

University of Ljubljana
Academy of Fine Arts
and Design

University of Ljubljana
Faculty of *Natural Sciences and Engineering*
Department of Textiles, Graphic Arts and Design

MG+MSUM



What do we See with our Eyes What do we See with our Fingertips

UNDERSTANDING PAINTINGS WITH A SURFACE RELIEF

Tamara Trček Pečak, Deja Muck, University of Ljubljana, Slovenia,



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Tamara Trček Pečak, Deja Muck
University of Ljubljana, Slovenia



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Restoration Department,
Academy of Fine Arts and Design,
University of Ljubljana, Slovenia



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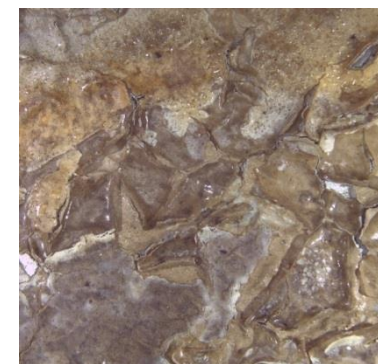
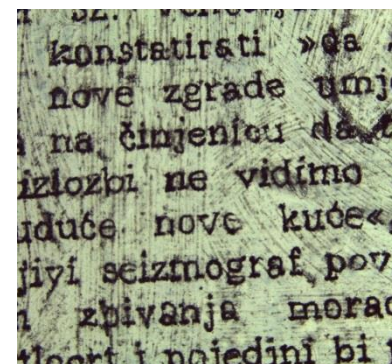
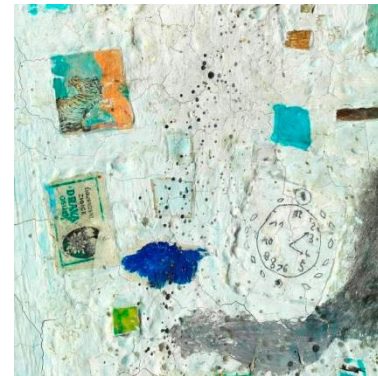
The project in cooperation with
Modern Gallery of Ljubljana
Gabrijel Stupica up Close



Gabrijel Stupica up Close

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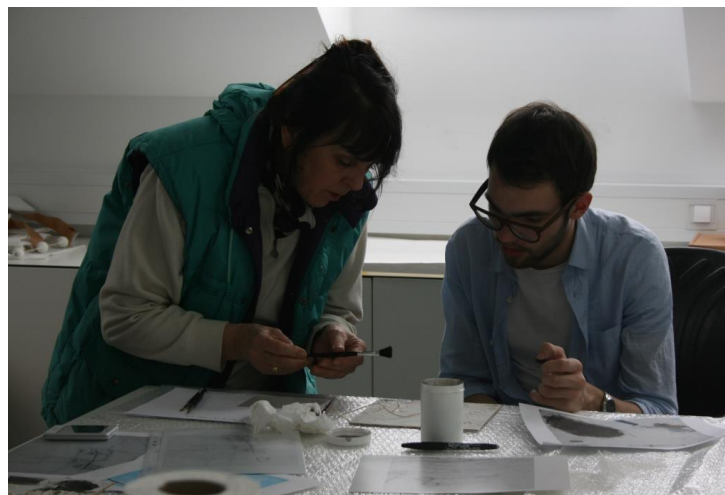
Investigations





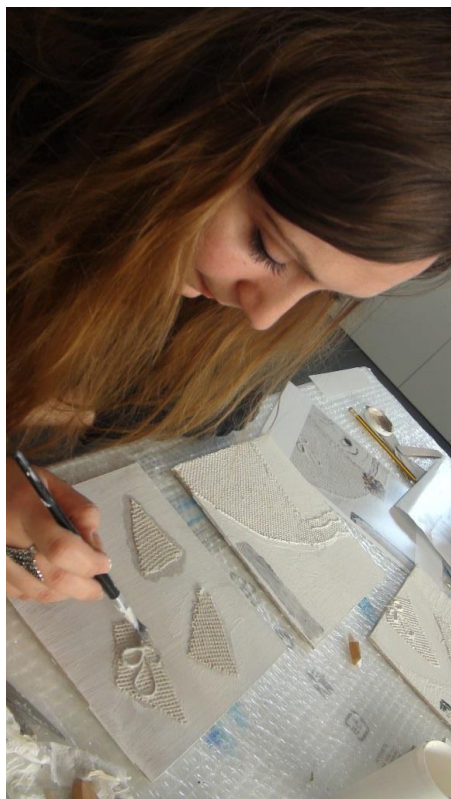
Studying painter's painting technique

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Repeting painter's painting technique





