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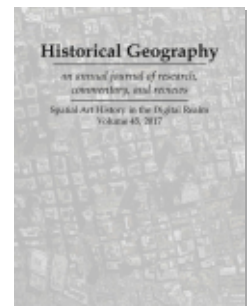
Introduction to the Special Issue: Spatial Art History in the Digital Realm

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Introduction to the Special Issue: Spatial Art History in the Digital Realm

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ABSTRACT: Art historians and other humanists are increasingly turning to geographic information systems (GIS) and other digital technologies to ask provocative questions, assess complex data, and publish fresh findings. The collection of essays gathered here focuses on art historians' turn to making maps themselves. As geographers know well, maps represent makers' decisions about perspective, scale, and representation of space. Art historians have long investigated the same characteristics of art as artists working at disparate moments in history and in far-flung places have explored perspective, scale, and spatial representation in their works. At times, such artists prompt viewers to consider how people represent space, to question what maps are, to think about how people make maps, and to wonder at the curious ways in which people engage with spatial renderings. Geographers ask similar questions about mapmakers and the images they make. But while the discipline of geography has long encompassed mapmaking in its practice, the discipline of art history has not historically encompassed the making of maps. This special issue examines what happens when art historians begin making maps. It features ongoing art-historical research projects that rely on the scholarly construction of maps to investigate data, refine understanding, and disseminate findings about the production, circulation, or reception of art. We assert that this turn to the production of maps in art-historical research is an endeavor separate from the art-historical study of maps as images. It actually constitutes a break with longstanding scholarly conventions in the discipline, especially with respect to the role of iteration in research and to the presentation of results.

Introduction

Art historians and other humanists are increasingly turning to Geographic Information Systems (GIS) and other digital technologies to ask provocative questions, assess complex data, and publish fresh findings. Recent events signal this trend. Middlebury College hosted the Kress Summer Institute on Digital Mapping and Art History in August 2014; Emory University launched "MAP IT | Little Dots, Big Ideas," a lecture series on digital mapping and the humanities, in the spring of 2016; the College Art Association (CAA) now has a field editor in digital humanities and art history; and the Getty Foundation, Kress Foundation, and other institutions are hosting symposia and other meetings on art history and digital mapping all over the world.¹ Indeed, digital mapping and other computational methods are transforming art-historical study.²



Figure 1. Raphael, *Philosophy (School of Athens)*, Stanza della Segnatura, Vatican Palace, Rome, Italy, 1509–11. Fresco, 19' x 27'. (Source: https://commons.wikimedia.org/wiki/File:Raphael_School_of_Athens.jpg)

The collection of essays gathered here focuses on art historians' turn to making maps themselves. As geographers know well, maps represent makers' decisions about perspective, scale, and representation of space.³ Art historians have long investigated the same characteristics of art. For example, in *Philosophy (School of Athens)* (1509–11), Raphael exemplifies use of one-point perspective to create an illusion of three-dimensional space on a two-dimensional surface (Figure 1). Painted on the wall of the Stanza Della Segnatura at the Vatican, Raphael's mural measures nearly thirty feet long and twenty feet tall, encompassing the viewer. It also collapses time, inviting the viewer to occupy the same space as Aristotle, Plato, Ptolemy, Pythagoras, other celebrated thinkers, and the artist himself. Created from maps, trade routes, and architectural renderings layered on top of each other, Julie Mehretu's *Mural* (2009) covers a wall in the entrance lobby of a Goldman Sachs building in lower Manhattan (Figure 2).⁴ Stretching some eighty feet in length and twenty-three feet in height, the work overtakes passersby in a hub of global capital. A viewer who stops to look at the work up close or from afar might get lost in the layers, which are not clearly discernable as images of any specific place.⁵ Whereas Raphael's *Philosophy (School of Athens)* offers viewers a single, legible space, Mehretu's *Mural* presents viewers with an image that denies such readability. Raphael and Mehretu, working five hundred years apart, in disparate

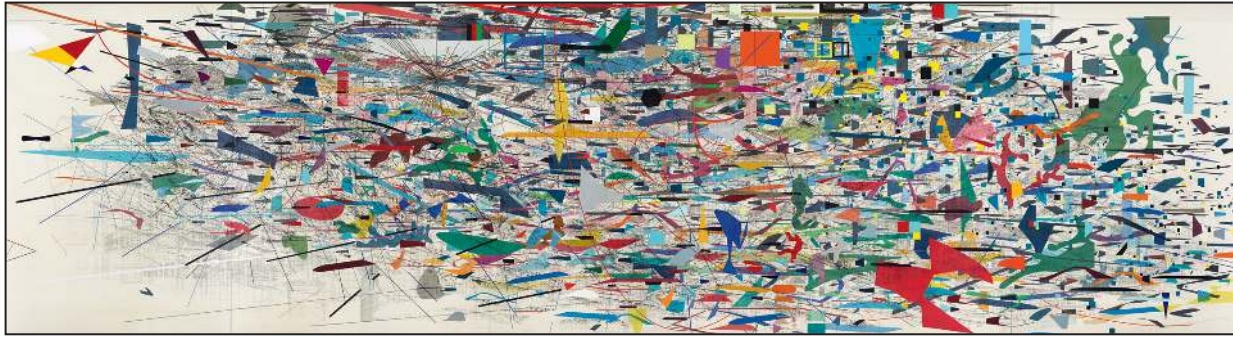


Figure 2. Julie Mehretu, *Mural*, Ink and acrylic on canvas, 22' x 80'. Collection Goldman, Sachs & Co. 2009. Photo credit: Tom Powel. Courtesy of the artist and Marian Goodman Gallery, New York
© Julie Mehretu

places, in distinct contexts, and for different patrons, provide viewers radically divergent treatments of perspective, scale, and representations of space—aspects of the works that art historians commonly consider in their analyses.

Artists who reflect on perspective, scale, and representations of space prompt us to think about how we see and experience maps and the information they contain. In a series of Google Earth tracings, Marcus Neustetter investigates the dislocating effect of pixelation that computer users experience when they zoom into Google Earth images of particular places. According to Neustetter, images of places familiar to the viewer become unfamiliar as the images dissolve into discernable pixels.⁶ When in 2013 he transferred one of his Google Earth tracings to the façade of the Rocket Factory, an apartment building in Johannesburg's Maboneng neighborhood, Neustetter changed the perspective and scale of the tracings, rendering images of the neighborhood even more unfamiliar to passersby (Figure 3). No longer a Google Earth view of Maboneng on a screen in front of the user or in the user's hands, the enlarged image of Neustetter's tracing on the front of the building towers above passersby who, when looking at the façade, may notice organic gray shapes on the building's white-and-black front but may not recognize the shapes as drawings of the very street on which they and the building stands. The sketch-like qualities of Neustetter's Google Earth tracings combined with his alterations of perspective and scale create an image that resists legibility as a particular place, even one familiar to viewers.

