Summer School on Digital Art History (DAHSS). Data-Driven Analysis and Digital Narratives

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The Summer School on Digital Art History (DAHSS) is an ongoing joint initiative of the University of Málaga and the University of California, Berkeley. In 2015, both institutions signed a memorandum of understanding for the development of training activities in the field of Digital Art History and Visual Culture: DAHSS is the first outcome of this collaboration. Later on, other institutions, such as the Ludwig-Maximilian University in Munich and the University of Western Ontario in Canada, joined this project, enriching their benefits and expanding its scope.

Why DAHSS? The so-called "digital turn" has configured new modes of access, production, representation and distribution of knowledge. The digital turn implies, therefore, new ways of thinking and understanding, and also new ways of creating, recreating, communicating, representing, and interpreting. Being aware of this new scenario, DAHSS is rooted in the need to provide art historians and analysts of visual culture with innovative training contexts that take into account the material and technological conditions of our contemporary world, and that also contribute to critical reflection of how these conditions are modeling new epistemic, interpretative and methodological paradigms. Facing this complex scenario implies, in turn, the implementation of learning strategies based on transdisciplinary collaboration, stimulation of creativity, and promotion of disruptive thinking in order to question established assumptions and conventions. In other words, DAHSS is a response to the challenge of reinventing the practices of Art History and Visual Culture Studies within the framework of the digital realm. Our ultimate goal is to establish a permanent seminar that serves as a bridge between a plurality of backgrounds and disciplines, able to configure a transnational scenario for critical reflection, ground-breaking learning and cooperative work. Fortunately, it seems that this objective has a way of being fulfilled if we consider the progression occurred between the first and second iterations of the program.

The first edition took place in September 2016, and what began as a workshop with a reduced and local scope has experienced an important quantitative and qualitative leap in the second edition, expanding the number of applications, the variety of disciplinary backgrounds and the national and institutional diversity of participants. Only 40% of the applications could indeed be accepted, resulting in a final group of 23 participants coming from 14 different countries.

Why the topic of Data-Driven Analysis and Digital Narratives? DAHSS has tried to answer a double-sided question, crucial to the emerging field: in the two editions that have happened so far: How might the ability to access and process hundreds of thousands of data tell new stories about artistic culture? And how might we present these new stories in unprecedented narrative models? Not by chance one of the aspects of digital culture that requires more attention is the enormous amount of images, materials and data of all nature that, thanks to the incessant digitization effort carried out by GLAM institutions, together with the proliferation of open data and LOD initiatives, are at our disposal to be used for many different purposes. Further questions arise: How to use this material to generate new knowledge in the field of artistic and visual culture? How does the possibility of processing hundreds of thousands of data imply a paradigm shift with respect to interpretive models and traditional research practices?

Likewise, digital media—transitive, interactive and hypermedia by nature—requires a refounding of the discursive models and of the forms of representation that, up to now, have been determined by the formats of the printed culture and the book. The need to refound the writing practices and the discourse models that have governed historical-artistic knowledge so far demands an adequate understanding of the potentialities of digital languages. In this sense, the creative practices of new media artists or the proposals developed by electronic literature can inspire new models of narratives and stories.

In accordance with its objective of setting up training contexts based on creativity, innovation and disruptive thinking, DAHSS17 put different teaching strategies into play, combining theoretical exchanges and critical discussions with practical sessions (lab-based sessions) through which participants worked collaboratively in joint assignments. Lab-based sessions followed Design Thinking methodologies for rapidly prototyping projects. The development of prototypes is useful for the acquisition and practice of digital and technical skills. Moreover, they also serve as catalysts to foster critical reflections about the new epistemic conditions associated with digitality and its effects on artistic and visual culture. In DAHSS17, the shared discussion expanded in a Facebook group, which is still working today and is becoming a meeting point to share news, initiatives and reflections related

to Digital Art History. The DAHSS17 program was completed with the participants' lightning talks, which gave us the opportunity to know their backgrounds as well as their ongoing research projects.