Recording all phases on the film



The exhibition in Modern Gallery, Ljubljana





The project
Gabrijel Stupica up Close



Rising the idea of evaluating different methods of copying artworks

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Questions:

- if and when copying of artworks with 3D technologies can fully replace handmade copies,
- whether handmade copies even make sense anymore,
- and which of the two copying options resemble the original artwork more.

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Criteria were:

- credibility of visual image,
- sensation when touching,
- production time frame
- and cost of expenses (materials and equipment).



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University of Ljubljana, Slovenia

What do we See with our Eyes, What do we See with our Fingertips

University of Ljubljana:

- Academy of Fine Arts and Design,
- Faculty of Natural Sciences and Engineering,
- Faculty of Arts,
- Faculty of Education

Modern Gallery + Museum of Modern Art, Ljubljana

Project was co-funded by:

- the Slovenian Ministry of Culture
- and the European Social Fund





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- Two paintings from the MG+MSUM and a painting from an art student where chosen to have details copied to carry out this project.
- The two museum paintings were not and the student's painting was allowed to be touched when gathering results.



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Original art work: Gabrijel Stupica

Girl at Table with Toys, around 1967,
tempera on canvas, 128 x 168 cm

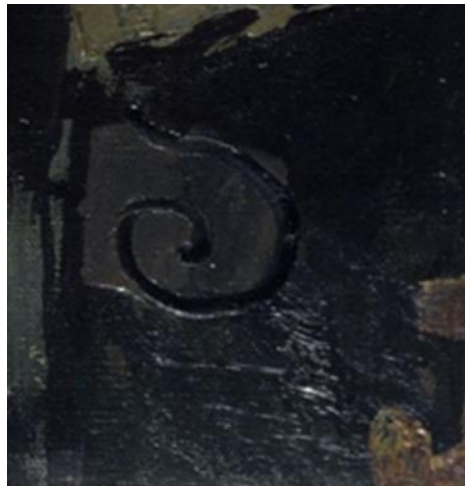


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Original art work: Gojmir Anton Kos

Three Women at Table, 1938,
oil on canvas, 95 x 78,5 cm



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Original art work:
Sara Štorgel

Dance, 2019, acrylic on canvas,
50 x 50 cm



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Handmade copy of a detail of the G. Stupica's painting

- Egg tempera / mixed technique on canvas
- Acryl on canvas

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Handmade copy of a detail of the G. A. Kos's painting

- Oil on canvas
- Acryl on canvas



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Handmade copy of a detail of the Sara Štorgel's painting