Neustetter's Google Earth tracings reflect his longstanding interest in exploring how people understand their positions in space, navigate cities, and use technology. Fascinated in the early 2000s by technologies then not yet commonplace, Neustetter and his colleague Stephen Hobbs used their phones to communicate their exact locations to each other within the dense city of Johannesburg. The pair explored how digital navigation of a city compared with how people navigated or remembered navigating cities without phones. Referred to as a Hobbs/Neustetter project, *TangoCity* reflects the two artists' constant curiosity about how people experience the cities where they live. In their 2006 project, *UrbaNET Hillbrow-Dakar-Hillbrow*, Hobbs/Neustetter asked people who had moved to Johannesburg, South Africa, from Dakar, Senegal, to draw maps of the Senegalese city (Figure 4). Equipped with the hand-drawn maps of Dakar as their only wayfinding devices during a two-week residency at Kër-Thiossane, a center for art and multimedia, Hobbs/Neustetter traveled to the Senegalese city and used the maps to guide their journeys through it.⁷ Whereas other maps of Dakar might have allowed Hobbs/Neustetter to find their way around the city more efficiently, their insistence on obtaining and using hand-drawn



Figure 3. Marcus Neustetter, Rocket Factory, Maboneng, Johannesburg, South Africa, 2015.
(Photo credit: Marcus Neustetter)

maps led the pair to more personal encounters with the mapmakers, the mapmakers' memories of specific people and places in the city, and people living and working in Dakar. Mapmaking and map viewing are always subjective. Hobbs/Neustetter highlight this aspect of maps, inviting further analysis.

Though artists working at disparate moments in history and in far-flung places, Raphael, Mehretu, and Hobbs/Neustetter all explore perspective, scale, and spatial representation in their works.⁸ At times, they prompt viewers to consider how people represent space, to question what maps are, to think about how people make maps, and to wonder at the curious ways in which people engage with spatial renderings. These considerations also frame art-historical investigation of such works.⁹ Geographers ask similar questions about mapmakers and the images they make. The discipline of geography has also long encompassed mapmaking in its practice. Yet the discipline of art history has not historically encompassed the making of maps.¹⁰ This special issue examines what happens when art historians begin making maps to advance their work. It features ongoing art-historical research projects that rely on the scholarly construction of maps to investigate data, refine understanding, and disseminate findings about the production, circulation, or reception of art. We assert that this turn to the production of maps in art-historical research is an endeavor separate from the art-historical study of maps as images. It actually constitutes a break with longstanding scholarly conventions in the discipline, especially with respect to the role of iteration in research and to the presentation of results.

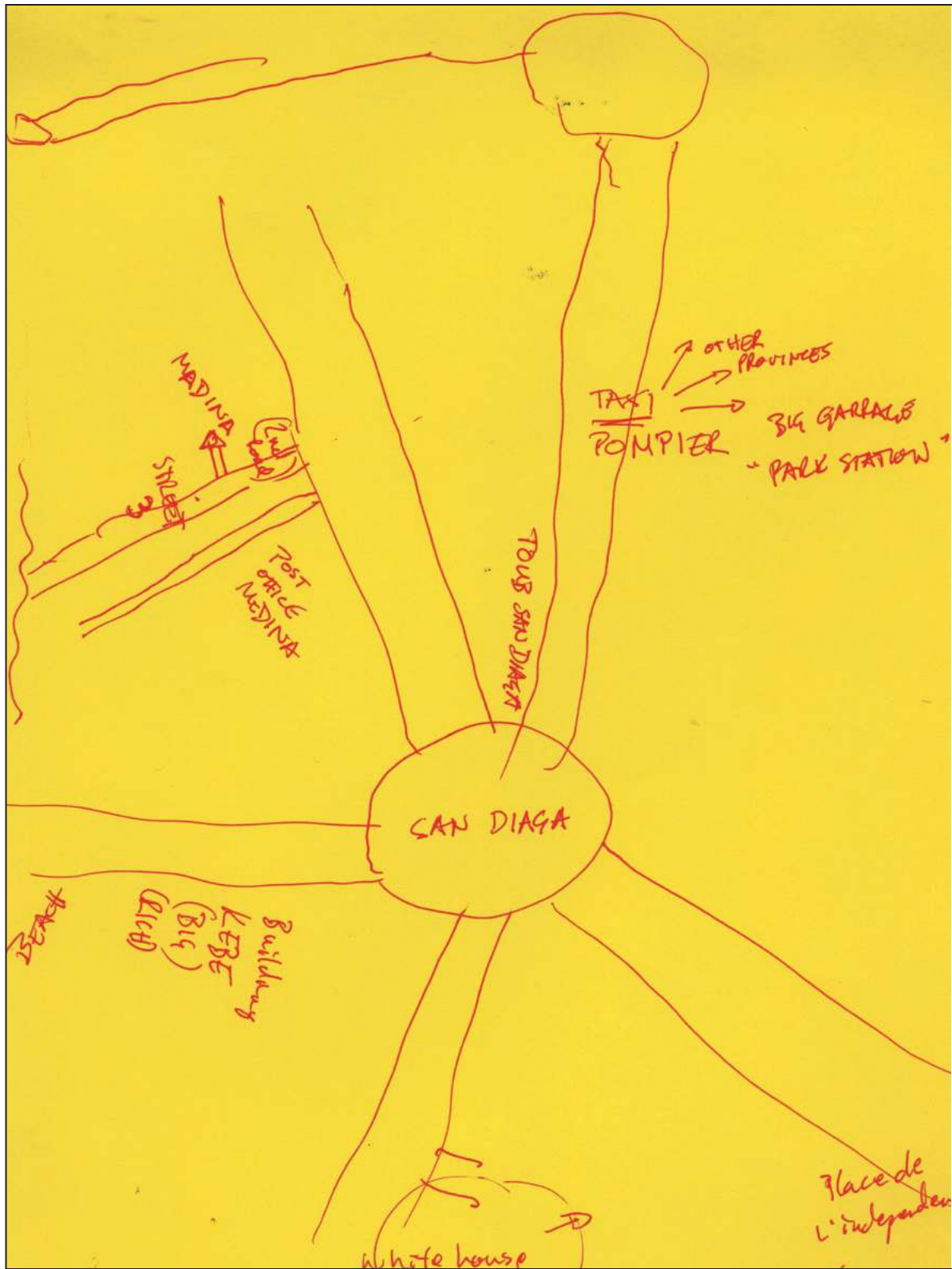


Figure 4. Hobbs/Neustetter, *UrbaNET Hillbrow-Dakar-Hillbrow*, 2006.
(Photo credit: Stephen Hobbs and Marcus Neusetter)

Digital mapping: iterative, process-based, and collaborative

Presentation of art-historical research, including map-based research, as work still-in-the-making may be more novel for scholars of art history than scholars of geography. Our own experiences of presentations at annual meetings of CAA and the American Association of Geographers (AAG) from 2015 to the present suggest that the two disciplines approach the production and dissemination of knowledge in fundamentally different ways. Recent CAA presentations generally favored rhetoric at the end of a single researcher's process, even if the research addressed in the presentation is part of an ongoing project. By contrast, recent AAG presentations regularly highlighted findings and challenges in ongoing research, often the work of a team, thereby foregrounding method as well as the iterative and collaborative nature of research.

