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Introduction: Art and Trade in the Age of Global Encounters, 1492–1800

The focus of this special issue is on the new materials that became available as a result of early modern global trade—pigments in particular. Pigments may seem an inconsequential topic of study, but recent research is revealing how new-found artists' materials changed the look of art in the early modern world, and how knowledge about the acquisition of, and trade in, such materials has altered our view of history. Whereas previously, art historians had focused on such issues as connoisseurship and artists' biographies, attention to materials has expanded the purview to include the histories of science, technology, and economics. We now have deeper understandings of how materiality affects artists' and patrons' choices. Before 1856, natural colorants were the only sources of colors for dyeing and painting; humans were always searching for them. Natural dyes from plants, minerals, and insects created pigments for painting, colorants for cosmetics, and dyes for textiles.[1]

TRADE NETWORKS AND THE NEW WORLD

In a royal decree dated 1564, King Philip II of Spain (1527–1598) ordered his viceroys "safely [to] bring to the realms gold, silver and cochineal" from the Americas, an order that heralded profound changes in the European economy and material world. These rich *Nove Orbe* discoveries arrived via Spain's far-reaching trade networks, which

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1 For pigments, dyes, and colorants, see *Artists' Pigments: A Handbook of Their History and Characteristics* (London, 2007–2012), 4 v.; Andrea Feeser, Maureen Daly Goggin, and Beth Fowkes Tobin (eds.), *The Materiality of Color: The Production, Circulation, and Application of Dyes and Pigments, 1400–1800* (Burlington, 2012).

by the 1550s had moved beyond mainland Europe and extended to parts of North, Central, and South America; Asia; North and Sub-Saharan Africa; and Oceania. From both maritime and peninsular trade routes, whether originating in Patagonia, Yucatan, or South Carolina, goods arrived at the global port in Seville, headquarters of the *Casa de Contratación*, or House of Trade. Thanks to dynastic alliances and a highly sophisticated system of transport within Europe, these materials could be dispatched efficiently and expediently to all parts of Europe.[2]

As Friar Francisco de Ugalde commented to Holy Roman Emperor and King of Spain Charles V (1500–1558), Spanish dominions constituted "*el imperio en el que nunca se pone el sol*" (the empire where the sun never set). In 1761, the ruling Bourbons added to the Spanish royal crest the phrase "*A solis ortu usque ad occasum*," that is, from the rising to the setting of the sun, indicating the extent of their dominions. In 1808, French Emperor Napoleon Bonaparte (1769–1821), just prior to his invasion of Spain, reflected that "the sun never sets in the immense inheritance of Charles V.... I shall have the empire of both worlds." By the latter half of the sixteenth century, Spain's lands had become so extensive that it was always daylight somewhere in Spanish territories, thus making the empire the perfect setting for round the clock trade.[3]

2 Legajo 1, 899, folios 337–338 *verso* (Real Cédula a la audiencia de la isla Española, a pedimento de la Universidad de mercaderes de Sevilla: 1564-4-4 Tortosa), Archivo General de las Indias, Santo Domingo. In 1550, the specific territories in this trade network included Naples, Milan, Upper Navarre, part of Germany, the Low Countries, and Franch-Comté; the Canary Islands, Melilla, plus the towns of Mazalquivir, Peñón de Vélez de la Gomera, Oran, Algiers, Bugia, and Tripoli, as well as Ceuta after 1580, when Philip II took on the title of the King of Portugal; most of the Americas, except for Brazil and parts of North America; and holdings in the Philippines and South Pacific islands. For more information, see Henry Kamen, *Empire: How Spain Became a World Power 1492–1763* (New York, 2003).

Established by Queen Isabella in 1503, the House of Trade was a mandatory stop for all who entered or left Spain by seagoing vessel, for royal approval and for taxes on cargo; it was also the repository for Spain's secret maps. Carla Rahn Phillips, "Visualizing *Imperium*: The Virgin of the Seafarers and Spain's Self-Image in the Sixteenth Century," *Renaissance Quarterly*, LVIII (2005), 815–856. The Straits of Magellan, which connect the Atlantic and Pacific Oceans, were discovered for Europe by Fernando Magellan in 1520; Campeche, the major seaport in the Yucatan Peninsula, was established in 1540 by Francisco Montejo; and Port Royal was taken from French control in 1566 by Spaniard Pedro Menéndez de Avilés, who founded the settlement of Santa Elena. For more information about the union of dynastic alliances, see Dagmar Eichberger and Lisa Beaven, "Family Members and Political Allies: The Portrait Collection of Margaret of Austria," *Art Bulletin*, 77:2 (1995), 225–248.