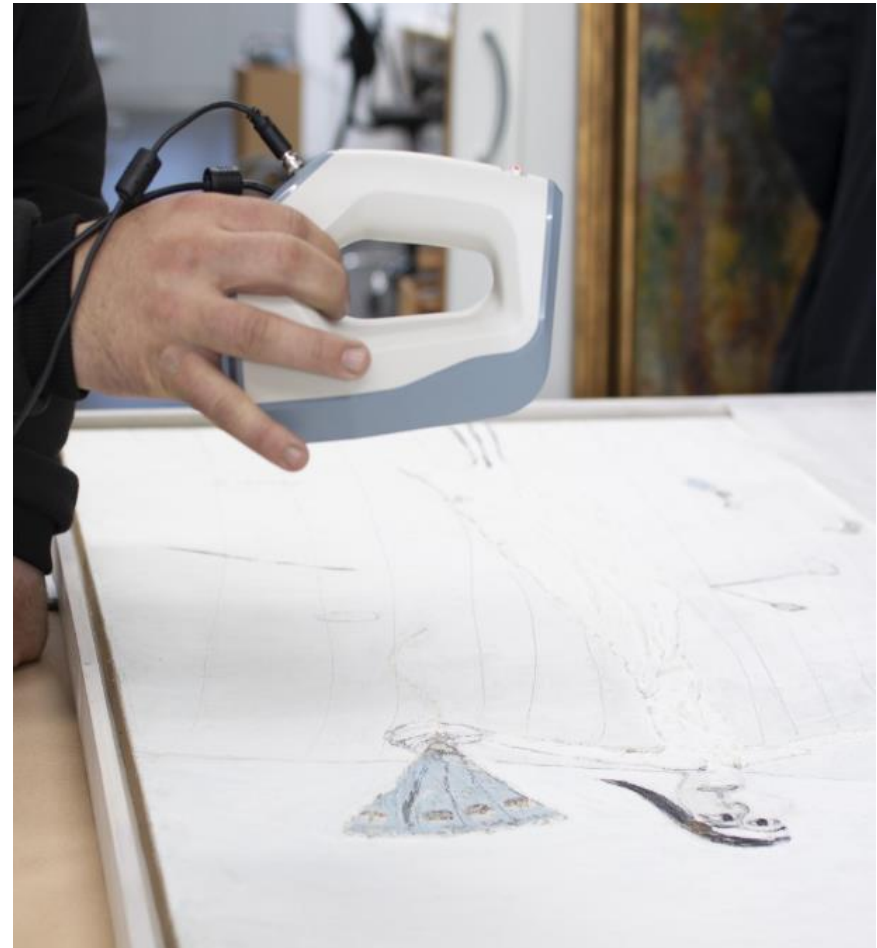
- Acryl on canvas



Copies produced with 3D technologies

1. Capturing

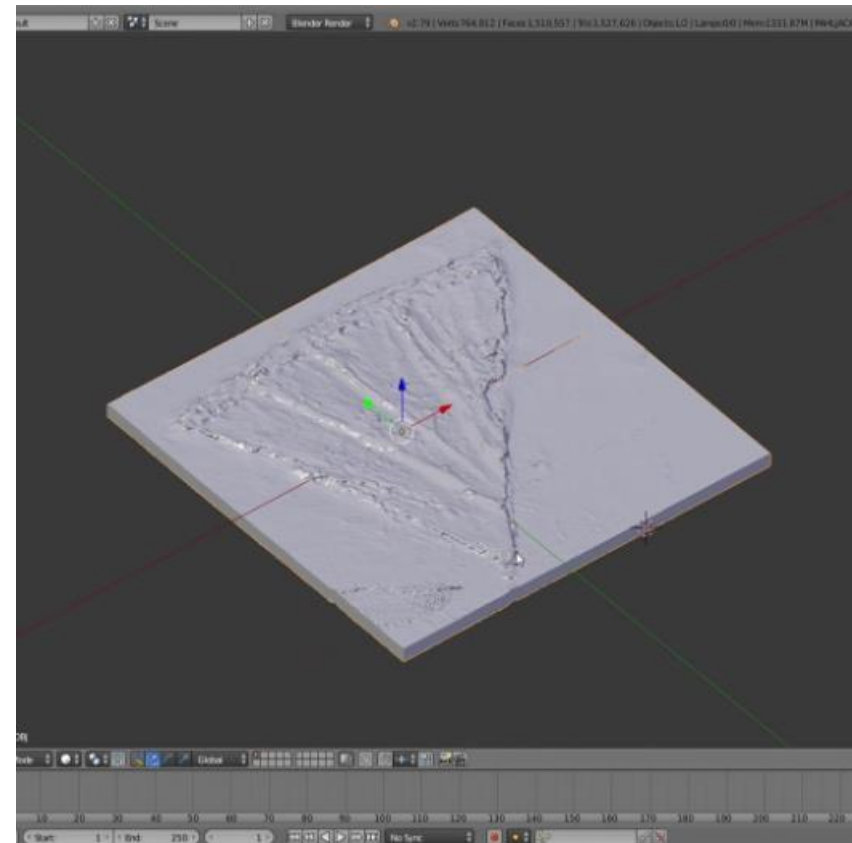
- 3D scanning
- digital sculpting in Blender