This distinction between disciplines may hinge at least in part on methods commonplace in different disciplines as well as how different disciplines approach method. When scholars in one discipline begin to incorporate methods from other disciplines into their work, they may find it helpful to account for and explain the foreign methods, especially when methods involve new technologies. GIS, including Historical GIS (HGIS), and other digital mapping tools require collecting data, structuring data in a database, and importing the data into maps.¹¹ Geographers and other scholars who engage with digital mapping often provide an overview of the precise methods utilized for a particular project in order to account for the interpretation of their data visualizations and the analyses the visualizations yield.¹² This attention to data often yields new insights. Geoff Cunfer's essay "Scaling the Dust Bowl," for instance, explains how he used county climate data to counter standard narratives of the Dust Bowl's origins in the 1930s, such as the one presented in Donald Worster's canonical text *Dust Bowl: the Southern Plain* (1979) and the one told in conjunction with images by Farm Security Administration-funded photographers including Walker Evans, Russell Lee, and Dorothea Lange. Authored decades before historians turned to computer-supported geographic analysis, Worster argues that overfarming of land in the southern plains in the 1930s led to the Dust Bowl. However, Cunfer's computer-generated GIS maps drawn from county weather records allowed him to examine in detail how much land was actually farmed and how the farmed land aligned with the locations of the so-called Dust Bowl storms. Cunfer demonstrates that farming did not necessarily precipitate the devastating storms. Based on careful analysis of available data, his conclusions refine historical understanding and challenge longstanding narratives.¹³

Cunfer's essay describes data and method, meaning how he analyzed his data. His use of the term *method* differs from many art historians' use of the term. Within the discipline of art history, *method* has often designated any specific theoretical approach used to analyze a work—think feminist, iconographic, or Marxist.¹⁴ This use of the term blurs lines between method and theory, leading to imprecisions in analysis. According to religious studies scholar Ronald L. Grimes, "*method* is the 'how' of research, the bedrock of practical knowledge that enables us to do things well in the field."¹⁵ It contrasts with *theory*, which Grimes explains "labels almost any collection of terms or concepts used to frame discrete bits of information." He adds that *theory* "refers to concepts capable of orienting a transformation of intervention."¹⁶ Methods, theories, and the data between them coexist in a relationship that Grimes characterizes as "circular and interactive rather than linear or hierarchical."¹⁷

While Grimes differentiates *method* from *theory*, art historians have often conflated the two terms. Feminist, iconographic, or Marxist approaches reflect frameworks for organizing information or transforming understanding. They do not describe the mechanics of research.¹⁸

When art historians characterize their approaches as feminist, iconographic, Marxist, or something else, they explain how their evidence coincides with or challenges certain concepts or interventions rather than clarify how they obtained their evidence or analyzed it. This foregrounding of theory over method results in presentations and publications that eschew the iterative nature of research. Accounting more explicitly for the ‘how’ of art-historical analysis would make more evident the iterative nature of inquiry, a feature common in presentations of geographic research.

One guest co-editor of this special issue, Joanna Gardner-Huggett, became aware of art history’s conflation of method and theory ten years ago when she started investigating the histories of feminist art collectives ARC Gallery (1973 to present) and Artemisia Gallery (1973–2003) in Chicago. Very little art-historical literature existed on the subject, so sociological, anthropological, and ethnographic studies served as important models. María Ochoa’s book *Creative Collectives: Chicana Painters Working in Community* (2003) draws on oral histories to evaluate how the northern California-based art collectives Co-Madres Artistas and Mujeres Muralistas changed over time.¹⁹ Attentive to her methods and to the different voices she collected, Ochoa was careful to recognize the heterogeneities inherent in the collectives. When framing individual interview questions, she considered each participant’s ethnicity, political consciousness, class background, and sexual orientation in addition to artistic ability. Intentional practices like the ones Ochoa employed allowed her to produce scholarship that gives visibility to individual members and the complexities of their identities as well as establishes each group’s collective and dynamic history.²⁰

Ochoa’s writing provided Gardner-Huggett with models for thinking about methods that do not drive a particular historical conclusion alone but rather work in concert with a close and systematic evaluation of available data. Gardner-Huggett’s writing is now more careful to account for her interviews with individual artists who belonged to ARC and Artemisia as well as her study of policies written and implemented collectively by members of each space. This change reflects Gardner-Huggett’s response to journal reviewers who regularly asked how Gardner-Huggett determined the impact of each space’s artistic and educational programming beyond the immediate membership. Reviewers also suggested that Gardner-Huggett consider exit surveys from workshops in order to assess the results of Artemisia’s programming in a more concrete way.²¹ Realizing that this kind of data was rarely available, Gardner-Huggett explored other means to evaluate the influence of Artemisia’s programming.²² Prompted by her reviewers to examine more closely her data and methods, Gardner-Huggett began to investigate the potential of digital mapping to explore the geographic range of participation by visitors and exhibiting guest artists, an approach discussed in her article included in this special issue.

To find methods for identifying and assessing data that undergirds longstanding assumptions about a particular corpus of West African arts identified as Senufo, the other guest co-editor of this special issue, Susan Elizabeth Gagliardi, also turned to digital mapping. Gardner-Huggett’s and Gagliardi’s separate mapping projects led the two art historians to participate as fellows in the 2014 Kress Summer Institute on Digital Mapping and Art History at Middlebury College. Led by art historian Paul Jaskot and geographer Anne Kelly Knowles, the summer institute focused on art-historical research and HGIS. Jaskot and Knowles led seminars in theories and methods of digital mapping. GIS Specialist William Hegman and his teaching team, comprised of Katrina Schweikert and Levi Westerveld, taught fellows how to translate data sets into actual maps. Since returning to their home institutions, Gardner-Huggett, Gagliardi, and other fellows have continued to work with faculty and other experts who specialize in digital humanities and GIS in order to advance their research.²³ We have also found that our separate mapping projects have required us to investigate our data and attend to our methods while exploring theories

related to our analyses. This attention to data, methods, and theories has led us to more effective framing of research questions and more rigorous approaches to those questions. In addition, immersive engagement at the intersection of geography and art history prompted us to gather essays for this special issue that emphasize process rather than rhetoric in the presentation of research.

The extended case study in this introduction as well as the articles that follow use maps and mapping to address art-historical questions grounded in different times and places. While Gardner-Huggett's investigation relies on fairly consistent and precise data, Gagliardi's case study in this introduction and Edward Triplett's analysis grapple with inconsistent and at times ambiguous data. Taken together, Triplett's, Gardner-Huggett's, and Gagliardi's studies indicate the potential for digital mapping to yield penetrating questions and insights as well as generate more nuanced assessments of art making, reception, or circulation. Because maps rely on data and mapmakers' decisions about them, digital mapping projects compel us to look at old data in novel ways, reevaluate entrenched claims, and reconfigure understanding in still other ways. In the concluding essay of this special issue, Paul Jaskot reflects more broadly on how art history and geography intersect. He characterizes the intersection as multidisciplinary rather than interdisciplinary. This distinction suggests that art historians who turn to geographical methods for spatial analysis do not aim to cannibalize geography. Rather, they seek alternate approaches to investigate longstanding art-historical concerns. According to Jaskot, development of additional methods to pursue art-historical questions nourishes more nuanced critiques and finer-grained understandings. Taken together, the authors of this special issue demonstrate that separation of theory from method in digital mapping promises to usher in profound changes to art-historical conventions and assumptions, thus clearing the way for the production of new, generative theories.²⁴

Case study: *Mapping Senúfo*

Theories shape methods as well as information gleaned through the research process and analysis of that data, but these same methods and information also shape theories. Switching focus to methods and information at times creates conditions for new theories to emerge. *Mapping Senúfo* is one digital mapping project that illustrates how the process of evaluating data for a map generates productive insights even while the project is ongoing. *Mapping Senúfo* takes as its starting point a corpus of arts from Africa that entered American and European collections in the nineteenth and twentieth centuries and that connoisseurs typically label as Senúfo.

When objects from Africa entered American and European collections in the nineteenth and twentieth centuries, they often arrived without specific time- or place-based information about the works. The term *Senúfo* and other cultural or ethnic labels offered twentieth-century admirers of African arts ready categories for the works consistent with views of the continent at the time. The designations suggest that art style coincides with language, religion, and social organization and that each group corresponds with a specific geographic area. Today, museum curators and other scholars continue to attribute individual works to entire groups of people when they have little information about specific artists, patrons, or audiences. The implication is that the attributions offer insight into the production, meaning, and circulation of the works. Yet scholars have recognized for decades that art style, language, religion, social organization, and geography do not overlap so neatly.²⁵ Still, the classifications and assumptions undergirding them endure. Thus, for academic study and museum labeling of so-called historical or classical arts of Africa, theory has outpaced changes in practice.