3 Ugalde's quotation is widely reproduced. See, for example, Hugh Thomas, *The Golden Empire: Spain, Charles V, and the Creation of America* (New York, 2011); Jean-Benoît Nadeau

Commerce transacted on Spain's interlinked global trade networks permanently altered the world's economy, as well as its art. The ships that sailed into the port of Seville loaded with new pigments and other prized materials—such as cochineal, shells, or exotic new woods—gave artists and patrons new material choices. Each territorial expansion brought with it a discovery of yet another *materia prima*: The conquest of Nueva Granada (Colombia) provided emeralds (1499); Venezuela yielded pearls (1522); and the Gulf of California in Nueva España brought tortoiseshell (1533). The Americas offered fresh sources for such materials as brazilwood and indigo, highly valued in Europe but jealously held in monopoly by Venetian traders who obtained them from Asia. The sudden availability of these previously sequestered resources combined with the discovery of new items precipitated significant artistic innovation.[4]

By the sixteenth century, the possession of such materials, often acquired in faraway places, symbolized imperial power and territorial control of the globe. Throughout the sixteenth and seventeenth centuries, Spain, England, and France would fight over the monopoly of dyes like cochineal and logwood. Spain successfully maintained its control of these resources, despite smuggling, piracy, and even war. But within 125 years of the Spanish Empire establishing its dominance, France and Britain began to erode the complete control of trade in both cochineal and logwood.

Studying pigments and dyes fosters additional perspectives on shifts in imperial power and their effects on European politics as

and Julia Barlow, *The Story of Spanish* (New York, 2013), 172. Napoleon's comment was made to his Minister of Police, Joseph Fouché (1759–1821). See Joseph Fouché and Alphonse de Beauchamp, *The Memoirs of Joseph Fouché: Duke of Otranto, Minister of the General Police of France* (Boston, 1825), 314.

4 For tortoiseshell, see Andrea Sáenz-Arroyo et al., "The Value of Evidence about Past Abundance: Marine Fauna of the Gulf of California through the Eyes of 16th to 19th Century Travellers," *Fish and Fisheries*, 7:2 (2006), 128–146; for pearls, Aldemaro Romero, Susanna Chilbert, and M. G. Eisenhart, "Cubagua's Pearl-Oyster Beds: The First Depletion of a Natural Resource Caused by Europeans in the American Continent," *Journal of Political Ecology: Case Studies in History and Society*, VI (1999), 57–78; Romero, "Death and Taxes: The Case of the Depletion of Pearl Oyster Beds in Sixteenth-Century Venezuela," *Conservation Biology*, XVII (2003), 1013–1023; for emeralds, Kris E. Lane, *The Colour of Paradise: The Emerald in the Age of the Gunpowder Empires* (New Haven, 2010). A major exhibition on cochineal is slated for 2015 at the Museum of International Folk Art in Santa Fe, New Mexico, entitled *The Red that Colored the World*. Paola Lanaro (ed.), *At the Centre of the Old World: Trade and Manufacturing in Venice and the Venetian Mainland, 1400–1800* (Toronto, 2006); Jenny Balfour-Paul, *Indigo in the Arab World* (New York, Routledge, 1997), 32; Louisa C. Matthew, "'Vendecolori a Venezia': The Reconstruction of a Profession," *Burlington Magazine*, CXLIV (2002), 682.

well as art. The contributors to this special issue document, analyze, and theorize about the discovery of new dyestuffs and other materials in the Hispanic empire and the new meaning that they brought to artistic creation in their various early modern contexts.[5]

AN "INDEX CASE" EXHIBITION The exhibition *Seeds of Change* at the Smithsonian's Natural History Museum in Washington D.C. in 1992—one of the events marking the quincentennial of Christopher Columbus' arrival in the New World—explored the biological exchanges between Europe and the Americas—the "Columbian Exchange." Just as tomatoes, potatoes, and corn from the Americas transformed European cultures, the introduction of wheat, sugarcane, and domestic farm animals revolutionized the "New World." *Seeds of Change* helped to inspire new research in ethnobotany and other areas to quantify the scientific, commercial, and artistic interactions of the colonial period. The thriving interest in dyes and pigments, as evidenced by the work in this special issue on cochineal and other colorants, or research on dyes extracted from indigo or brazilwood, harkens back to this moment.[6]