The first three days of DAHSS17 were devoted to discuss a variety of problematic issues which were introduced by the instructors through provoking and suggestive presentations. Greg Niemeyer (University of California, Berkeley) addressed a twofold reflection: on the on hand, in his presentation "Parsing Networks" he took as base the "circulating reference" concept proposed by Bruno Latour to explore the process through which the materiality of the phenomena empirically observed is transformed into a new materiality by means of the aggregation of layers of interpretation. This process formalizes and progressively abstracts the empirical reality to build a new one: the dataset that we will finally manage. The critical question that immediately emerged was how to go from data—understood as an abstraction and formalization of empirical phenomena—to transformative actions that reconnect with them; in other words, how to go from theoretical formalization to practice; or how to make data-driven approaches an effective tool to face the challenges of a changing world. This last question led us to consider the need of building predictive models that help researchers to envision the future in order to provide better solutions to the next problems that will beset us.

On the other hand, given that socio-cultural phenomena do not progress in an unique manner and they are complex, the need to overcome linear narratives to develop multiple narratives was addressed in a second phase. Therefore, the central question that focused the debate was: How might we interrogate datasets in order to obtain a plurality of narratives? In turn, a series of connected reflections came up: assuming that our observations of the world are embedded in the building of data models, what do they mean in cultural terms? How might we interrogate the arguments and assumptions embedded in data models? How might we build more "neutral" data models? Is that possible in some way?

As an alternative path for analyzing socio-cultural phenomena and systems in terms of complexity and fluidity, especially in the context of the liquid modernity (Baumann) of the 21st century, Greg Niemeyer proposed the notion of "morphogenesis"—already raised by Alan Turing—in his presentation "Towards Morphogenic Design". The morphogenetic approach focuses attention on "how" simple forms become complex forms, rather than "why". It is also an ontological question to the extent that, from this point of view, things and creatures are not defined by categories, but rather by the waves that give rise to their forms. While traditional perspectives describe structures and creatures in terms of categories of classification, morphogenesis proposes to think of data (and socio-cultural phenomena) as waves that

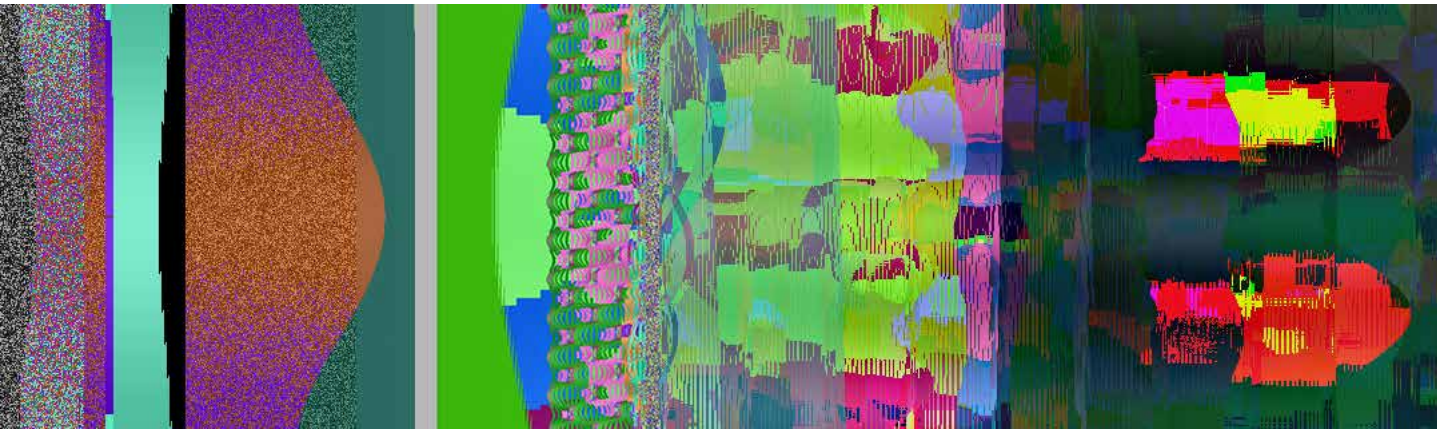

Figure 1: Greg Niemeyer, Paul D. Miller, *Supraliminal* (screenshot).

collide amongst themselves, resulting in a diversity of forms. To illustrate this issue in a practical way, Greg Niemeyer showed Supraliminal[1], a project developed in collaboration with Paul D. Miller consisting in a 360 degree video installation that generates visual and sonic patterns based on the principles of morphogenesis (fig. 1).