Mapping Senufo returns to data undergirding the Senufo label in order to mine the gap between theory and practice. When specific time- and place-based data for historical or classical arts of Africa do exist, the information may appear to authenticate objects if the data are not subject to further scrutiny. But not all time- and place-based data offer the same information about the objects to which they are attached. Some observers have also been reluctant to share this information. For example, art historian Anita Glaze praises the French Catholic missionary Gabriel Clamens for his mid-twentieth-century photograph of now iconic sculptures standing in a grove in Lataha, Côte d'Ivoire (Figure 5). Reflecting on the image and on Clamens's decision to publish it in 1953 without disclosing the name of the photograph's exact location, Glaze characterizes Clamens's documentation as "perhaps the most able and conscientious of early sources."²⁶ Clamens's colleague Michel Convers more recently linked the photograph to Lataha.²⁷ Yet what do we learn if we can link the image to Lataha? The place-based information does not illuminate reasons for the making of the photograph or the creation, use, or circulation of the sculptures in the image. Even if Clamens photographed the sculptures in Lataha, the sculptures' presence in Lataha when he took the photograph does not confirm that the objects were made in the town. Efforts to understand this place-based information linked to a photograph of a group of sculptures has led Gagliardi to the missionaries' unpublished documents and other sources. The records hint at a messier story.



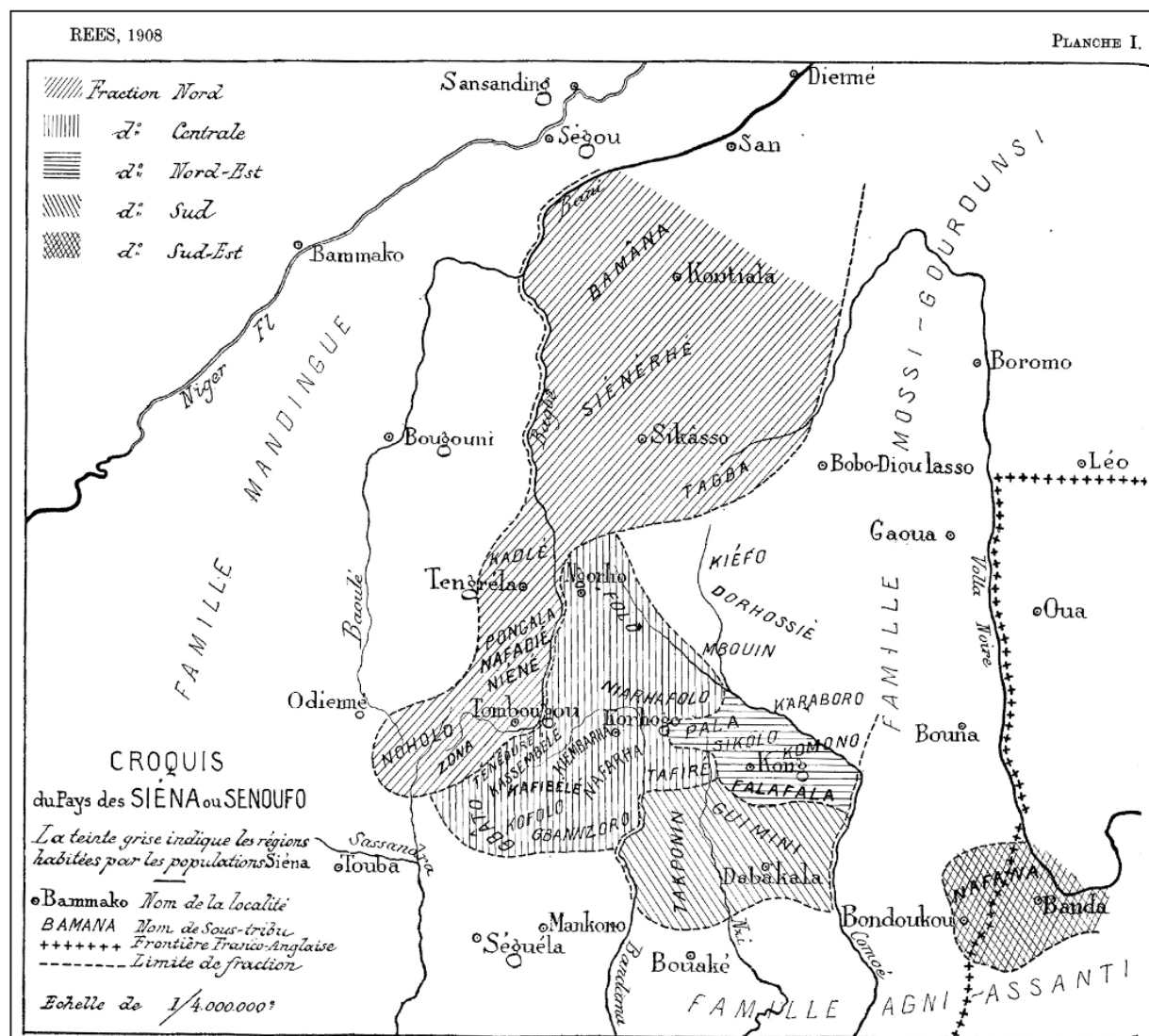
Figure 5. Michel Convers standing with sculptures in Lataha, Côte d'Ivoire, c. 1950. The negative for this photograph accompanies negatives for the photograph that Clamens published in 1953 and that Glaze subsequently praised. Photo credit: Gabriel Clamens, courtesy of Fonds Convers, Archives des Missions Africaines de Strasbourg and Archives of A. R. Arthur, Belgium

Gagliardi's quest to understand specific time- and place-based information attached to objects identified as Senufo also prompted her to initiate *Mapping Senufo*, an in-progress, collaborative digital mapping project. This turn to digital mapping propels her to scrutinize data in ways she had not anticipated when she began the project. Gagliardi currently codirects the project with Constantine Petridis of the Art Institute of Chicago, and the project team includes geographers, data specialists, and research assistants. The *Mapping Senufo* team aims to (1) visualize time- and place-based information about specific arts and about knowledge of the arts; (2) reveal new possibilities for analyzing histories of art and the production of knowledge; and (3) generate fresh questions for study of arts that move beyond cultural or ethnic group classifications.

The *Mapping Senufo* team uses *Senufo* to name a style of art, one recognized as among the most important styles of the historical arts of Africa. But the term at times also names a cultural or ethnic group defined by its own language, religion, social organization, and geographic location. The notion that *Senufo* designates a discrete cultural or ethnic group emerged with French colonization of West Africa in the late nineteenth century, decades before art enthusiasts applied the term to objects entering European and American collections. One of the first appearances of the term *Senufo* in print is in a French medical doctor's short report of 1887. Nearly twenty years later, French colonial administrator Maurice Delafosse published the first extensive description of a cultural or ethnic group identified as Senufo. His publication also includes a map (Figure 6).²⁸ Delafosse was asserting a distinct Senufo identity and locatable Senufo area in a region spanning present-day borders of Burkina Faso, Côte d'Ivoire, and Mali, three countries under French colonial rule from the end of the nineteenth century to the mid-twentieth century. Yet in the same text he recognized he applied the term *Senufo* to people who did not necessarily use the label to identify themselves.²⁹ His observation points to colonial construction of *Senufo* as a discrete cultural or ethnic marker tied to a specific area.³⁰ In addition, *Senufo* names a family of languages. A small cluster of languages recognized as Senufo is also located in Ghana.