This "index case" exhibition's view of the interaction between Europeans and indigenous Americans as an exchange rather than an act of redemption of barbarians in need of European "civilization" reflects the theoretical and philosophical perspectives of postmodernism and postcolonialism that began to emerge during the 1960s in opposition to both positivism and Marxism. Though beyond the scope of this introduction, their legacies are deeply embedded in the historiographical and methodological innovations to which this special issue testifies. No longer was European art singled out as the sole artistic tradition worthy of serious consideration, and no longer was Europe regarded as the sole actor in the drama of conquest and colonization. Postcolonialism encouraged scholars to challenge the traditional division between Europe and

5 Gilbert M. Joseph, "British Loggers and Spanish Governors: The Logwood Trade and Its Settlements in the Yucatan Peninsula: Part I," *Caribbean Studies*, 14:2 (July 1974), 7–37; F. H. Titmuss, *Commercial Timbers of the World* (London, 1965), 60–65; Frederick Crace-Calvert, *Dyeing and Calico Printing* (London, 1876); Alvarez, work in progress about logwood.

6 *Seeds of Change* was inspired by Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, 1972); *idem*, *The Biological Expansion of Europe, 900–1900* (New York, 1986). For the exhibition's popularity, see the review by Robert D. Mitchell in *The William and Mary Quarterly*, XLIX (1992), 390–394.

the "New World," insisting that the colonies had a reciprocal effect on the metropole, especially in the artistic sphere.[7]

INTERDISCIPLINARY WORK This special issue's study of the techniques and materials that discoveries in the New World either created or facilitated flows from the continuing interdisciplinary, collaborative work among art historians, conservation scientists, and museum curators in the new field of "technical art history." As Considine, a conservator, notes, "The development over the last century of the scientific examination of works of art has completely altered the way that we evaluate objects. Employing an increasingly wide range of analytical tools, researchers from the fields of art history, conservation, and conservation science are demonstrating the value of working together in an interdisciplinary manner. Originally simply called 'technical studies,' these collaborative efforts now compose a burgeoning field of study called technical art history." Bomford, another conservator, also offers a useful definition: "Technical art history concerns itself with all the processes for making art, and the technical and documentary means by which we throw light on those processes."[8]

In actuality, such work dates back to the 1920s. Edward Forbes, at Harvard University's Fogg Art Museum, founded the first program

7 For the influence of the colonies, see Black, *Creating the Cult of St. Joseph: Art and Gender in the Spanish Empire* (Princeton, 2006), 13–19. For postcolonialism in the context of viceregal art, see Dana Leibsohn and Carolyn Dean, "Hybridity and Its Discontents: Considering Visual Culture in Colonial Spanish America," *Colonial Latin American Review*, XII (2003), 5–35; for the various debates about postcolonialism during the 1990s, Stuart Hall, "When Was the 'Post-Colonial'? Thinking at the Limit," in Iain Chambers and Lidia Curtis (eds.), *The Post-Colonial Question: Common Skies, Divided Horizons* (New York, 1996), 242–260; for a thoughtful critique of the term *postcolonialism* in the Latin American context, J. Jorge Klor de Alva, "The Postcolonization of the (Latin) American Experience: A Reconsideration of 'Colonialism,' 'Postcolonialism,' and 'Mestizaje,'" in Gyan Prakash (ed.), *After Colonialism: Imperial Histories and Postcolonial Displacements* (Princeton, 1995), 241–275. One of the most successful examples of a postcolonial art-historical intervention is Hamann, "Mirrors of *Las Meninas*."

8 Brian Considine, "Recent Initiatives in Technical Art History," *Getty Conservation Institute Newsletter*, 20.1 (Spring 2005), available at http://www.getty.edu/conservation/publications_resources/newsletters/20_1/feature.html; Maryan W. Ainsworth, "From Connoisseurship to Technical Art History: The Evolution of the Interdisciplinary Study of Art," *ibid.*, 1, available at http://www.getty.edu/conservation/publications_resources/newsletters/20_1/feature.html. David Bomford's definition is from his 2008 Forbes Prize Lecture, International Institute for Conservation of Historic and Artistic Works Annual Congress, London, 2008, available at http://stitah2012.sites.yale.edu/. See also Karen Trentelman, "Collections Research: A Combined Approach to the Study of Works of Art," *Getty Conservation Institute Newsletter*, 25.1 (Spring 2010), available at http://www.getty.edu/conservation/publications_resources/newsletters/20_1/feature.html.

in technical studies in 1928—the Department for Conservation and Technical Research, known since 1994 as the Straus Center for Conservation and Technical Studies. Interdisciplinary research began to develop more rapidly in the wake of such scientific advances as infrared reflectography in the 1970s and dendochronology in the 1980s. In 1972, the National Gallery in London began publishing the *National Gallery Technical Bulletin*, featuring interdisciplinary, collaborative work.

