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Unlocking Cultural Heritage during Lockdown and Beyond

By Peter Verhaar

Next to being a global health crisis, the outbreak of the COVID-19 pandemic, and the various measures that have been taken to curtail the spread of the virus, have undeniably had far-reaching consequences for the cultural heritage sector. The implications appear to have been most dramatic for museums. According to a survey conducted by UNESCO in May 2020, 90% of all museums worldwide were forced to close their doors following government-imposed measures to maximise social distancing at the beginning of the crisis (UNESCO 13).[1] Because of these strict virus containment measures, affecting both tourism and the international transportation of works of art, many of the physical exhibitions which were scheduled to open in 2020 needed to be cancelled or postponed.[2] During the short period in which museums were allowed to reopen in 2020, the number of visitors was understandably much lower than before the pandemic. The number of tourists had diminished considerably because of the advice against non-essential travel, and Dutch museums were allowed to admit a limited number of visitors only, within dedicated time slots. With many of their traditional sources of revenue dissolving, various museums are currently struggling to survive financially (NEMO 7).

The global outbreak of the coronavirus also resulted in a major disruption of the services of public and academic libraries. All Dutch libraries were forced to close their doors in March 2020. Almost all of the on-site activities, including courses and symposia, needed to be cancelled or postponed (Martzoukou 267; Burgt). Many libraries fortunately managed to continue to facilitate the lending of books despite the physical restrictions. A large number of public libraries had implemented a service in which books could be reserved using the online catalogue, and in which books could subsequently be collected without being in

contact with other people. Leiden University Library made use of its existing self service system based on lockers which enabled visitors to pick up books while maintaining social distance. Such 'contactless' forms of access could not always be realised in the reading rooms of Special Collections departments, however. In many cases, researchers were denied physical access to rare objects such as manuscripts, early printed books and old maps. After some of the measurements against the virus were relaxed in the second half of 2020, most academic libraries allowed visitors to book spaces in their reading rooms again.

Faced with the inability to facilitate physical access, many libraries and museums have valiantly begun to intensify their efforts to enable digital and remote access to heritage materials. COVID-19 has unleashed a period of frenetic activity, in fact, resulting in a profuse miscellany of digital resources, including virtual tours, vodcasts and online games. The rise of these online offerings has auspiciously been monitored by a number of scholars and organisations. UNESCO, for instance, had already documented more than 800 activities in response to the outbreak of the pandemic in early May 2020 (UNESCO). Chiara Zuanni has compiled a database documenting the digital resources that were developed by museums during the coronavirus pandemic, and she collected data about activities in a range of different categories, including "Social Media Initiatives", "Educational Content", "Streaming Content", and "Games". The locations of these initiatives have also been visualised using an interactive map (Zuanni). The *Network of European Museum Organisations* has conducted a survey among 961 respondents from forty-eight countries, which showed that 80% of the responding museums had increased their online activities, and that 16% of the museums had expanded the budget for the development of new

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[1] The duration of these closures varied from country to country, however, ranging from several days to several weeks or months. In the Netherlands, museums were temporarily closed for visitors during the first lockdown in between 15 March and 2 June 2020 and again during the second corona wave in between 15 December 2020 and 5 June 2021.

[2] Museum Boerhaave in Leiden has presciently prepared an exhibition named *Contagious!* (*"Besmet!"*), focusing on the outbreak of infectious diseases and their impact on daily life. Its original opening was scheduled on 15 April 2020, but this date obviously needed to be postponed because of COVID-19.

digital resources (NEMO 7). Incidentally, such overviews of digital initiatives have revealed a great global disparity in the nature of such online activities. Only 5% of museums in Africa and the Small Island Developing States were able to develop new digital content after the outbreak of the COVID-19 crisis. The institutions having sufficient resources to develop new digital exhibitions or virtual tours were mostly located in Western Europe and Northern America. Institutions in Africa or the Arab States mostly chose to intensify the promotion of existing digital resources (UNESCO 15-17). COVID-19 laid bare a poignant divide, insulating the wealthier institutions from those which appear to lack the required financial resources to invest in online access.