Comparing a georeferenced version of Delafosse's 1908 map with more recent maps illustrating the distribution of languages identified as Senufo shows great correspondence between Delafosse's early colonial vision of the area and present-day delineations. However, scholars, including linguists, are increasingly recognizing the colonial construction of language groups.³¹ So might the correspondence demonstrate Delafosse's incisive knowledge or reflect the indelibility of colonial assumptions? Today people in areas that many maps recognize as Senufo speak dozens of unrelated languages, and they are not simply rooted in just one place. Even people within a single town may recognize different, and unrelated, languages as their first languages. Mapping town-to-town linguistic data would result in a map that pixelates, breaking apart the solid shape that often designates a Senufo area.³² The making of such a map requires consistent and detailed linguistic data for individual towns in Burkina Faso, Côte d'Ivoire, Ghana, and Mali. The *Mapping Senufo* team has sought but not yet accessed the necessary data, so the map exists in concept only.

Other time- and place-based data for arts identified as Senufo do exist. In fact, compared with groups of objects identified with other styles of so-called historical or classical arts of Africa, the Senufo corpus includes objects linked to several extensive collections of documents created by different African art enthusiasts working in different places and at different moments in time. By focusing on this historical data, the *Mapping Senufo* team aims to recover and assess specific time- and place-based information about individual objects. It will replace the tenacious notion that people within a single cultural or ethnic group use formally similar objects in the same way anywhere and at any moment in time with finer-grained understanding of how different observers documented time- and place-based information about individual objects.



Initial efforts to map specific time- and place-based data linked to objects identified as Senufo have led to productive reevaluation of historical sources. Place-based data for individual objects may designate a location associated with an artist, a location where an object was reportedly acquired, or a location where an object was reportedly documented. Because the subject positions and aims of people involved in the making of different historical documents vary and at times intersect with commercial interests, this time- and place-based information requires additional evaluation to determine ambiguity, uncertainty, and inconsistency. Thus, rather than advance understanding through spatial analysis of consistent data, *Mapping Senufo* will eventually yield an open-access digital publication that models interpretive possibilities for uneven data from disparate collections of historical documents.

Mapping Senufo also updates and expands upon modernist art historian Robert Goldwater's 1964 effort to understand the geographic distribution of arts identified as Senufo as well as the varied data informing his assessment. In *Senufo Sculpture from West Africa*, the book published

in conjunction with the eponymous 1963 exhibition, Goldwater acknowledged his reliance on a range of sources to assess the spatial distribution of form. A legend he reproduced in the book shows he used the letters *F*, *A*, and *S* to designate “direct information from field collectors,” “indirect information and attributions by other collectors,” and “attributions on stylistic grounds by the Museum of Primitive Art,” respectively. Goldwater distinguishes “field collectors” from other connoisseurs, thus assuming a consistency in the reliability of information gathered by people familiar with the region identified as Senufo.

Recognizing that inconsistent management of information, going back decades, impacts our analyses, the *Mapping Senufo* team seeks to distinguish among different kinds of observers and their records. For example, the Belgian art historian Albert Maesen examined arts identified as Senufo in northern Côte d’Ivoire in 1939, when he was gathering information to write his doctoral dissertation. During his yearlong stay in the area, Maesen acquired a facemask. Records indicate that Maesen recognized Nadono Soro as the name of the artist who made the mask. Maesen also located the mask to the Kokwo neighborhood of Korhogo, Côte d’Ivoire.³³ He collected other objects and at some point in time noted locations associated with them. The *Mapping Senufo* team will investigate the extant records from Maesen’s research travels to assess how Maesen obtained and recorded specific information. In addition, the team will compare Maesen’s records with the documentation of other visitors to the region, including Danish collector Carl Kjersmeier, who in the early 1930s, traveled to West Africa to collect objects.

Once the *Mapping Senufo* team recovers data from extant archives, it will assess that data. This process takes time and requires ongoing analysis. For example, the name of a single place might correspond with several different geographic locations. In 1935, four years after Kjersmeier initiated his collecting trip in West Africa, he published place-based information for some of the works he had gathered. For one sculpture labeled as Senufo, Kjersmeier listed Niena as its provenance.³⁴ Searches in the National Geospatial-Intelligence Agency GeoNames Search database identify at least four different geographic locations in present-day Mali that correspond to the place name Niena.³⁵ In order to pinpoint Kjersmeier’s Niena, the *Mapping Senufo* team needs to find and evaluate Kjersmeier’s documentation, including his notes and itinerary, as well as compare his data with locations on historical and present-day maps. The team must also determine if by “provenance” Kjersmeier means the location where he acquired an object or the location he recorded based on what someone else told him.

Other collections of historical documents the *Mapping Senufo* team will evaluate include documents of the missionaries Clamens and Convers. Their photographs now at Paris’s Musée du quai Branly—Jacques Chirac and notes buried in other archives hint at fascinating stories about objects the two men encountered and their experiences in northern Côte d’Ivoire in the 1950s. Careful review of these documents will yield fresh insights into how Clamens, Convers, and some of their contemporaries shaped current conceptions of arts labeled as Senufo. The men may have also helped with transfer of objects from West Africa to major European and American collections. Previously unpublished sources reveal that specific information the men recorded camouflages shady dealings, challenging Glaze’s praise for at least one of them.

The *Mapping Senufo* team’s attention to historical documentation also demonstrates that historical data do not clearly support form-based classifications that prevail today. During a 1907–9 mission to West Africa, German ethnographer Leo Frobenius and his research team documented several objects that connoisseurs today recognize as characteristic of the Senufo style on the basis of form. Annotations on early twentieth-century drawings indicate that someone previously linked the objects to other cultural or ethnic labels. A drawing of a staff includes writing in ink adjacent to the illustration that associates the staff with the Jula label and area

of Fourou in present-day Mali. *Senufo* written in pencil at the paper's edge suggests the Senufo label.³⁶ The identifications raise questions about who provided each bit of information, when, and on what basis. The *Mapping Senufo* team will investigate these aspects of time- and place-based data. Ultimately, identifying objects as Jula or Senufo may miss the point. Gagliardi's own field research supports this assessment.³⁷ In West Africa as elsewhere, people have long invested in certain arts through the exchange of knowledge via diverse networks of specialists not bound to a single cultural or ethnic identity.

Through its evaluation of data collected by disparate sources and in different times and in different places, *Mapping Senufo* joins spatial analysis and archival investigation, and it will provide other Africanist art historians with innovative methods for study of historical arts of Africa. The project's analyses will unpack assumptions as well as expand understanding of specific works identified as Senufo. Its more focused analyses will offer scholars of African arts new methods and refined data that will in turn generate original theories. The ephemerality of *Mapping Senufo*'s digital format also reflects the contingent nature of data and analyses of that information. While the project is still in development, mapping objects and knowledge about them has already required reassessments of information that have in turn encouraged refined understandings and sparked fresh lines of inquiry.



Figure 7. Gerhard Marx, *Vertical Aerial: Johannesburg (Square)*, 2013. Stone ceramic and Venetian glass; direct method mosaic and steel, 59 1/0" x 59 1/20". (Photo credit: Anthea Pokroy)

Geography + art history

Another look at the work of an artist provides additional insight into maps and the data behind them.³⁸ Working in collaboration with Spier Architectural Arts, Gerhard Marx transformed aerial images of Cape Town and Johannesburg into mosaic panels in his *Vertical Aerial* series (Figure 7). Rather than look down on prints that they can hold in their hands or look at digital maps on their screens, viewers of the mosaic panels confront aerial views that tower over them.³⁹ The mosaics recall the grid plans common to many cities. Marx's use of hard tesserae reminds viewers of cities' materiality, an aspect of urban spaces that becomes lost in the digital realm. In addition, Marx invites viewers to consider the underside of digital maps through mosaic fragmentation that recalls the pixelation of digital images.

