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Researching Ancient Colours in Museums Collections: Best Possible Practices and Prospects

Introduction

The starting point and term of constant comparison in this contribution is the analysis of the digital policies implemented in the two-year period 2014–2016 by the Department of Classical Antiquities of the Uffizi Galleries by the writer, in collaboration and under the scientific guidance of its director, Fabrizio Paolucci. The new strategies have made it possible to evaluate and measure change (first in social, then in museum life), as well as the impact of social networks on museums, almost obliging them to (re)think about the practices in place and to design new ones for the constant development of the audience. Those strategies and actions gave life to the next project, *Mann-In-Colours*, which is currently underway at the National Archaeological Museum of Naples. To understand how it was drafted, it is necessary to retrace all the conceptual and design steps through which a communication “format” was created such as to make the next step (a further variation of the project) an indispensable compendium of the communication of the ancient colours on Greek and Roman sculptures. The actions implemented in the Florentine museum were in effect a gymnasium, a cultural hub, a place of shared planning so that, once the first phase was over, the writer was immediately clear of the great opportunity to expand the field action (and with-it experimentation) to one of the most famous ancient collections in the world: the Farnese one kept in the Neapolitan museum.

Preliminary analysis: from the study of the context to the programming of a strategy

In an effort to understand the most correct approach [13] to the public of the Uffizi Galleries, all the tools available to the museums were reviewed, from the inevitable audio-guides to smartphones, useful for making visits more detailed and interactive; the prior, in effect is easily usable because they are unidirectional and do not involve any effort on the part of the user, who can freely choose between pre-set paths or type the number of the audio set to listen to when needed.

Smartphones, the essential tools of modern society, with which everything is done, revealing and guarantors of the only possible way of living the world; denying it would mean not understanding the extent of the social evolution underway, even in its most negative sense [15]. In our case, the freedom of use and the consequent (desirable) sense of wonder [5] were a starting point to ensure that the visit path was not bound to a pre-established tour; considering that the sculptures are the objects of our attention, they were distributed over multiple rooms and floors. A special guide, partly virtual, therefore seemed the most correct choice also to make up for the lack of a concrete path that united them: the only common thread was

scientific research and the results of the analyses on the original colours, in particular the gilding [27]. Multimedia can imply interaction and development by the user, needing only basic skills to use but allowing the user to experience, learn, and consume content in an alternative way (from listening to relating, by means of digital stories, enriched by accessible content or interactive routes).

Keeping in mind all these factors, before starting with the technical analysis of the product to be made, we felt it was very important to know the public of the Galleries in depth and compare them with those of the Florentine museums¹; questionnaires were therefore prepared (aimed at a very diverse audience in terms of age, economic level, and cultural background), from which *analytics* it emerged that the flow of the Uffizi Galleries is concentrated mainly in the rooms exhibiting the masterpieces that motivate them, almost exclusively they visit *Birth of Venus and Spring* by Botticelli in primis. It was therefore necessary to graft and direct the same flow on a part of the archaeological collection, unknown to most or even considered to be 18th–19th-century copyist. If that had really been the visitor's perception, it would have become of fundamental importance to develop an effective system to arouse curiosity and interest in works of a diametrically opposite nature.

We tried to answer all these questions with “Gold Unveiled”², a project consisted in the creation of a path, both physical and digital, to discover the sculptures belonging to the archaeological collection of the Galleries, on which traces of the ancient colours were still present. The case studies to refer are a sort of *work in progress*: on one hand, an increasingly active museum in continuous search for the dissemination of culture, on the other, a progressively demanding public that requires forms of active learning not only during the visit but also before and after the direct experience [2]. Emotional involvement [12, pp. 16–30; 17, pp. 329–332] and a *human centric* [28] approach have allowed the project to be calibrated over time, transforming the visitor into a content editor [1].

