between which two models were the most unique non-duplicate components added?

4,5

Q2. How many components have the longest life span, i.e. appear in the most models?

3

Q3. Between which two models the most duplication happened?

2,3

Duration:

3:17

Please continue on the next page.

## System Usability Scale

If you feel you cannot respond to a particular item, you should mark the centre point of the scale.

Interface:

Timeline

	Strongly disagree						Strongly agree
1. I think that I would like to use this system frequently.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
2. I found the system unnecessarily complex.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
3. I thought the system was easy to use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
4. I think that I would need the support of a technical person to be able to use this system.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
5. I found the various functions in this system were well integrated.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
6. I thought there was too much inconsistency in this system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
7. I would imagine that most people would learn to use this system very quickly.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
8. I found the system very cumbersome to use.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
9. I felt very confident using the system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		
10. I needed to learn a lot of things before I could get going with this system.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	2	3	4	5		

Please continue on the next page.

## Open Ended Questions

Q1. How would you compare the two tools?

Depending on the use case both tools have their merits. When comparing different snapshots of a creation process, however, the timeline tool definitely comes out on top. ~~So this~~ I would say the other tool is more suited for comparing supposed duplicates.

Q2. Which tool would you prefer and why?

This depends on the situation. When comparing different stages of an object's creation the timeline interface wins, in my opinion.

Q3. Any additional comments?

The middle mouse button navigation I did not find intuitive to use. Otherwise it was fine.

Thank you for your participation, the user study is now over.