In its description of "Lessons in Looking Down," a 2013 exhibition of Marx's *Vertical Aerial* series and other creations by the same artist at the Goodman Gallery in Johannesburg, South Africa, the gallery explains that his "works are labour intensive reconstructions that rely on fragments to construct intimate immensities, works that meticulously scratch at the surface to reveal an ecstatic vastness beneath."⁴⁰ Marx's exploration of the underside of maps and the materiality of the places they represent highlights the importance of thinking about how maps are made, how viewers understand maps that other people make, and how maps relate to place. And this attention to the underside of maps is important for art historians and other humanists. Because maps depend on the data and theories that inform them, humanists who turn to mapmaking in their research must examine information and assumptions undergirding the maps they make as well as how viewers understand the arguments and places presented in those maps.⁴¹

The articles presented here offer models for art historians and other humanists who, now or in the future, turn to mapmaking in their research. Edward Triplett's assessment of Iberia's transition from an Islamic Caliphate into a handful of medieval Christian Kingdoms often called the Reconquista offers new maps that identify and assess spheres of influence in frontier landscapes. He also examines how rival spheres overlapped. Triplett explains that maps made since the nineteenth century depict the Reconquista as a steady stream of invasion rather than a series of fluctuating events. By investigating each event, Triplett offers a more complex accounting of Reconquista history. Triplett also counters canonical architectural histories of Iberia that claim hilltop fortresses were constructed either as frontier necessities or means of asserting power. Triplett makes transparent that the narrative or output for any individual map is redefined when the structure of a database or input changes. In addition, he uses other visualization methods, including viewshed and cost-distance analysis, to expose pressure-points in the territorial expansion of military orders and their Christian patrons. By employing three distinct methods for spatial analysis, Triplett offers new insights into medieval Iberia.

Gardner-Huggett's article explores the benefits of using digital mapmaking to assess the impact of ARC and Artemisia galleries beyond their immediate membership. Drawing on documentation of guest solo artist exhibitions held at these Chicago-based women artists' cooperatives from 1980-1985, Gardner-Huggett explains how the process of building a database led her to two important conclusions. First, she recognized that funding for both spaces was distinct. Second, she realized that the dataset exposed a weakness in a previous argument. In earlier essays, Gardner-Huggett argues that ARC and Artemisia participated in a national feminist art network. But transferring her data to a database led her to see that both galleries were part of a Midwestern narrative.⁴² Gardner-Huggett turned to GIS analysis in order to elaborate on these discoveries. The process has prompted new questions that Gardner-Huggett will explore in future research. Gardner-Huggett's article illustrates how mapmaking does not just answer a researcher's original question but also frequently opens up new areas of research.

Each of the projects described in this collection will change over time, and in some instances, future outcomes may even contradict findings presented in this special issue. Tracing each project's trajectory rather than focusing on conclusions requires scholars to investigate their processes, assess their data, identify their assumptions, examine the arguments in their maps, or suggest alternate possibilities for humanistic inquiry. And this shift in focus to using mapmaking as a method may lead art historians and other humanists to understand their sources and information contained within them in revelatory ways.

It is also important to acknowledge that each of the authors in this special issue depends on collaboration with a range of specialists, including geographers, computer scientists, and data specialists. Working with a team of experts differs from conventional modes of performing art history, a process that commonly involves consulting archives, studying a specific body of artwork, and evaluating relevant academic literature before drafting texts in isolation. Given that mapmaking as method requires modes of working not yet commonplace to art historians, the technical demands and institutional support needed to pursue collaborative mapmaking projects may have contributed to a smaller number of essays in this issue. Several art historians who replied with initial interest to the special issue, like other humanists who have participated in digital mapping workshops, have reported insufficient budgets to sustain collaborative research or invest in expensive software. Another deterrent for art historians working on spatial analysis grounded in digital methods is that many universities do not recognize digital scholarship in tenure and promotion cases despite the guidelines co-authored by CAA and the Society for Architectural Historians (SAH) for evaluation of this type of research.⁴³ CAA and SAH specifically recognize the iterative nature of spatial analysis and other digital methods, and the organizations advocate for "Process as Scholarship." Still, art history departments may not yet accept the development or refinement of a method as a contribution to academic knowledge. As a result, scholars who evaluate an art historian's mapping research may view it as an add-on to conventional peer-reviewed books and articles rather than as a distinct contribution.⁴⁴

The research presented in this special issue demonstrates that art historians' and other humanists' attention to ambiguous data and digital mapping fuels understanding of art and history. It also leads to inventive approaches to geospatial analysis.⁴⁵ Whereas humanists regularly contend with anomaly and individuality in human experience, GIS specialists favor uniformity and consistency. The uncertainty that humanists have long investigated remains difficult to present in visual representations of geographic space. But humanists who explore uncertainty in the maps they make may uncover new methods for mapmaking. Joining geospatial analysis and humanistic inquiry stands to encourage advancements in both domains.

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NOTES

1. See Paul Jaskot, Anne Kelly Knowles, Andrew Wasserman, Stephen Whiteman, and Benjamin Zweig, "A Research-Based Model for Digital Mapping and Art History: Notes from the Field," *Artl@s Bulletin* 4, 1 (2015), Article 5, accessed on 18 March 2017 at: <http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1055&context=artlas>.

See Susan Elizabeth Gagliardi, "MAP IT | Little Dots, Big Ideas: Transforming the Humanities with Geo-Spatial Analysis," *Southern Spaces*, 28 June 2016, accessed on 18 March 2017 at: <https://southernspaces.org/2016/map-it-little-dots-big-ideas>. See also George Philip LeBourdais, "Tracing the Arctic Regions: Mapping 19th Century Photographs of Greenland," *Southern Spaces*, 19 July 2016, accessed on 18 March 2017 at: <https://southernspaces.org/2016/tracing-arctic-regions-mapping-19th-century-photographs-greenland>; Nicholas Bauch, "Enchanting the Desert: Visualizing the Production of Space at the Grand Canyon," *Southern Spaces*, 12 October 2016, accessed on 18 March 2017 at: <https://southernspaces.org/2016/enchanting-desert-visualizing-production-space-grand-canyon>; Niall Atkinson, "Seeing Sound: Mapping Florentine Soundscapes," *Southern Spaces*, 11 November 2016, accessed on 18 March 2017 at: <https://southernspaces.org/2016/seeing-sound-mapping-florentine-soundscapes>; and S. Wright Kennedy, "The Potential of Historical GIS and Spatial Analysis in the Humanities," *Southern Spaces*, 2 March 2017, accessed on 18 March 2017 at: <https://southernspaces.org/2017/potential-historical-gis-and-spatial-analysis-humanities>.

Recent digital mapping activities among art historians within and beyond the United States are too numerous to cite in their entirety. But even a few examples hint at the scope of this activity. In February 2016, Duke University's Wired! Lab brought together scholars from the United States and abroad for a one-day event, Digital Art History Symposium: Apps, Maps & Models. See John Taormina, "Apps, Maps & Models: A Symposium on Digital Pedagogy and Research in Art History, Archaeology, and Visual Studies" post, 18 November 2015, accessed on 18 March 2017 at: <https://sites.duke.edu/digsymposium/2015/11/18/apps-maps-models-digital-pedagogy-and-research-in-art-history-archaeology-visual-studies/>.