The manifold activities that were initiated during the pandemic appear to have been born out of two distinct motivations. On the one hand, institutions felt the need to react immediately and pragmatically to the challenges created by the COVID-19 crisis. In many cases, institutions aimed to ensure that, despite the numerous limitations, existing services could be delivered to all visitors in roughly the same ways as before the crisis. The existing digitised collections were also promoted more prominently as an alternative to the physical collections that had become blockaded. Symposia and lectures that had been planned already were often streamed live or converted into vodcasts (Martzoukou 268ff), and physical exhibitions which needed to be cancelled because of corona were occasionally transformed into online exhibitions. Beyond this urgency, on the other hand, many institutions also began to consider the consequences in the longer term, and started to seize this unprecedented moment in time as an opportunity to rethink their mission and their role at a more fundamental level. Rather than trying to continue business as usual, libraries and museums have also worked on innovative ways of engaging the public, developing applications and approaches that can improve upon the status quo before corona.[3]

Surveying the broad range of activities that have been launched during the pandemic, it may be argued that corona has fostered innovations and activities within four main areas of interest.

1. Institutions have offered access to rich contextual information about objects, moving beyond the mere provision of scans and metadata;
2. COVID-19 has spurred experimentation with the technologies that can be used to represent the material properties of heritage objects digitally;
3. Institutions have further explored the entertainment value of cultural heritage;
4. Institutions have collaborated more closely with the public on the creation and the preservation of relevant heritage materials.

This article discusses a number of the newly created resources in detail, and also speculates on the impact of these initiatives, as well as on their value for a post-COVID-19 society.

Contextualisation
For many heritage institutions, the process of digitisation principally entails the creation of digital reproductions of physical objects and of structured metadata describing these objects. The results of such digitisation processes are generally made available via repositories and online catalogues (Nauta, 55ff). Using the fixed fields that are available in standard metadata formats, however, it is mostly impossible or impractical to capture more elaborate information about the history, the social context and the reception of heritage materials. During the pandemic, heritage institutions have made available a myriad of digital resources offering rich historical and contextual descriptions of heritage materials. Initiatives such as these can be seen as an exponent of the task of heritage institutions to educate and to enlighten users.[4]

Capitalising on their expertise in the field of video conferencing, a capacity which staff members needed to develop out of necessity, many heritage institutions have ramped up the creation of videos containing descriptions or explanations of specific collections. Leiden University Libraries, for instance, has published a series of videos named "Van Kluis naar Kussen",[5] which offers viewers the opportunity to take a look behind the scenes of its Special Collections Department. In each video, curators, researchers and students are invited to discuss a specific collection, to highlight a number of treasures, and to explain how these materials can be used in research and in education. The Rijksmuseum has likewise developed a series

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[3] Rees Leehey notes that "there is a desire to revert to 'business as usual' as fast as possible and on the other hand, an ambition to fashion a different way of living that rejects the failed premises of the old normal." See: Helen Rees Leahy. "Cultural Access and the "New Normal"." *Cultural Practices*, 2020, culturalpractice.org/article/cultural-access-and-the-new-normal.

[4] A survey performed in Italy showed that museum directors view it as their main task "to educate users and enlighten them about the past". See Deborah Agostino, et al. "New Development: COVID-19 as an Accelerator of Digital Transformation in Public Service Delivery." *Public Money & Management*, vol. 41, no. 1, 2021, pp. 69–72, doi: 10.1080/09540962.2020.1764206.

[5] The title of this series of videos may be translated as "From the Stack Room to the Cushion". The cushions, in this context, are obviously the support materials used to protect the items that can be consulted in the Reading Room.

named "The Rijksmuseum from Home",[6] in which staff members discuss some of their favourite museum objects. A notable characteristic of these videos is that they have all been recorded at the actual homes of employees, and that the lectures of the presenters frequently strike a very personal tone. The enthusiasm of the speakers and the intimacy that is conveyed help to counteract the private and individualistic nature of watching videos at home (Tissen).