Telling the ancient colour to design a modern instrument

The reflections and the premise of the project presented up until now have represented a fundamental theoretical and philosophical passage for the several actions. The complexity of the place, whose historicised museographic installations make up a further piece to be evaluated together with the impossibility of using economic resources as well as dedicated preparations. To this we'd add a cultural tradition that imposes the vision of the classic world in black and white, that have forced the priority of answering two fundamental questions: what (i.e. the colours of the ancients) and in what form (breaking down cultural superstructures) would we be able to communicate by placing the visitor at the centre? The *analytics* asserted that the most used medium during visits to Florentine museums was the smartphone, used by both young and old specially to take photographs: “Gold Unveiled” therefore had to be able to be hosted on a smartphone and used in an equally natural way.

In the span of six months, about three hundred visitors were interviewed, almost all of whom declared that they were able to use the phone as a camera and that they had at least one profile active in the various *social network*, with the aim of “staying in contact with friends/acquaintances” and to let them participate in their activities. Therefore, our experience had to not only be intuitive but also shareable, ensuring the popularity and growth of the museum

¹ <https://gathercontent.com/blog/understand-audience-inform-content-strategy>.

² Curated by Fabrizio Paolucci and Cristiana Barandoni, Gallerie degli Uffizi.



Fig. 1. Florence, Uffizi Galleries inv. 1914 n. 238. Minerva, Roman art. Photo by the Author

experience even outside its natural environment. The guarantee of accessibility has become the priority on which to rotate everything, starting from the assumption that online use necessarily had to go through technological innovation but, at the same time, not hindered by it [4].

Briefly, the processing steps were choice of strategies to follow → satisfy the thirst for knowledge → follow trends → accept the challenge of using tools that do not belong to the museum by their nature but that could become supporters and allies in the process of inclusion and heritage education [26]. Experimentation begun on these gradual steps, whose theoretical roots have never separated from a vision of a museum capable of overcoming the boundaries imposed by the exhibition, facilitating the understanding the works of art, of which it was possible to describe the complexity cultural, social, religious, and political phenomenology. The way to access the content has been identified in the QR Codes (*Quick Response Codes*) [7] whose reading software can be downloaded for free from Google Play³, Apple app store and other various digital stores for all existing platforms (Android, iOS, Symbian, Blackberry and Windows). Using them requires the same actions necessary to take a photograph since the technical support (smartphones and tablets) are equipped with a lens that performs the function of a scanner: once the QR code is framed, the program automatically connects to the network. The processing of the documents to be put online was organised so that the remote viewing could be calibrated to the tool used, *auto setting*, this would optimise the web pages directly on the support chosen by the user; the problem of graphics specifically linked to info-mobility has thus been overcome, removing the need of organising pages processed with software that would automatically adjust their settings for mobile viewing. The only expected cost is the annual renewal of the hosting.

The theme of gilding and ancient colours, whose vastness is impossible to decline with traditional panels, has been made accessible thanks to the printing of QR codes on 2×2 cm

³ <https://play.google.com/store/apps/details?id=me.scan.android.client>.

adhesive plates, positioned on the bases of the works or on pre-existing captions (except in the case of the *Ara Pacis Augustae*, for which a specific panel was created). The scan redirected the user to the dedicated website⁴, where new content and updates on ongoing studies were constantly uploaded (Fig. 1); the web pages could also be saved for consultation not necessarily in situ, thus creating a bridge between offline reality and augmented reality⁵.

“Gold Unveiled” represented an attempt at dialogue, thanks to which the white marbles could finally recover their original colours. From the early stages of the publication, the scope (unexpected for us) of the experimentation⁶ immediately appeared: visitors began to relate to the sculptures in a more sensitive and shrewd way, questioning it and perceiving it in its fundamental unity and value, both as a historical collection and as a vivid and present testimony of Greek and Roman art. The contents of the scientific investigations [18; 19; 20] were put online, modulated with a language capable of breaking down the obstacle of appealing to one’s emotions, demagogic obstacles “expert–novice” [14], embracing a less restricted and more inclusive vision of the term “communication”, in our case, understood as a synonym for mediation and (re)negotiation of meanings. In the description of the presence of traces of colour, it was deliberately decided not to include complex lemmas or technicalities relating to the investigations carried out; the text had to be fluent and more narrative than didactic.