In October 2016, the University of Maryland's Department of Art History and Archaeology hosted Art History in Digital Dimensions, a three-day symposium supported by the Getty Foundation and Samuel H. Kress Foundation to identify and discuss current challenges in and future possibilities for joining art-historical scholarship and digital methods. See Stephen Bury with Ralph Baylor, Samantha Deutch, Sumitra Duncan, Julie Ludwig, Ellen Prokop, and Louisa Wood Ruby, "Art History in Digital Dimensions: The White Paper," February 2017, accessed on 18 March 2017 at: <http://dah-dimensions.org/white-paper/>.

In December 2016, the fourth International Meeting for Digital Art History Researchers brought together scholars from the United States and European countries in Málaga, Spain, for a similar discussion. See "HADDAAH | IV Encuentro Internacional de Historia del Arte y Cultura Artística Digital | Digital Art History and Artistic Culture. IV International Meeting" website, accessed on 18 March 2017 at: <http://historiadelartemalaga.uma.es/ehad/?lang=en>.

And in June 2017, the American Academy in Rome hosted The Art Historical Image in the Digital Age, a weeklong intensive course "designed to equip scholars of art from any historical period with the basic skill necessary to excel in the digital humanities: digital image management, organization, and analysis." See the American Academy in Rome,

Summer / Winter Programs, The Art Historical Image in the Digital Age, accessed on 12 November 2017 at: <http://www.aarome.org/apply/summer-programs/art-historical-image-digital-age>.

While art historians and other humanists are turning to computational methods, critics of those methods and digital humanities more broadly continue to articulate concerns. For example, see Daniel Allington, Sarah Brouillette, and David Golumbia, "Neoliberal Tools (and Archives): A Political History of Digital Humanities," *Los Angeles Review of Books*, 1 May 2016, accessed on 22 October 2017 at: <https://lareviewofbooks.org/article/neoliberal-tools-archives-political-history-digital-humanities/#>. In an interview published in the same journal, art historian Pamela Fletcher responds to the critique. See Melissa Dinsman, "The Digital in the Humanities: An Interview with Pamela Fletcher," *Los Angeles Review of Books*, 26 June 2016, accessed on 22 October 2017 at: <https://lareviewofbooks.org/article/digital-humanities-interview-pamela-fletcher/>.

2. For example, see Johanna Drucker, Anne Helmreich, Matthew Lincoln, and Francesca Rose, "Digital art history: La scène américaine," *Perspective (France)* 2 (2015): 27-42.
3. See also Mark Monmonier, *How to Lie with Maps*, second edition, (Chicago: University of Chicago Press, 1996). Monmonier explains, "Maps have three basic attributes: scale, projection, and symbolization. Each element is a source of distortion," 5.
4. See also Calvin Tomkins, "Big Art, Big Money: Julie Mehretu's 'Mural' for Goldman Sachs," *New Yorker*, 29 March 2010, accessed on 21 December 2016 at: <http://www.newyorker.com/magazine/2010/03/29/big-art-big-money>.
5. In a 13 October 2016 interview with Steven Nelson, Mehretu says, "I think [in my] earlier drawings, you ... didn't necessarily, couldn't read the maps or charts." Nelson replies, "No, but we tried [to read the maps or charts] ..., and that is the thing, we tried." According to Mehretu and Nelson, the works' power stems from the contradictions and juxtapositions in the work. See Julie Mehretu and Steven Nelson, "Roski Talk: Julie Mehretu and Steven Nelson," 13 October 2016, accessed on 10 June 2017 at: <https://www.youtube.com/watch?v=mHLkwpWw6So>.
6. Marcus Neustetter and Stephen Hobbs, interview with Gagliardi, 23 September 2016; see also Marcus Neustetter and Erin Haney, "Chasing Light: Marcus Neustetter interviewed by Erin Haney," in *African Cosmos: Stellar Arts* (Washington DC: Smithsonian Institution National Museum of African Art, 2012), 328-339.
7. Marcus Neustetter and Stephen Hobbs, interview with Gagliardi, 23 September 2016; see also Marcus Neustetter, "Analogue and Digital Anecdotes and Artworks from South Africa," *Third Text* 23, 2 (2009): 323-34; Nato Thompson (ed.), "Stephen Hobbs and Marcus Neustetter: Urbanet - Hillbrow / Dakar / Hillbrow, 2006," in *Living as Form: Socially Engaged Art from 1991-2011* (Cambridge MA: The MIT Press, 2012), 171.
8. For an overview of European and North American artists' engagement with maps and mapping in the late-twentieth and early-twenty-first centuries, see Lou Cabeen, "Maps, Mapping, and the Visual Arts," in *Mapping Across Academia*, eds. Stanley D. Bunn and Martin Dodge (Dordrecht: Springer, 2017), 349-73.
9. For example, see Mary Nooter Roberts and Allen F. Roberts, "Mapping Memory," in *Memory: Luba Art and the Making of History* (New York: Museum for African Art, 1996), 151-75; Mary E. Miller and Barbara E. Mundy, eds., *Painting a Map of Sixteenth-Century Mexico City: Land, Writing, and Native Rule* (New Haven: Yale University Press, 2012); Marcia Kupfer, "Reflections in the Ebstorf Map: cartography, theology, and 'dilectio speculationis'," in *Mapping Medieval Geographies: Geographical Encounters in the Latin West and Beyond*, 300-

- 1600 (New York: Cambridge University Press, 2013), 100-26; and Jennifer Raab, "Mapping History," *American Art* 29, 2 (2015): 19-26.
10. For example, see Arthur Getis, Mark Bjelland, and Victoria Getis, *Introduction to Geography*, fourteenth edition (New York: McGraw-Hill Education, 2014). The textbook's second chapter is entitled, "Techniques of Geographic Analysis. The seven sections within the chapter are: "2.1 Maps as the Tools of Geography," "2.2 Locating Points on a Sphere," "2.3 Map Projections," "2.4 Scale," "2.5 Types of Maps," "2.6 Contemporary Spatial Technologies," and "2.7 Integrating Technology: Geographic Information Systems." See also Basil Gomez and John Paul Jones III, eds., *Research Methods in Geography: A Critical Introduction* (Hoboken: Wiley-Blackwell, 2010) and Tim Cresswell, *Geographic Thought: A Critical Introduction* (Hoboken: Wiley-Blackwell, 2013). Compare Fred S. Kleiner, *Gardner's Art through the Ages: A Global History*, fifteenth edition (Boston: Cengage, 2016); Marilyn Stokstad and Michael Cothren, *Art History*, sixth edition (Upper Saddle River: Pearson, 2018).
 11. Geographers have also sought to clarify the nature of GIS and its utility for geographical inquiry. For example, see Dawn J. Wright, Michael F. Goodchild, and James D. Proctor, "Demystifying the Persistent Ambiguity of GIS as 'Tool' versus 'Science'," *Annals of the Association of American Geographers*, 87, 2 (1997): 346-362; John Pickles, "Tool or Science? GIS, Technoscience, and the Theoretical Turn," *Annals of the Association of American Geographers*, 87, 2 (1997): 363-372; Dawn J. Wright, Michael F. Goodchild, and James D. Proctor, "Reply: Still Hoping to Turn That Theoretical Corner," *Annals of the Association of American Geographers*, 87, 2 (1997): 373.
 12. For example, see the collection of essays in Anne Kelly Knowles, ed., *Placing History, How Maps, Spatial Data, and GIS Are Changing Historical Scholarship* (Redlands, CA: Esri Publications, 2008). In Knowles's introduction to the collection, she investigates differences between historical research and geographical research, observing that "history's classic mode of communication is narrative, while geography finds its most distinctive expression in the visual, synoptic presentation of evidence in maps." Knowles, "GIS and History," in *Placing History*, 3.
 13. Geoff Cunfer, "Scaling the Dust Bowl," in *Placing History*, 96-118.
 14. See Griselda Pollock, "Differencing: Feminism's Encounter with the Canon," in *Differencing the Canon, Feminist Desire and the Writing of Art's Histories* (London: Routledge, 1999), 22-38 for an overview of the range of feminist methodologies in art history. For iconography, see Erwin Panofsky, "Iconography and Iconology: An Introduction to the Study of Renaissance Art," in *The Art of Art History, A Critical Anthology*, ed. Donald Preziosi, second edition (Oxford: Oxford University Press, 2009), 220-235 and Hubert Damisch, "Semiotics and Iconography," in Preziosi, 236-255. For Marxist art history see, for example, O.K. Werckmeister, "Radical Art History," *Art Journal* 42, 4 (1982): 284-291.
 15. Ronald L. Grimes, *The Craft of Ritual Studies* (Oxford: Oxford University Press, 2014), 12.
 16. Grimes, 166.
 17. Grimes, 3.
 18. Preziosi, 576.
 19. María Ochoa, *Creative Collectives, Chicana Painters Working in Community* (Albuquerque: University of New Mexico Press, 2003), 4-12.
 20. Ochoa, 35-36.
 21. See Joanna Gardner-Huggett, "The Women Artists' Cooperative Space as a Site for Social Change: Artemisia Gallery, Chicago (1973-79)," *Social Justice* 34, 1 (2007): 28-43.
 22. Gardner-Huggett's article, "The Women Artists' Cooperative Space as a Site for Social