Next to such streamed or recorded videos, libraries and museums have additionally offered access to contextual information via online exhibitions. Since physical exhibitions often needed to be aborted or delayed, many institutions chose to re-use the contents that had been prepared already to develop digital equivalents of these physical events. In such virtual displays, institutions can present collections of related objects in combination with short or extensive prose texts, in which authors can write freely about the production process, the provenance or the significance of these objects, among other aspects. The Kunstmuseum Den Haag has created digital versions of many of the exhibitions that were shown on its premises. These online exhibitions consist of images of a number of selected objects, accompanied by explanatory texts.[7] The exhibition "Young Rembrant", which was on display at the Ashmolean Museum in Oxford in 2020, was also supplemented by an online exhibition which offered access to many of the texts written by the curators of this exhibition.[8]

The digitisation of the Bilderdijk Room in Leiden University's Academy Building in May 2021 forms another striking example of a digital resource offering rich contextual descriptions.[9] The room was named after Willem Bilderdijk, one of the main Dutch Romantic poets. Next to the high resolution images displaying the room and a selection of items from the Bilderdijk collection, visitors of the platform can also read informative descriptive texts about the history and the contents of these materials, and listen to readings of letters and poems by Bilderdijk.[10] The platform offers a good demonstration of the value and the significance of contextualisation. In addition to offering basic information about the objects in the collection, the digitised Bilderdijk room effectuates a very engaging form of access which stimulates visitors to learn and to respond.

Representation of materiality

While contextualisations can help visitors to become conscious of the history and the meaning of heritage objects, they generally fail to trigger an appreciation of the materiality of heritage objects. The direct encounter with a physical object in a museum is often valuable and appealing precisely because it enables us to experience the volume, the dimensions and the colours of these materials close by. Unique physical objects typically evince a sense of authenticity, and it is precisely this sense of uniqueness or 'realness' which Walter Benjamin appeared to be alluding to as he wrote about the 'aura' of works of art (Benjamin). The fact that such objects are part of a physical display within a heritage institution, with selected objects being placed in vitrines and on pedestals, often augments such a sense of authenticity and singularity.

During the last few decades, various heritage institutions have attempted to replicate or to approximate the experience of the physical encounter with material objects digitally. Such experiments have been driven by recent technological innovations. There have been important advancements, first of all, in the field of 3D scanning. Techniques such as photogrammetry, scanned models and volumetric models can now be used effectively to represent the spatial dimensions of material objects via point clouds (Kate). Equally important, clearly, are the technologies in the field of virtual reality and augmented reality that can be used to present such detailed spatial recreations of objects and of locations to users. Technologies such as these can be applied very productively within the context of cultural heritage. Kenderline has discussed a range of immersive and interactive digital environments with associated visual and sonic techniques which can give users the sensation of "embodying" or being present at actual heritage buildings and archaeological sites (Kenderline).

As the access to physical collections was repeatedly barred, COVID-19 has clearly heightened the urgency of these types of experiments. A large number of institutions have put considerable efforts into the development of interactive digital environments replicating both the physicality of heritage materials and the buildings in which they are housed. Whereas

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[6] Rijksmuseum. *Rijksmuseum from Home*, rijksmuseum.nl/en/stories/rijksmuseum-from-home. Accessed 22 July 2021.

[7] See, for example, kunstmuseum.nl/nl/tentoonstellingen/anderszorn or kunstmuseum.nl/nl/tentoonstellingen/glans-en-geluk.

[8] Ashmolean Museum Oxford. *Young Rembrandt*, ashmolean.org/youngrembrandtonline. Accessed 22 July 2021.

[9] Universiteit Leiden, *Bilderdijkkamer en collectie online te bezoeken*, 31 May 2021, universiteitleiden.nl/nieuws/2021/05/bilderdijkkamer-en-collectie-online-te-bezoeken. Accessed 22 July 2021.