Exactly one year after its launch, a *blog* section has been added to the site regarding ongoing activities, the progress of studies and the most recent discoveries on ancient polychromy, an essential action to be able to maintain constant attention, intrigue and stimulate the user. This resulted in concreting its presence, physical and virtual, the latter growing exponentially from 338 users in the first week to about 20,000 in a year.

The *analytics*, one of the pillars of the work plan, which constantly monitored times, hours, nationality, gender, etc. whose study has shed light on the realistic conformation of users, and not on how much it matters to those who work behind the scenes. An exhausting exercise, which is often lacking in museum design, but whose practice is indispensable to understand the real need of stakeholders: the “Gold Unveiled” process in the redefinition of functions and participatory practices has managed to establish a spontaneous interaction from the public, that it is by its nature, increasingly vast and discordant, placing it at the centre, “in contrast to the classical model in which collections are the centre of interest” (as opposed to the classical model in which collections are the centre of interest). The effort was to change the attitude and pay more attention to the public, subsequently being able to change the perception, view, and value of museum collections, re-evaluating the traditional role of the curator, due to direct comparison, listening and public feedback, in favour of *participatory practices* that involve the public in an active and conscious way. This is not a sterile exercise or an end in itself, but a courageous attempt to change perspective and create a precedent for other museums that in this way can have a reliable profile of their audience and their *desiderata*.

⁴ Following the Franceschini Reform (2015), the Uffizi Galleries reset their image by creating a new website, inaugurated in 2017. The cancellation of the project website (<http://www.goldunveiled.it/>) and all the pages created on the social networks related to it.

⁵ <http://www.d4b.it/>.

⁶ Thanks to the Google Analytics tool (<https://marketingplatform.google.com/intl/it/about/analytics/>) downloaded and combined with our online platform, it was possible to count the number of visitors and monitor both daily and hourly trends. It measured the most “investigated” works; the user background (origin, age) and finally which channels (Facebook / Instagram / website) were preferred, the time spent, and the dashboards used.

GOLD UNVEILED

GALLERIA DEGLI UFFIZI

Il mondo antico era un mondo colorato...Non ci credete? Sperimentate **Gold Unveiled**, il primo progetto di comunicazione basato sulla tecnologia QRCode. Cliccando sui codici che troverete in Galleria farete un affascinante percorso alla scoperta delle antiche sculture e dei rilievi dorati, vedrete l'Ara Pacis con i suoi colori originali e la Venere de' Medici svelerà a voi la sua chioma fulgente d'oro. Utilizzate il QRCode per accedere ad approfondimenti, integrazioni e ricostruzioni.

Believe it or not, the ancient world was a colorful world. Do you want to know more about? **Gold Unveiled** is the first communication project entirely based on QRCode technology. By clicking on the codes that you will find in the Gallery you will make a fascinating journey to discover ancient gilded sculptures and reliefs: you will appreciate Ara Pacis with its original colors and the splendid Venus de' Medici will reveal to you her shining golden hair. Use the QRCode to access insights, research material and virtual reconstructions.

Trasformate la vostra visita nella Galleria in un'esperienza ancora più coinvolgente
Turn your visit into a great immersive experience

Scarica gratis il QRCode reader
 download QRCode free from

App Store
 Google play

WWW.GOLDUNVEILED.IT

Follow us on #goldunveileduffizi

Fig. 2. Introductory panel placed at the entrance to the Uffizi Galleries. Photo by the Author

“Gold unveiled”: from theory to practice

The Galleries Management approved the placement, in addition to the stickers, of five aluminium stand-ups, identical to those already set up in the exhibition halls. The first was positioned at the entrance, in the area between the external doors and the ticket office, which proved to be particularly suitable because it was often an exceptionally long stop. The first panel (Fig. 2) allowed users to enter the *main page* of the website and find general information, links to download the app for the QR codes and hashtags (“#”) for sharing on social networks. The entire route had been tested several times and set so that it does not exceed 30 minutes (a short amount of time, considering that the time allocated to visit the masterpieces of the galleries last approximately 1 hour and 30 minutes).