Naturally, the matter of data brought about other controversial issues, such as the bias of datasets, the existence of black holes, differences in access, inequalities in open data policies, etc.

Harald Klinke's presentation (LMU) posed the problem from its foundation, that is, he launched the crucial question of what is, in reality, Digital Art History: can we say that it exists as something independent or different from the traditional Art History? Are these two labels—traditional and digital—actually defining two different ways of practicing and understanding Art History? To answer this intellectual challenge, Harald Klinke referred to the mechanisms traditionally used in art-historical research (comparison, observation, discovery of similarities and differences, classification, etc.) to reflect on how they are transformed when carried out through computational methods. Since one of the contexts where this shift is most noticed is when processing the huge image collections now available, the debate of how to deal with these new resources centered most of the discussion. Likewise, the problems associated with the practice of Digital Art History were also addressed: the abundance of information and the need for a critical filter; the problems of unbalances and underrepresentation in digital cultural heritage; the need to understand the logic of computational methods in order to propose meaningful interpretations; the transit from individual to collaborative and inter-

disciplinary work; the change in the authorial and recognition models, etc. In short, participants faced the fundamental question of what it is to be an art historian in the 21st century.

Justin Underhill (University of California, Berkeley) focused on image processing and 3D laser scanning techniques. His presentation revolved around a fundamental idea: if the medium shapes the way in which we see, the digital artifacts (images, 3D models, etc.) are—therefore—powerful tools for shaping our understanding of visual culture and also heuristic tools to clarify issues related to the artistic production processes that were hitherto impossible to address. This lesson had an on-site demonstration at the Málaga Cathedral. On Wednesday morning, we moved to the city center to visit the Cathedral and to carry out a scanning session. Once all the captured data was processed, we were able to visualize the 3D reconstruction of the building and to discuss the advantages and disadvantages of this technique[2].

On Wednesday, the formation of the working groups took place. At this point, we were all aware of the critical moment that we had in front of us since the effectiveness of the rest of the summer school depended on the success of this operation. We decided to rely on the Design Thinking strategies. Taking a starting point a small set of key questions that had emerged in the discussions of the previous days, the participants gradually added new questions on issues that had aroused their interests (fig. 2). These questions, grouped into semantic clusters, served as the basis for the distillation of the three projects that were finally proposed to be developed during the following days. Once the projects were decided, each participant joined the most interesting one by him/her.

On the last day, the three projects, tutored each by one of the instructors, were publicly presented.

1. Matching China, led by Greg Niemeyer, set out to explore different narratives through gamification processes as a means of challening narratives based on linear logics usually used by museums and cultural institutions (chronological, stylistic, etc.). The result is Matching China[3], an interactive game that examines how different narratives influence our ways of seeing. At the beginning of the game, a series of images of heterogeneous blue-porcelain objects pass before the eyes of the gamers combining different settings (random, chronological, subjective, with associated information, without information, etc.). Subsequently, gamers must match fragments of the objects with the figure to which they belong (fig. 3). The hits scored are used to reflect about what kind of settings are best remembered by participants, and, therefore, whether the use of certain logics determines the cognitive experience of the viewer.

2. Modeling the *Music Lessons*. Veermer's IKEA, guided by Justin Underhill, set out to explore the potential of 3D modeling techniques to foster

Figure 2: Research questions' panel (https://goo.gl/nXPG2i).

speculative hypotheses about two-dimensional representations. In particular, the project focused on the painting *The Music Lesson* (ca. 1660) by Johannes Vermeer. The final result was a 3D artifact that reconstructs the geometry of the room depicted and the different objects included in the scene. This 3D artifact allows us to speculate about the techniques used by Vermeer in the projection of the two dimensional space, the point of view adopted by the painter but also about the changing effect of the natural light when this invades the scene through the windows at different times of the day[4].

3. Data Analysis and Visualization, leaded by Harald Klinke, set out to delve into the opportunities provided by data analysis and visualizations to produce new art-historical knowledge. Both open datasets and datasets belonging to participants' personal projects were used. It is interesting to note that, during the exploration process, datasets were conceived as research objects per se. In contrast to traditional approach that usually departs from questions previously established, datasets were analyzed in order to find out which new and unexpected questions emerged as a function of configuration, structure, volume, data types, etc.