Copies produced with 3D technologies

2. Model preparation for 3D printing

- Blender



Copies produced with 3D technologies

3. 3D printing

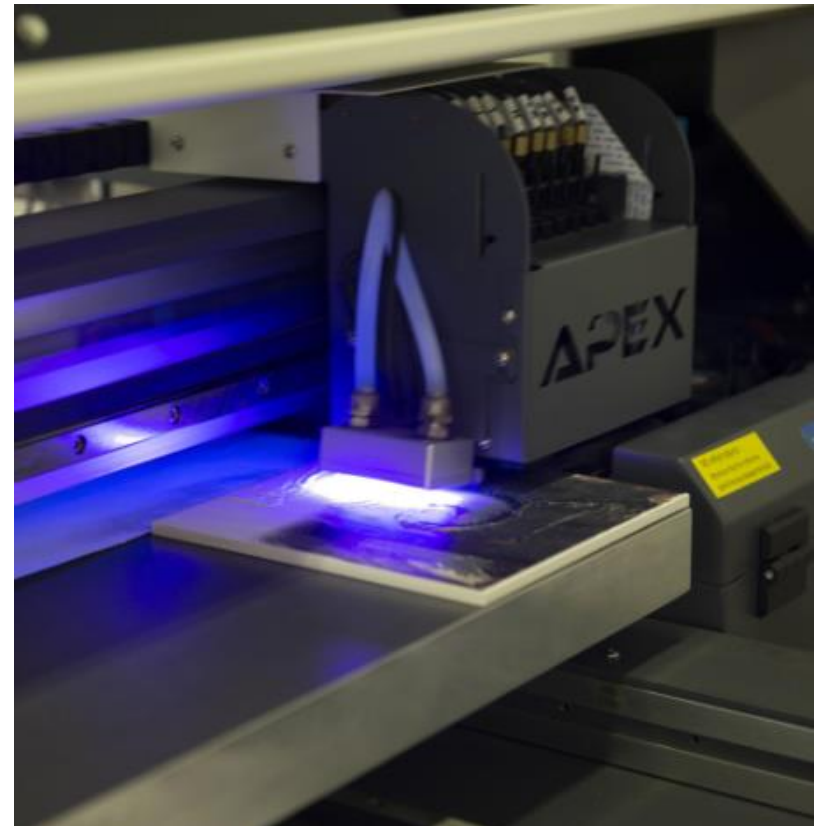
- Fused deposition modeling (Zmorph)



Copies produced with 3D technologies

4. Post processing - UV printing

- printing of captured image on the surface of 3D printed copy



FINAL EVALUATION OF PROJECT WORK

Time frame

	a fan (Stupica)	spiral (Kos)	dancer (Štorgel)
Handmade copies			
- original materials	12h	2-3h	2 - 3h
- other materials	12h	2-3h	/
3D printed copies	12h	12h	12h

FINAL EVALUATION OF PROJECT WORK

Cost of expenses

	A fan (Stupica)	Spiral (Kos)	Dance (Štorgel)
Handmade copies			
- original materials	c. 290 €	c. 50 €	c. 51 €
- other materials	c. 198 €	c. 46 €	/
3D printed copies	c. 100 €	c. 150 €	c. 100 €

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Tests with blind and sighted individuals

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Tests with blind and sighted individuals





Conclusion

- When talking to **blind people** who -touched all three copies of the same detail, it was found that **each of the copies demonstrated different information** and each could be valuable when presented **as part of a story**.
- In **people with sight**, **colours** played a crucial role in determining the results. If the copies are **not held and touched**, and **3D printing** was produced in correct shades, this technique **beats other** copying methods - 3D technologies produce reliable copies of art.
- This project represents **a great baseline for continuing studies** in the areas of improving copy making for blind as well as sighted museum visitors.



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SOCIALNI SKLAD



Javni Stipendijski, razvojni,
invalidski in preživitveni
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Thank you for your attention!



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