Being an “experiment”, the number of sculptures and reliefs selected has been reduced to eight. The works were placed on the standard path of use of the museum spaces: this allowed them to fit seamlessly into the routine visit path, limiting the user’s movement from one room to another as much as possible, without substantially changing the most popular and frequently used path.

All the web pages of the project have been set up with the same layout: characters, quantity of notions, and graphic returns, HD photographs positioned in sequence (viewable in static or loop mode) and white background; only the banner at the top was coloured, a charming reference to the colour theme. Avoiding sophistication and essentiality, was a general design choice, in consideration of the fact that “Gold Unveiled” had to be used above all by a public who were not aware of the subject. As for the choice of graphic design, the authors’ goal was



Fig. 3. Main screen of the website; section dedicated to Minerva. Photo by the Author

to bring the layout “to the bone”, opting for a totally white background with black text to make reading simple and smooth (Fig. 3).

The communication process of the project did not only have a “public” phase but also a specific one dedicated to the staff of the museum who were able to benefit from numerous meetings and practical demonstrations through which to learn the application in detail, become familiar and act in a promotional manner and in agreement with the Department of Classical Antiquities. The *user-friendly* and collaborative approach has meant that, on numerous occasions, even spontaneously, the staff felt an active part of the project, acting as a harmonious *supporter*, increasing the perception among visitors of a united and collaborative museum, as evidenced from the large amount of positive feedback (as well as comments on social media networks) left by them; the practice could be defined as a holistic vision of the strategy, able to foster a less elitist and exclusive knowledge and understanding of the archaeological collection. In support of this, special educational visits were organized by the curators, whose audience was carefully selected so that the experience could later be measured. The feedback made it possible to detect the value that the groups assigned to the experiences felt during these visits, a necessary step to develop an analytical culture based on the contribution of *data driven*, immense potential, but explored truly little by cultural institutions [21, pp. 194–212]; knowing the public and trying to satisfy the potential from the guided experience can only favour an innovative process. In terms of the public and non-public, addressing these initiatives especially to the non-public sector must be undertaken to help overcome social, economic, and cultural barriers.

From *trending topic* to “the Uffizi digitization project”

After the first year, it was decided to implement the project with new actions, in consideration of the fact that in the 15 months of experimentation we measured:

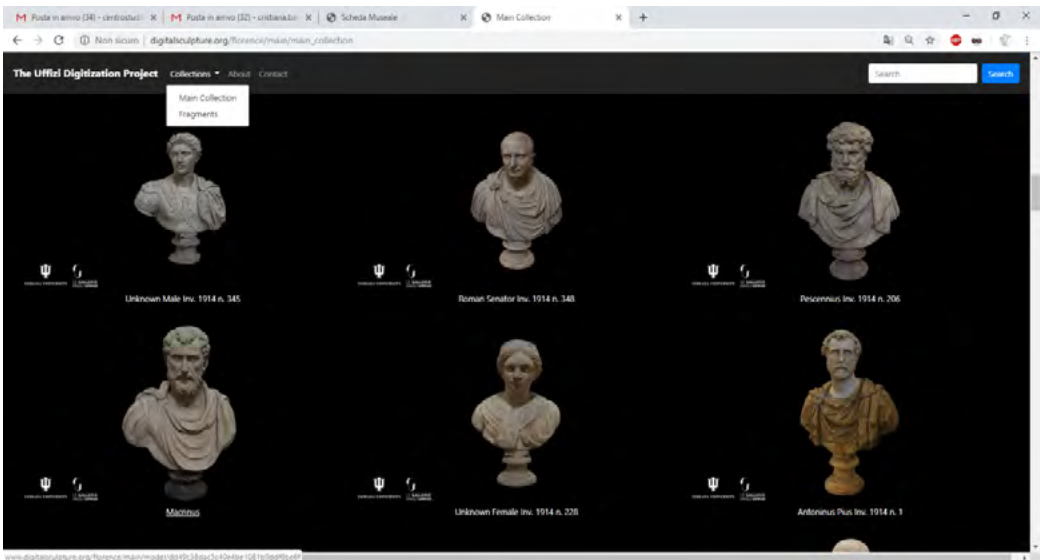


Fig. 4. Description. http://www.digitalsculpture.org/florence/main/main_collection.