[10] The digitisation project resulted from a collaboration between Leiden University Libraries, the Bilderdijk working group of the Maatschappij der Nederlandse Letterkunde, and, importantly, the project *Things that Talk*.

applications in the field of virtual and augmented reality typically demand dedicated equipment such as the Valve Index or the Oculus Quest, many museums have instead tried to represent the spatial dimensions of objects and exhibition rooms at a more modest scale as HTML5 pages on laptops or tablets.

Many people, perforce confined to their homes, received invitations to embark on virtual tours of museums such as the Louvre in Paris or the MOMA in New York. *Hastings Contemporary* even used a telepresence robot during the first lockdown to offer virtual tours of the museum.[11] In November 2020, the Mauritshuis in The Hague also announced that it had digitised many of its exhibition rooms together with large parts of its collection of paintings.[12] Visitors were invited to wander across the building, replicating the experience of a journey across a brick-and-mortar museum. They could also zoom in on specific paintings, at a level that would be nigh impossible with the physical objects. For a number of paintings, the museum also provided access to infrared scans of objects. The infrared scan of *Het aardse paradijs met de zondeval van Adam en Eva* by Jan Brueghel de Oude and Peter Paul Rubens reveals that the two dogs that can be now seen close to the middle of the painting were initially painted on a different location. King et al. have analysed the vocabulary that was used in the texts accompanying virtual tours and exhibitions of British museums, and observed frequent occurrences of words denoting movement or physicality. They argue that, through words such as these, viewers can experience the sensation of being on an active journey throughout the museum (King et al.).

Solace and diversion

As has been noted by many, COVID-19 is not solely a global health crisis (Pfefferbaum). Practices such as self-isolation and quarantine have clearly had mental and psychological consequences as well. Ostensibly in an attempt to combat these negative effects on mental health, many libraries and museums have begun to emphasise the capacity of art and culture to bring solace and comfort to human beings.

One notable trend is that GLAM institutions have started to use objects from their own collections in existing or newly developed online games. The Muséum national d'Histoire naturelle in Luxemburg launched an educational game in 2020 in which players were asked to match pictures of eggs to the animals that came out of these eggs.[13] The Lakenhal in Leiden has set up a 'Thuisatelier' ("Home Studio") with a range of creative assignments conceived by professional artists. Each of these assignments were inspired by objects that can be found at the museum.[14] Items from institutions such as the Getty Museum in Los Angeles, and the Muséum des Sciences Naturelles in Angers can be visited virtually in *Animal Crossing: New Horizons*, developed for the Nintendo Switch.[15] The Getty Museum has also developed a IIIF manifest converter which makes it possible to open any IIIF-compliant image to be used in the *Animal Crossing Art Generator*.[16] Although the educational value of some of these games is questionable, the aim to offer distractions via enjoyable activities during the lockdowns certainly seems laudable.[17]

Bidirectionality

Bartolini has argued that many of the digital resources that have been developed during the coronavirus crisis largely followed an approach in which content was broadcasted unilaterally to their audiences. She also noted that a number of institutions, by contrast, have implemented a more interactive and collaborative form of engagement, in which people were invited to participate more actively in the creation and the curation of content (Bartolini). During a time in which many people felt spiritless, or needed a break from depressing news headlines, many of the existing cultural crowd-sourcing activities received much renewed attention. Numerous

[11] Hastings Contemporary. *Robot Tours*, hastingscontemporary.org/robot-tours. Accessed 22 July 2021.

[12] Mauritshuis. *Virtueel Mauritshuis*, mauritshuis.nl/nl-nl/verdiep/de-collectie/virtueel-mauritshuis. Accessed 22 July 2021.

[13] Musée national d'histoire naturelle. *Participez à la grande chasse aux oeufs du 'natur musée'*, mnhn.lu/blog/2020/04/participez-a-la-grande-chasse-aux-oeufs-du-natur-musee. Accessed 22 July 2021.