These new interdisciplinary collaborations, and in particular those of technical art history, fostered an interest in materiality, understood to mean the study of the materials of artworks, identified by scientific techniques. But invoking "materiality" prompts further questions. What can these materials tell us about how artworks were created or how they produced meaning? How can art historians and historians use this new technical knowledge to study the availability, selection, transport, and creation of these newly identified materials? What can we learn about the access to, and distribution of, both materials and the resulting artworks? Materials can reveal considerable information about the conditions that surrounded an object's creation—trade, economics, and technology. The potential benefits of collaboration between technical and traditional art history is fully evident in Cummins and Anderson (eds.), *The Getty Murua: Essays on the Making of Martin de Murua's "Historia General del Piru," J. Paul Getty Museum Ms. Ludwig XIII 16* (Los Angeles, 2008).

MATERIALITY Materiality is a major issue in art history. The March 2013 edition of *The Art Bulletin* included an entire section on the topic with short reflections written by artists, curators, and art historians. Weddigen sees the current interest in materiality, at least in the art world, as a reaction to digitalization. Holly describes it as "an antidote, a reaction to digitalization." Brown, known for his development of "thing theory" in the late 1990s and early 2000s, suggested that an interest in things was also a reaction against "theory." He warned, however, "Taking the side of things hardly puts a stop to that thing called theory."[9]

9 See the section "Notes from the Field: Materiality," *Art Bulletin*, 95:1 (March 2013), for the comments of Tristan Weddigen (34), Michael Ann Holly (15), and Michael Kelly (19). For a historiographical survey of materiality in anthropological and religious studies, see Daniel Miller, "Materiality: An Introduction," in *idem* (ed.), *Materiality* (Durham, 2005), 1–50. See also Hamann, "Mirrors of *Las Meninas*." Bill Brown, "Thing Theory," *Critical Inquiry*, XXVIII (2001), 3.

The tension that surrounds the materiality of art objects has a long history. Witness the Italian Renaissance *paragone*, or contest between painting and sculpture, a frequent topic in early modern art theory. In most texts, painting prevails because it is primarily intellectual, as opposed to sculpture, associated with artisanal craft and labor. This contest between intellectual and material qualities continued to haunt art history. In the nineteenth century, Gottfried Semper (1803–1879), an architect and architectural historian, advocated the theory that materials determine the form of artworks. As Kleinbauer summarized Semper's premise, "Art originates from the specific nature of the material, the nature of the tools and methods of production … changes in art are explained by the nature of material and technical innovation." Alois Riegl (1858–1905) opposed this materialist approach, positing instead the formalist notion of Kunstwollen ("aesthetic urge" or "will to form"), in which artistic development originated with the artist, not through such external factors as materials and their technical aspects. Once again, intellect was valorized over craft and materiality. The 1960s also witnessed the complete dematerialization of the art object.[10]

Notwithstanding the fact that definitions of *materiality* vary by era, this special issue rests on an agreement with Semper's idea that materials determine form, to which we arrived via work on the Spanish Empire and experiences in the museum world. According to Brown's "thing theory," "By means of a particular socialization of the psyche, then, each society imposes itself on the subject's

10 For Leonardo's famous treatment of the debate between painting and sculpture, see Leonardo da Vinci (ed. Martin Kemp), *Leonardo on Painting* (New Haven, 2002); Francis Ames-Louis, *The Intellectual Life of the Early Renaissance Artist* (New Haven, 2000); Rona Goffen, *Renaissance Rivals: Michelangelo, Leonardo, Raphael, Titian* (New Haven, 2002). For the quotation as well as a lucid explanation of Semper's theories, see W. Eugene Kleinbauer, *Modern Perspectives in Western Art History: An Anthology of Twentieth-Century Writings on the Visual Arts* (Toronto, 1989; orig. pub. 1971), which summarizes Semper's theories in *Der Stil in der technischen und tektonischen Künsten* (Munich, 1860–1862)—translated into English by Harry Mallgrave and Michael Robinson as *Style in the Technical and Tectonic Arts; or, Practical Aesthetics* (Los Angeles, 2004). For the opposition between Semper's and Riegl's philosophies, see Leopold D. Ettlinger, "On Science, Industry and Art: Some Theories of Gottfried Semper," *Architectural Review*, LXXXVI (1964), 21. Lucy Lippard and John Chandler, "The Dematerialization of Art," *Art International*, 12:2 (February 1968), 31–36; Lippard (ed.), *The Dematerialization of the Art Object from 1966 to 1972* (New York, 1973). See also the March 2013 *Art Bulletin* for comments by Martha Rosler (11–12) and Amelia Jones (17–18).