- 26,000 people connected to the site (see www.goldunveiled.it), with peaks of 500 people per day;
- 15% increase in visits with application use;
- 78% of people who visited the Uffizi with the express purpose of seeing the archaeological collection.

Starting from the numbers, we reflected on what we had achieved with little; certainly, one might think that since the project took place in the Uffizi, the answer could only be a consequence. Since it was a test, no funds were allocated for research and development, nor were dedicated internal staff available, because the Communication Department (now the flagship of the Galleries) had not yet been established. Add to this the hyper-specialism of the theme of ancient polychromy and the lack of general awareness of the existence of the long-lived historical roots of the archaeological collection. The positive response paved the way for an implementation, so in 2015 work began on the entire collection, and not just on a very small part of it. The problems to be solved corresponded to its size and ranged from the simplest (how to build a better digital data collection resource) to the most complex (how to combine the general interest in classical sculptures with scientific research). In the previous section of this contribution, we discussed in detail the theoretical and philosophical procedure and the actions put in place for its realisation; since it is the exact same procedure, it is not worth repeating what has already been said, given that the subsequent implementation has gone through the same steps. Starting from the integral study of the catalogue of ancient sculptures drawn up and published in 1958 by Guido Mansuelli, the only tool/record that collects and documents the entire collection, including fragments, we thought about how to transform this precious historical archive into a digital collection. To start the rethinking of museum education tools, which had the knowledge of the entire collection as a prerequisite, guarantee-

ing accessibility and inclusion; it was of fundamental importance to implement a first cultural marketing action without being blocked by the preconception that *social networks* were not the right platform for digital communication significantly oriented towards *mediation* [8].

Thus, the launch of the hashtag — #uffiziarcheologia — was organised inviting nine Italian bloggers, each of whom had the task of narrating the ancient sculptures through their respective websites; everyone was given maximum freedom in the choice of the ancient work as well as in the way of relating with the respective public, however binding any contribution to the use of the dedicated code⁷. To provide a unique and clear image, one of the architectural elevations of the museum, famous all over the world, was used, a sublime creation by Vasari, already used in graphics in the old museum logo; to update it, a very high-resolution photograph was used and graphically framed. A contrasting message was added to the image: “Museum in a showcase? No, Thanks!”, both anticipated on the web, jointly or separately, in the weeks preceding the official launch day, in order to play the role of digital teaser with extreme effectiveness. The project was launched on 21st September 2015 and, from the very first hours, hundreds and then thousands of users connected to social networks and shared, commented, circulated, and expanded the dissemination of scientific content with their experiences. Such was the participation that the hashtag became a *trending topic*⁸, climbing the daily ranking of the 10 most important topics, ranking fourth (a position never reached by a state museum before): at the end of the day, more than 50,000 users had seen the faces of the classical sculptures of the Uffizi pass through their accounts (Facebook, Twitter, Instagram). A step in the project that would not have taken place if *social networks*, on which the experimentation was shared massively, had not been used: the museum experience could be said to have been completed since the narration had merged into the respective digital diaries, establishing an almost personal relationship between the place and the user, both beneficiaries of the event.

Now that the collection made its entry into the world of social media, the project must guarantee its stability and not to become a fleeting presence like that guaranteed by a *tweet* [23]. The next step had as a prerequisite the intensification of the stay and a greater amount of data to be offered to the users, which had to be accompanied by the involvement of the no longer passive public — the Museum that informs unilaterally — but actively — the user transforms into *prosumer*, i.e., a content producer [9]. To guarantee the practice, therefore, a further commitment was necessary: to unhinge the traditional museum-user relationship, offering a museum not as a container of works but as a workshop of ideas through which to accumulate experience with individual long-term practice, the so-called *experiential learning* [16; 10]. The archaeological collection therefore had to be exhibited and narrated by breaking down conceptual and physical barriers, limiting as much as possible the difference between a real and a virtual visit; finally, the practice of sharing had to be supported [22] alongside analysis, study, and research, without the slightest obstacle of the economic aspect [6].