[14] Lakenhal. *Museum De Lakenhal open Thuisatelier*, lakenhal.nl/nl/verhaal/museum-de-lakenhal-opent-thuisatelier. Accessed 22 July 2021.

[15] @Museum_Angers. "Muséum fermé ? Pas de problème, notre musée est ouvert sur Animal Crossing et on vous en propose une visite guidée
Mercredi 8 avril à 16h !
La visite sera animée par un de nos médiateurs !
plus d'infos
#AnimalCrossingNewHorizons #ACNH #CultureChezNous." *Twitter*, 6 April 2020, 6:36 p.m., twitter.com/Museum_Angers/status/1247201441674035201?s=20. Accessed 22 July 2021.

[16] Getty. *Animal Crossing Art Generator*, experiments.getty.edu/ac-art-generator. Accessed 22 July 2021.

[17] Although it is strictly speaking not an example of a digital resource, the initiative of the Stedelijk Museum in Schiedam to commission local artists to create works of art that can bring consolation, appears to be relevant in this context too. See: stedelijkmuseumschiedam.nl/troostkunst-uit-schiedam/.

blog posts and social media messages[18] began to share links to platforms such as the Smithsonian Transcription Centre,[19] the Zooniverse,[20] or the Dutch website *VeleHanden*.[21] Such platforms could provide people with an interesting and potentially addictive set of tasks, made particularly rewarding through the realisation that these tasks also accomplished something useful for the GLAM sector. A number of institutions have also enhanced their presence on platforms such as Facebook, Twitter and Instagram (UNESCO 16). Given the fact that 45% of the world's population had access to social media in 2019, such social media can enable heritage institutions to reach larger audiences (Agostino). The Rijksmuseum Twitter account had 241.000 followers before the start of the first lockdown in May 2020, and this number grew to 255,500 in July 2021. The number of followers of the Mauritshuis's account grew from 27,000 to 32,800 during the same period.[22]

Ever since the first announcements of the socially disruptive measures that are needed to counter the pandemic, many people have also started to share their experiences of self-isolation online at their own initiative. Life during lockdown has given rise to countless outbursts of reflection, anger and calls for acquiescence on a variety of online channels. Obviously, such photos, web pages and social media posts documenting people's responses to COVID-19 can eventually be of great historical value, and a large number of agents have fortunately decided to curate and to preserve these born-digital materials. The Historical Museum in The Hague has begun to document the cultural impact of the coronavirus by curating large numbers of photographs, movies, diaries and material objects. This 'corona collection' was created by museum staff in close collaboration with volunteers and professional photographers, who collectively represent the uncertainty, the sorrow and the creativity that resulted from the lock down period.[23] The National Museum Wales has likewise set up a platform to stimulate people to share objects that reflect their experience of the pandemic in Wales (Knott). Given the ephemeral nature and the sheer quantity of such materials, the aim to curate these materials also raises various questions about what and how to preserve (Arvanitis).

Arguably, one of the most compelling developments to emerge from the crisis in the cultural sector is the massive traction of participatory movements on social media. The hashtag #tussenkunstenquarantaine ("Between Art and Quarantine"), which identifies an initiative that was started by Anneloes Officier on Instagram, encourages people to replicate works using objects found at home. In May 2020, more than 50,000 replications had been posted already.[24] The immense popularity of this project reiterates the notion that the experience of culture can bring solace and diversion during times of hardship. The initiative inspired the Getty Museum to launch a similar movement under the hashtag #gettymuseumchallenge.