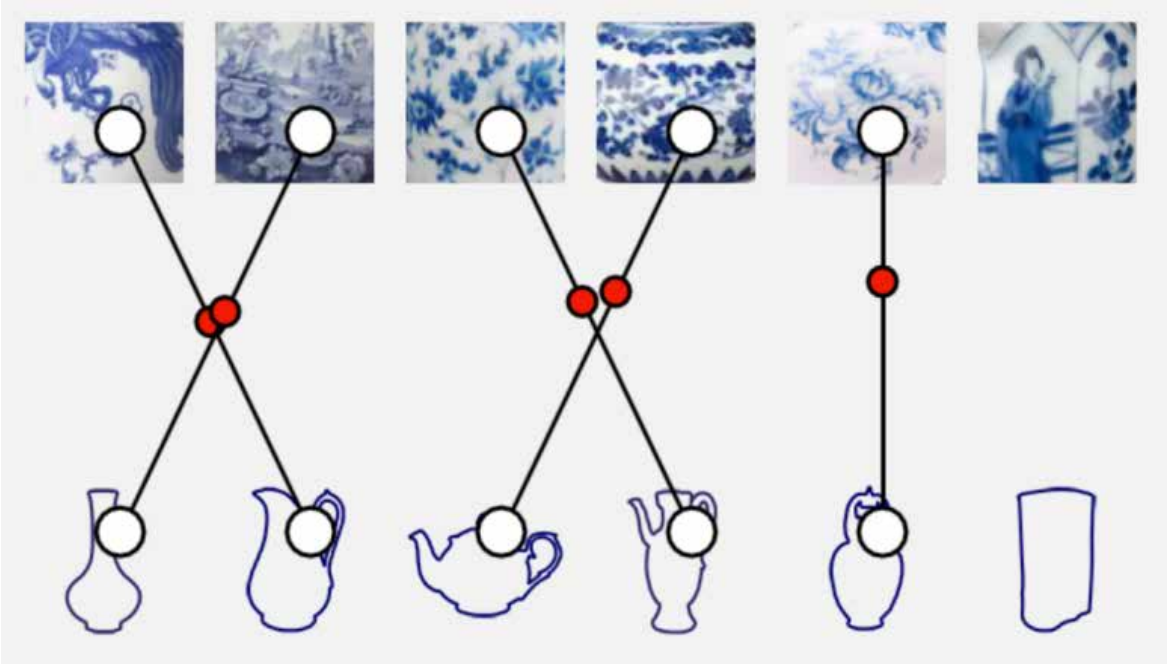

Figure 3: Matching China interface (screenshot).

Finally, I presented my own experiment, Words-Images Game, whose objective was to explore the nature of the words used to describe certain images in order to discover whether any pattern can be traced depending on the nature of the image we are seeing. Each of the participants provided 7 words of their choice to describe each of the 7 images selected by me (all of them paintings of the 20th century). The results demonstrated a tendency to use words that identify (nominate) the objects represented when figurative images are described, while the words related to the description of the visual qualities—which, for obvious reasons, are prevalent in the non-figurative images—remain marginal. Therefore, the predisposition of figurative images to activate the cognitive mechanism of identification—the first step of the Panofskian iconographic method—seems to relegate the appreciation of the visual qualities (form, color, light, etc.) to a second register.

And now, what is the next? We are already working on the DAHSS18 with the ambition of improving the training strategies, expanding the scope with new topics and making the community of Digital Art History practitioners grow.

The entire DAHSS17's documentation can be found at: http://historiadelartemalaga.uma.es/dahss17/en/

Figure 4: Clustering artists in the Met Museum tapestry collection foremost shows us the overrepresentation of designers in tapestry research @rudyjosbeerens.

Notes

1 http://www.supraliminal.org/ [Viewed: 20/12/2017]. See Greg Niemeyer's explanation at: https://goo.gl/3bwDTa [Viewed: 20/12/2017].
2 See Justin Underhill's explanation at: https://goo.gl/nc2ScS [Viewed: 20/12/2017].
3 http://matchingchina.org/ [Viewed: 20/12/2017].
4 See video at: https://goo.gl/sV6rmB [Viewed: 20/12/2017].