⁷ Below is a summary of the contributions: <https://www.archeokids.it/uffiziarcheologia-intro/>; <https://museoarcheologiconazionaledifirenze.wordpress.com/tag/uffiziarcheologia/>; <http://www.professionearcheologo.it/uffiziarcheologia-diventare-trending-topic-con-la-cultura-si-puo/>; http://archeologiaedintorni.blogspot.com/2015/10/uffiziarcheologia-e-archoeblogger-per_9.html?m=0; <http://www.firenzetoday.it/cronaca/uffizi-diventano-social-hashtag-uffiziarcheologia.html>; <https://generazionediarcheologi.com/2015/12/07/uffiziarcheologia-le-radici-degli-uffizi-la-firenze-nascosta-che-nessuno-conosce/>.

⁸ “Trending Topic” means trendy, fashion topic; a theme appears in the list of 10 Trending Topics when the volume of tweets for that topic increases exponentially (“<https://www.teamworld.it/tecnologia/cosa-significa-trending-topic/>”).

The Virtual World Heritage Laboratory (VWHL)⁹, based at the Indiana University School of Informatics and Computing, United States, took up the challenge; a team of scholars was created, specialists in various disciplines who, with the technological support of the Polytechnic di Milano, started the largest 3D digitisation project in an Italian state museum¹⁰. In May 2016, two and a half years after the launch of the first digital project, the Galleries started a five-year collaboration (still ongoing) with the University of Indiana whose purpose is not only scientific research but also online publication, at no cost to the user, of the 1300 ancient works that make up the archaeological collection of the Galleries. The new website was officially launched in the summer of 2018, a real digital archive that contains full HD 3D models, complete with files and bibliographic references (Fig. 4).

The realisation of the 3D models occurs with the acquisition of images for photogrammetry [24], using the *Structure from Motion* (SFM) and *Image Matching* (IM) procedure, techniques that employ *computer vision* algorithms, by means of which it is possible to extract remarkable points from the photographs, obtain recognition parameters in each shot and detect, after measurement, the spatial coordinates of the points themselves [25].

Mann-in-colours

After this experience at the Uffizi Galleries, it immediately became clear that all the conditions existed to be able to expand the project on the search for an ideal method of communication of ancient polychromy. It seemed evident that an ideal place where the assumptions discussed so far could not only mature but evolve to their best, could only be the National Archaeological Museum of Naples, which in addition to the collections from Vesuvian sites includes one of the most famous and more complex: the Farnese Collection. Thus, in 2018, the *Mann-In-Colours* research project carried out in collaboration with the National Taiwan Normal University of Taipei was launched, starting from the scientific study of ancient polychromy aims at a visual rediscovery of ancient past. Focusing on the Farnese Collection, the new approach will allow for recomposing pertinent chromatic sets. All collected data will be systematised in a database shaped for this purpose, usable by scholars; a specific selection of data will instead be offered to general public fruition. Indeed, the National Archaeological Museum of Naples (MANN) has adopted a series of innovative strategies, whose purpose is to focus on people and human centric relationship.

After examining chromatic traces, sometimes imperceptible to the human eye but still existing on sculptures, Mann-In-Colours aims at a visual recovery that will revolutionise the aesthetic perception to which these works have accustomed people for centuries. Starting from chemical and physical surveys on selected sculptures belonging to the Farnese Collection, all the works of art analysed will be transformed into 3D models using photogrammetry [11].

All collected data are systematised into two different databases: one for scholars and one for general public fruition. The analyses on ancient polychromy, databases, and 3D modelling together address to the more general question on the reoccurrence of colours in the context of the artistic productions of the ancient world. To try to satisfy this complex request, it is necessary that a method is established according to which, in our specific case, takes into consideration not only the material object but also the context within which it is sited. It is not only dealing with theoretical speculation, but it is a question of ethics and responsibility towards visitors, to whom this research is addressed.