Digital access to heritage beyond COVID-19

The activities that have been discussed above are by no means new to the GLAM sector. Many institutions have already been experimenting for several years with platforms for user-generated content, with immersive and interactive digital environments and with means of contextualising heritage objects. It is clear, nonetheless, that the corona crisis, and, more specifically, the predicament that, for many months, digital access has in fact been the only form of access, has served as a pressure cooker for many of these developments. Libraries and museums were forced to realign services and to redesign platforms hastily, and the urgency and the imperative nature of such adaptations also functioned as catalysts for innovation. The crisis seems to have made institutions more agile and more flexible, for the time being at least, quickening the incubation and implementation of new ideas and inventive adroit services.[25]

At the time of writing, it is still uncertain if, how and when our current society can make a

[18] Open Objects. *Useful distractions: help cultural heritage and scientific projects from home*, openobjects.org.uk/2020/03/useful-distractions-help-cultural-heritage-and-scientific-projects-from-home. Accessed 22 July 2021.

[19] Smithsonian, *Smithsonian Digital Volunteers: Transcription Center*, transcription.si.edu. Accessed 22 July 2021.

[20] See, for instance, zooniverse.org/projects/bldigital/living-with-machines.

[21] Vele Handen, velehanden.nl. Accessed 22 July 2021.

[22] These historical numbers have been collected by consulting the archived versions of Twitter profiles on the Internet Archive's *WayBackMachine*, available at archive.org/web. Accessed 22 July 2021.

[23] Haags Historisch Museum. *Corona-collectie Den Haag*, haagshistorischmuseum.nl/tentoonstelling/corona-collectie-den-haag-in-lockdown. Accessed 22 July 2021.

[24] In June 2021, the hashtag #tussenkunstenquarantaine brought together more than 70,000 posts, see instagram.com/explore/tags/tussenkunstenquarantaine/. Accessed 22 July 2021.

[25] Martzoukou concurs that COVID-19 has "created radical shifts for Higher Education institutions, some of which, under normal circumstances, would have taken years to materialise due, for example, to logistic, operational or bureaucratic hurdles, or simply because of a managerial or higher-level strategic resistance to "new ways of thinking."" See Martzoukou, p. 69. A similar argument is presented in Agostino et al.

transition back to a state of normalcy, although the inchoate effects of mass vaccination programmes seem mildly reassuring. By the same token, the nature of the digital transformation of the GLAM sector is still precarious. While it is clear that COVID-19 has led to an unprecedented willingness to experiment with innovative digital technologies, this enthusiasm may also dissipate when libraries and museums can finally resume their on site services fully. The pandemic may also demonstrate all the more clearly that the physical encounter with the material objects remain indispensable and that any digital and online surrogate will inevitably result in an inferior experience (Alexis).

These uncertainties can be addressed and attenuated, to some extent, by evaluating the impact and the appreciation of the digital resources that have been launched since the start of the crisis. Heritage institutions generally aim to make sure that anyone who is interested in studying their collections can do this in a convenient and a meaningful manner. The relevance and the impact of digital initiatives can consequently be evaluated by considering the degree to which these services and applications manage to engage their users.

Phenomena such as impact and appreciation cannot be measured directly, but, in the digital age, there are a range of quantitative data which can potentially serve as proxies for such phenomena. The impact of the presence on Twitter can potentially be gauged, for instance, through a count of the number of likes and retweets. In the period between 15 March 2020 and 1 June 2021, the Rijksmuseum has posted 628 tweets. These were liked 109 times and retweeted twenty-five times on average. There were twenty-six tweets without any likes and thirty-six tweets without retweets. To place these numbers in perspective, they can be compared to a period immediately before the pandemic, from 1 January 2019 to 15 March 2020. Before the pandemic, tweets were retweeted thirteen times and liked forty-one times on average. The likes and the retweets of the tweets posted by the

Mauritshuis, the Van Gogh Museum and the Kröller Müller museum display a similar pattern during this time frame. The number of likes increased by 59%, 42% and 98% respectively. The number of retweets of messages posted by the Mauritshuis grew by 195%.[26] The 23 videos in the Rijksmuseum From Home playlist have been viewed 4.815 times and liked sixty-two times on average.[27] To compare the situations before and after the lockdown more extensively, I have compared the statistics of sixty-three videos that have been published after the start of the first lockdown and fifty-eight videos that have been published before this date.[28] The videos that have been published after 15 March 2020 have been viewed 10.757 times on average. For the earlier videos, the average was 3.493 views. The Rijksmuseum's most popular video focused on the secret compartments of luxury desks, and it attracted 86,376 views. The more recent videos were liked 96.7 times and received 7 comments on average. The pre-COVID-19 videos were generally liked 14.8 times, receiving 0.8 comments. While it may not be entirely fair to compare the playlists published before and after COVID-19 because of the differences in nature and subject matter, these statistics do suggest a considerable increase in the level of user engagement since the start of corona.[29]