senses, on the corporeal imagination by which materiality as such is apprehended."[11]

THE CHAPTERS IN THIS SPECIAL ISSUE The chapters in this special issue move beyond traditional art-historical frameworks, and beyond visible surfaces, to investigate the very materiality of artistic creations. Thus can we learn not only about the works per se but also about technical processes, exchanges, economics, and the trade of the particular societies in which they were created, collected, manipulated, and re-introduced. In addition, the geographical scope of the chapters transcends the normal borders of "Latin America," embedding the Americas within early modern global networks. The Americas, in fact, were the center of these networks, serving as the link between established Asian and European trade routes.[12]

The first chapter, by Paula De Vos, compares craft traditions in the Old and New Worlds, documenting in very great detail the specific pigments used in the colonial Americas and Europe as well as their points of intersection. Barbara Anderson's study that follows explores the import and export of cochineal, the exotic new dye made from the bodies of the crushed insect, *dactylopius coccus,* that lived on cactus in the New World. The sudden availability of this high quality dye, a traditional pigment used in the Pre-Columbian Americas, revolutionized painting and textiles in Europe. The third chapter, by Rocío Bruquetas, is positioned at the intersection of art history, the history of science, and technical art history. It documents the search for new artistic materials, especially pigments, dyes, and glues in the Spanish expeditions to the Americas during the eighteenth century. Finally, Gabriela

11 Brown, "Thing Theory," 9. Holly—in *Art Bulletin*, 95:1 (March 2013), 16—remarked, "Materiality is more than a medium. A medium is that which carries a visual message, and together—structure and image—they result in the thickness, the sensuous materiality of a work of art, a thing among other things." Robin Kelsey—in *Art Bulletin*, 95:1 (March 2013), 22—questioned why certain kinds of materiality matter now. For the related issue of why humans value certain things over others, see Arjun Appadurai, *The Social Life of Things: Commodities in Cultural Perspective* (New York, 1986).

12 For the Americas as a center, see Sanjay Subrahmanyam, "Holding the World in Balance: The Connected Histories of the Iberian Overseas Empire, 1500–1640," *American Historical Review*, CXII (2007), 1359–1385; Etsuko Miyata Rodríguez, "The Early Manila Galleon Trade: Merchants' Networks and Markets in Sixteenth- and Seventeenth-Century Mexico," in Pierce and Otsuka (eds.), *Asia and Spanish America*, 39–57; Gauvin Alexander Bailey, "Asia in the Arts of Colonial Latin America," in Joseph J. Rishel and Suzanne Stratton-Pruitt (eds.), *The Arts in Latin America, 1492–1820* (New Haven, 2006), 57–69.

Siracusano's contribution demonstrates the rich possibilities of combining scientific and art-historical research. Siracusano does not merely identify the materials used for particular art works; she also considers how materials produced meaning. To that end, she identifies both imported European and Pre-Columbian pigments in a colonial Andean painting of the Virgin of Copacabana ultimately to demonstrate how materials can preserve indigenous notions of sacredness in Catholic religious imagery.

As a whole, this collection reveals our growing cognizance of the complexities embedded in the early modern world, which was global before the era of globalization. European paintings made with pigments derived from crushed cactus bugs from Oaxaca, Mexico, or Andean paintings in which pigments embodied material memories of Pre-Columbian sacred practices–such issues complicate questions of artistic source, influence, and hybridity. Can we explain or even convincingly identify the intricate network of sources that inspired the creation of these early modern and viceregal artworks? To describe them as "hybrid" seems insufficient; no art-historical language seems capable of adequately explaining their genesis."[13]

13 "Global before the era of globalization" is a paraphrase of the title of the thoughtful commentary published in *October* 133 (Summer 2010):3–10, "Roundtable: The Global before Globalization." For the limits of "hybridity" in the study of colonial art, see Leibsohn and Dean, "Hybridity and Its Discontents," 5–35.