- Change,” was part of a special issue entitled “Art, Identity, and Social Justice” and edited by Emmanuel David and Ed McCaughan.
23. Gardner-Huggett now works with Nandhini Gulasingam, Senior GIS Specialist in the Social Science Research Center at DePaul University, Chicago.
 24. Ian Gregory, Discussant, “Cultural Forgetting and Recovery: Using Historical GIS to Restore the Material Past,” American Association of Geographers Conference, San Francisco, CA, 29 March 2016.
 25. For example, see Pieter Jan Vandenhoute, *Classification stylistique du masque Dan et Guéré de la Côte d’Ivoire Occidentale (A.O.F.)* (Leiden : E. J. Brill, 1948); Roy Sieber and Arnold Rubin, *Sculpture of Black Africa: the Paul and Ruth Tishman Collection* (Los Angeles: Los Angeles County Museum of Art, 1968); Sidney Littlefield Kasfir, “One Tribe, One Style? Paradigms in the Historiography of African Art,” *History in Africa* 11 (1984): 163-93; and Marla Berns, Richard Fardon, and Sidney Littlefield Kasfir, eds., *Central Nigeria Unmasked: Arts of the Benue River Valley* (Los Angeles: Fowler Museum at UCLA, 2011).
 26. Anita Glaze, “‘The Children of Poro’: A re-examination of the Rhythm-Pounder in Senufo Art, its Form and Meaning,” *Connaissance des Arts Tribaux*, 20 (1983), 5.
 27. See Michel Convers, “L’aventure de Massa en pays senufo. Entretien avec Bertrand Goy,” *Primitifs: Art Tribal, Art Moderne* 6 (1991): 24-34.
 28. Maurice Delafosse. “Le peuple siéna ou sénoufo,” *Revue des études ethnographiques et sociologiques* 1-2 (1908-9).
 29. Delafosse, 17.
 30. See also Susan Elizabeth Gagliardi, *Senufo Unbound: Dynamics of Art and Identity in West Africa* (Cleveland: The Cleveland Museum of Art; Milan: 5 Continents Editions, 2015).
 31. For example, see Johannes Fabian, *Language and Colonial Power: the Appropriation of Swahili in the Former Belgian Congo, 1880-1938* (Berkeley: University of California Press, 1986); Jan Blommaert, “Artefactual Ideologies and the Textual Production of African Languages,” *Language & Communication* 28 (2008): 291-307; and Judith Irvine, “Subjected Words: African Linguistics and the Colonial Encounter,” *Language & Communication* 28 (2008): 323-43.
 32. Gagliardi thanks geographer Anne Kelly Knowles for suggesting such a map that dissolves rather than reinforces boundaries of a Senufo area during the 2014 Kress Summer Institute on Digital Mapping and Art History at Middlebury College.
 33. Anja Veirman, “Cats. 113 – 129: Art of the Senufo,” in *Frans M. Olbrechts 1899-1958: In Search of Art in Africa*, Constantine Petridis, ed. (Antwerp: Antwerp Ethnographic Museum, 2001).
 34. Carl Kjersmeier, “Liste des Illustrations II,” in *Centres de style de la sculpture nègre africaine*, volume 1 (Paris, Copenhagen: A. Morancé ; Illums Bog-Afdeling, 1935), fig. no. 39.
 35. A search for “Niena” in the present-day country of Mali in the National Geospatial Intelligence Agency (NGA) GEOnet Names Server (GNS) yielded four populated places. They are: Niéna (13.6322 N, -4.9959 W), Niéna (11.425157 N, -6.348808 W), Niéna (11.457527 N, -5.32556 W), and Nièna (13.147232 N, -6.081274 W). See NGA GEOnet Names Server (GNS), updated on 30 May 2017, accessed on 1 June 2017, <http://geonames.nga.mil/namesgaz/>.
 36. Wooden staff identified as “Papara. Diulla [Jula] in area of Furru [probably Fourou, Mali].” Ink drawing on paper possibly by Reinhard Hugershoff; 12.7 x 16.8 cm. Frobenius-Institut an der Johann Wolfgang, Goethe-Universität Frankfurt/Main, KBA 10416.
 37. Susan Elizabeth Gagliardi, “Crossing Borders, Pushing Boundaries: Arts of Power Associations on the Senufo-Mande Cultural ‘Frontier’,” PhD dissertation, University of California, Los Angeles, 2010.

38. Responding to an earlier version of our introduction, geographer Nicholas Bauch asked, "Why do maps have to rely on datasets?" This provocative question challenges what we learned at the August 2014 Kress Summer Institute on Digital Mapping and Art History, namely that construction of a map begins with building a database. The question prompts reconsideration of what a map is, and it bares further consideration.
39. Gerhard Marx, interview with Gagliardi, 19 September 2016.
40. See Goodman Gallery, "Gerhard Marx / Lessons in Looking Down / 2013," accessed on 24 April 2017 at: <http://www.goodman-gallery.com/exhibitions/364>. See also Mark Gevisser, "Gerhard Marx: Lessons in Looking Down," Goodman Gallery Johannesburg, 14 November–21 December 2013.
41. For important geographic perspectives on cartographic technique see, for example, J.B. Harley, "Deconstructing the Map," *Cartographica* 26, 2 (1989): 1-20, Denis Wood and John Fels, *The Power of Maps* (NY: Guilford Press, 1992), and Denis Wood and John Fels, *The Nature of Maps, Cartographic Constructions of the Natural World* (Chicago: University of Chicago, 2008).
42. See, for example, Gardner-Huggett, "The Women Artists' Cooperative Space as a Site for Social Change."
43. See "Guidelines for the Evaluation of Digital Scholarship in Art and Architectural History," College Art Association and the Society for Architectural Historians, Task Force to Develop Guidelines for Evaluating Digital Art and Architectural History for Promotion and Tenure, January 2016, funded by the Andrew W. Mellon Foundation, accessed on 10 June 2017 at: <http://www.collegeart.org/pdf/evaluating-digital-scholarship-in-art-and-architectural-history.pdf>.
44. "Guidelines," 5.
45. Anne Kelly Knowles, "Why We Must Make Maps: Historical Geography as a Visual Craft" (2014), *Historical Geography* 42 (2014): 3–26.