The number of likes that are awarded to the tweets and the videos of the large Dutch museums are dwarfed, nonetheless, by the number of users that appear to have followed the movement identified using the hashtag #tussenkunstenquarantaine. The Instagram account has 263.476 followers, and the 245 recent posts that can be downloaded using Facebook's Developers API have been liked 7,168 times on average, with 157 comments. Interestingly, the Rijksmuseum tweet which was retweeted most frequently during the pandemic was a post about the #tussenkunstenquarantaine initiative.[30] This specific participatory movement started by users not affiliated with a heritage institution is clearly very successful in attracting large audiences. This single example suggests that, for heritage institutions, it appears

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[26] These numbers have been collected using the Twitter API on 22 July 2021. See: developer.twitter.com/en/docs.

[27] The data have been retrieved using the Youtube Data API on 22 July 2021. See: developers.google.com/youtube/v3.

[28] These videos have been taken from the Youtube playlists named "Rijksmuseum Sessions," "Rijksmuseum in 60 Seconds," "Rijksmuseum From Home," "RijksmuseumUnlocked," "Tentoonstellingen," "Rijksmuseum College: Van Middeleeuwen tot Mondriaan," "Education" and "Past Exhibition." Accessed 22 July 2021.

[29] Agostino et al. likewise found that the hundred largest Italian state museums all increased the number of daily posts after March 2020, and that the number of followers also expanded accordingly. This development did not coincide with an increase in the number of likes and comments, however. See Agostino, et al., p. 70.

[30] @Rijksmuseum, "Instagram-account #tussenkunstenquarantaine heeft iets heel leuks bedacht:
Kies je favoriete schilderij
Vind 3 dingen die in je huis rondslingeren
Maak je eigen versie van het schilderij
Inspiratie nodig? Onze collectie is online te vinden: http://rijksmuseum.nl/rijksstudio/." *Twitter*, 19 March 2020, 2:31 p.m., twitter.com/rijksmuseum/status/1240631929516457984. Accessed 22 July 2021.

to be more productive to participate in activities that have been initiated by users already than to try and attract audiences to their own social media channels.

The data that can be extracted from social media platforms evidently paint one small part of the picture only. Since the start of the pandemic, various studies have been conducted on the use of the digital offerings of heritage institutions during the pandemic. A study conducted by the Museums Association in the Netherlands has shown that 22% of all Dutch people had made use of digital resources offered by heritage institutions, and that a majority of these visitors had also rated such encounters positively (Raad voor Cultuur 9). Analyses based on the usage statistics of the servers of museums indicated a pronounced rise in the number of visitors. In the NEMO survey, 15% of the responding surveys reported a 25-35% increase in online visits, and 13% reported an increase of 40-55% (NEMO, 14). The Louvre in Paris even reported a threefold increase during the first few months of the pandemic (UNESCO, 15). During several rounds of consultations with staff members of heritage institutions, it was also reported that the audience had also become much more international (Heijkoop). A study carried out by the Audience Agency in the United Kingdom interestingly focused on the attitudes and motivations of online users. The survey revealed that 29% of all the respondents visited a website of a cultural heritage institution at least once a week, while 34% of the respondents had never visited a website of a museum prior to the pandemic. Respondents indicated that they engage with digitised heritage because they want to learn, to be entertained, to boost their mood or "to reduce stress or anxiety" ("The Audience Agency Digital Audience Survey").