⁹ <http://www.vwhl.org/>.

¹⁰ <http://www.digitalsculpture.org/florence/>.

Mann-In-Colours continues in this direction, believing that it is fundamental to relate to the general public and relay their cognitive message for a sustainable philologically correct approach to Greek and Roman sculptures. To try and give some responses to huge enquiries, the project conferred in this paper concerns, on one hand, the creation of the first Italian database of ancient polychromy, sponsored by an Italian National museum, and on the other hand, the will to find a method for an inclusive communication strategy able to attract many people, combining the use of digital technologies and software, and never used in this field of study before. The link between the two actions is the determination to offer the researchers new experimental methods of approaching the theme as well as publishing (if we will be able to) all the results online in order to be helpful, inclusive, and at disposal for the scholars of the future. Our content delivery strategy will follow specific scheduled actions:

- The laboratory, i.e., expert room, open to public
- Construction of a database
- Photogrammetric campaign
- Creation of a digital colour path inside the museum in parallel with activities for kids
- The app (at the conclusion of the project) and finally to offer people an experience.

Conclusion

The evolution to which museums are subjects cannot and must not be exclusively retrospective, considering conservation as the only priority, but rather invite action for collective social development even before cultural development. Acting on change in these terms means being able to adopt solutions which impact can only be long-term, an oxymoronic relationship with respect to the desires of the *digital age*. The influence that the digital and virtual world has forces a general rethinking of the roles, especially the social ones, of the museum, which at times seem literally overwhelmed by a technology driven by unstoppable change. It might seem almost a paradox, but it is inside the museum that the evolution of the social context can be measured thanks to its reactivity to change and the potential flexibility of its actions: when open and participatory, museums offer a space that encompasses multiple channels of communication thanks to which they can reinvent and reorganise, each time in a different way, strengthening the relationships with their audience. Mediation (physical and virtual) thus becomes a tool that can make use of new media [3], proponents to understand and use heritage as a source of well-being, knowledge, and civil responsibility, without being overwhelmed by them. “Gold Unveiled” *revealed* how much public participation could be spontaneous and shared; how much it was necessary to prioritise the relationship with the humanity of the web (not only physically in the museum) whose only price to pay was not expressible in terms of simplification of knowledge but of respect for diversity (cultural, social and economic) following the essential principle of the right to know, for everyone. “Gold Unveiled”, has combined communication with pedagogy of heritage, showing how multiple forms of teaching can coexist, some clearly outside the box, such as the one that passes through the tweets of social networks [29]. “The Uffizi Digitization Project”, in collaboration with Indiana University, could not have existed if there had not been a three-year work upstream, made up of measurements, comparative analysis, public studies, and a significant amount of experimentation. If the maximum stay time of the contents published on social networks is 4 days, the evolution of the project could only lead to a stable website, within which there is no waiting or space limits, there are no queues, an entrance ticket is not required; where permanence and returning

users are welcome and potentially transformable into a physical visits; where it is not necessary to be registered and have an account to access scientific content, and where, finally, the research and study can occur without limits and preclusions. At this point, it is very clear that the experiments from 2015 to 2017 could not but converge in a larger structured prospect that would allow filling those gaps left open during the years of experimentation at the Uffizi Galleries. The possibility of using a museum in its entirety and specifically working on one of its major archaeological collections can help to confirm the validity of what was experienced during the first three years. The organisation of the work, now promoted and sponsored by the Neapolitan museum itself, can guarantee a sort of malleability of the research itself since on this occasion it is possible to create comparisons with works that do not belong to the Farnese but can be very useful in order to organise the project in organic way.