Studies conducted in the Netherlands also clarified that it became easier for museums to reach people with physical disabilities (Raad voor Cultuur 10; Heijkoop). Helen Rees-Leahy has added, however, that there is a certain acerbity in this finding. While people with physical disabilities have actually been demanding improvements in digital access for decades, their requests were granted only after large numbers of healthy people found themselves deprived of access to culture as well (Rees-Leahy).

Whereas heritage institutions typically aim to effectuate "universal access" to their collections (Kahle), and to ensure that individuals of whichever background or skill level can interact with these materials, studies of the use of the digital resources that were made available during the COVID-19 crisis indicate that it continues to be difficult to reach certain groups of people online. Heijkoop argues that COVID-19 has resulted in a closer connection with a smaller network (Heijkoop). People in the age group of 55 or older are generally not as proficient in the use of digital media as younger people, and that there is subsequently a lower level of engagement with digitised materials among these individuals (Tissen; Heijkoop). At the same time, elderly people felt hesitant to visit physical museums during the corona crisis as well, because of the health risks involved in visiting confined spaces and touching door handles (Museumvereniging). It needs to be stressed, additionally, that still only 55% of all global households is connected to the internet, and that, in the least developed countries, only 19% of the population can access the internet (World Economic Forum). Next to the digital divide separating affluent institutions from those which struggle to invest in the access to digitised resources, the inability to use or to access online information, among elderly people or among people living in developing countries, forms another clear obstacle to the democratization of digital access to cultural heritage.

Any conjecture about the future of the digital transformation of the GLAM sector would be incomplete without a consideration of the ways in which resources can ultimately be funded. Various reports have indicated that the financial consequences of the corona crisis have been particularly severe for museums, as these institutions are largely funded through admission tickets and commercial activities on site (UNESCO 13). About 60% of the museums reported a loss of €20,300 a week on average (NEMO 2). In a study conducted by UNESCO survey, it was found that about 60% of the self-employed museum professionals have lost employment (UNESCO 18). About half of the museums that were analysed in a study carried out by NEMO expected that they needed to discontinue specific projects and services in the future because of a lack of funding (NEMO 10). In spite of such financial hardship, many institutions have also invested heavily in the development of digital gateways to their collections. The resultant digital resources have mostly been made available without any charges. Given the dire financial circumstances of heritage institutions, it is unclear whether the free provision of digital services can be sustained, especially since such services usually demand continuous maintenance (Agostino 70). Tissen argues that it is no longer sustainable to rely

exclusively on revenue generated from physical visits (Tissen). It is important for museums to develop new business models for their online activities which would enable them to develop and maintain the initiatives sustainably. Institutions may choose to continue the free delivery of services, in line with the philosophy that arts and culture ought to be accessible to anyone, but such a scenario would probably demand considerable financial support by local and national governments. Agostino et al. note that institutions can also implement a 'freemium' service, in which part of the content can be accessed free of charge, and in which visitors only need to pay for more advanced services, such as, for instance, an online audio-tour (Agostino, 70). As yet another alternative, libraries and museums can invite visitors to make regular voluntary donations. Using platforms such as Patreon, Culture Fix, or the Dutch Petjeaf, users can express their appreciation for a service through a membership which entails a periodical monetary contribution. Digital initiatives have become vital for the durability of the cultural

sector, and the many activities that are needed to maintain these initiatives clearly need to be funded, come what may.

Regardless of the abiding uncertainties, it is evident that the corona crisis has led both to challenges and to opportunities for the GLAM sector. On the one hand, the decisions to close the vast majority of heritage institutions and to restrict international travel has resulted in enormous financial difficulties. Libraries and museums, on the other hand, have also proven to be highly resilient. The need to develop strategies to mitigate the negative effects of this calamity have simultaneously released remarkable creativity. It has truly been inspiring and heartening to observe that, in spite of the disruptive restrictions, institutions have continued to feel committed, and perhaps even more strongly than before, continued to ensure that audiences can still experience the intellectual stimulation and the historical sensation that can ensue from the encounter with cultural heritage. ■

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