The possibility, in addition to being able to create dedicated tour itineraries and an almost physical experience with the themes of the project, certainly supports the methodological value but also to addresses the museographic and set-up aspect that is often sacrificed in favour of a relationship certainly more scenographic but less rigorous. Mann-In-Colours started in July 2018, but suffered a sudden setback due to the global health emergency for which in all probability the agreement with the University of Taipei will be renewed so that we can have a fair trial over a period of time corresponding not only to the realisation of scientific investigations but also to the dissemination towards the general public, which is our ultimate recipient, thanks to whom we can obtain feedback on the validity or otherwise on the projects tested proposals.

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Title. Researching Ancient Colours in Museums Collections: Best Possible Practices and Prospects

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Abstract. With this contribution, we intend to retrace all the salient phases adopted by the writer and the research groups involved starting from 2014 to date regarding the experimentation and search for an ideal method to be able to communicate the ancient colours in Greek and Roman sculptures. The cognitive path, which began in 2014 at the Uffizi Galleries, thanks to the following two and a half years, has ensured the structuring of a method of cognitive approach to ancient polychromy. Considering the activities at the Galleries definitively concluded, it was decided to set up a new working group that would put into practice the results obtained from the analysis of the experimentation with a stable and continuous museum method. In 2018, a new chapter of the project was launched at the National Archaeological Museum of Naples whose conceptual, theoretical, and practical structure retraces in its entirety the guidelines adopted previously: for this reason, this contribution, ample space will be given to the Florentine three-year period in favour of a

greater understanding of the cognitive processes currently adopted in Naples, without whose preliminary discussions they would not be clear or understandable.

Keywords: digital strategy, 3D modelling, communication, museums, archaeology, society

Название статьи. Изучение древних красок в музейных собраниях. Оптимальные практики и перспективы

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Аннотация. В этой статье мы намерены проследить основные этапы экспериментальных поисков оптимального метода изучения древних красок в греческой и римской скульптуре, предпринимаемых автором и исследовательскими группами с 2014 г. по настоящее время. Когнитивный путь, начавшийся в 2014 г. в Галереи Уффици, благодаря последующим двум с половиной годам обеспечил структурирование когнитивного подхода к античной полихромии. После окончания работ в Уффици было решено создать новую рабочую группу, которая будет применять на практике полученные в результате анализа экспериментов результаты со стабильным и непрерывным музейным методом. В 2018 г. в Национальном археологическом музее Неаполя была начата новая глава проекта, концептуальная, теоретическая и практическая структура которого полностью повторяет принятые ранее принципы. Для более глубокого понимания когнитивных процессов, принятых в настоящее время в Неаполе в статье уделено место флорентийскому трехлетнему периоду как предварительному.

После реформы Министерства культуры и туризма (2015 г.) Неаполитанский музей принял серию инновационных стратегий, цель которых сосредоточена на осознанном, инклюзивном и ответственном управлении коллекциями. Новые руководящие принципы деятельности музея связаны с необходимостью создания инструментов, которые помещают его в современное общество, глобализированное и динамичное; благодаря современным технологиям, которые полностью отвечают новому способу наслаждаться миром, музей устанавливает новую культурную политику, которая включает в себя в качестве приоритетов индивидуальные, коллективные, физические и экономические аспекты

Mann-In-Colours — научный проект, осуществляемый Национальным археологическим музеем Неаполя в сотрудничестве с Национальным Тайваньским педагогическим университетом в Тайбэе. Он призван оказать поддержку в распространении знаний о древней полихромии. Изучив хроматические следы на скульптурах, иногда незаметные для человеческого глаза, Mann-In-Colours стремится к визуальному воссозданию, которое произведет революцию в традиционном эстетическом восприятии, принятом на протяжении веков. Начиная с химических и физических исследований отдельных скульптур коллекции Фарнезе, изученные с этой точки зрения произведения искусства будут преобразованы в 3D-модели с использованием фотограмметрии. Все собранные сведения будут систематизированы в двух базах данных: одна из которых предназначена для ученых, другая — для широкой общественности. Все эти методы позволят подойти к решению общего вопроса о применении цвета в художественных произведениях Древнего мира.

Ключевые слова: цифровая стратегия, 3D-моделирование, коммуникация, музеи, археология и общество