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Sociology of Objects Case Study:
Terra-Cotta Playing Hide-and-Seek in the Art Worlds

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ABSTRACT

Sociological inquiry has been mostly absent from the investigation of mass-produced material goods, especially materials in the architectural arts. If sociology takes as a subject social networks in modern society—one of whose chief characteristics is mass production—then the "mutually determining" relationships between the material results of mass-production and social networks should have a central place in sociological study. Art worlds are constructed both by people and the objects they work with: people make objects which, in turn, influence people in an ongoing dialectic. By tracing aspects of architectural terra-cotta production through the modern period, this paper demonstrates that the specific investigation of a mass-produced art object, which is also a unique architectural and sculptural material, both lends itself to particular social networks in its use and creation and also brings greater richness to issues of sociological concern, including the importance of how the object itself plays a role in social networks, the exploration of architecture as art worlds, and the use of Becker's "art worlds" concept to study mass production. In doing so, this article contributes new aspects of investigation to the study of art worlds, such as topics related to the roles of geography, technology, finances, mass media, labor competition, fashion, identity, durability and public safety, in combination with one another.

INTRODUCTION

"Whacked—but Terra-Cotta Tragedy Averted" was the title of a November 2003 *Chicago Sun-Times* article which described the adventures of a chunk of terra-cotta, approximately 41.5" long and weighing more than a pound, which fell from Chicago's forty-story Mather Tower, hit a man, bounced off him, and hit his young son. Built in 1928, Mather Tower was, in 2003, undergoing renovations. While the exact reason for the chunk's fall is unclear, the falling terra-cotta resulted in injuries requiring a sum total of twenty stitches and a broken nose. Because both victims considered themselves lucky not to have been killed, the story—bloodshed and all—framed terra-cotta as an agent of tragedy that did not occur. This paper argues that this is a characteristic role for terra-cotta. Terra-cotta has proven itself malleable in a wide variety of applications, both actual and metaphorical, throughout history, hiding and revealing itself in "art worlds," depending on the social and historical context of its uses. At the same time, terra-cotta appears, as it were, as if from nowhere, inanimate and yet acting as if it had agency, this time as a projectile from the sky.

Architectural terra-cotta is one of many ceramic products, which are made of glazed or unglazed baked clay.[1] Ceramic is a component of many contemporary products, the most apparent of which are floor tiles, and everyday pottery used for food service and for gardening.[2] Unlike brick, terra-cotta is a "mixture of anywhere from two to six kinds of clay, each with certain properties of its own, added for a certain reason" (Terra Cotta, 1990). Recipes for terra-cotta are closely guarded secrets, and the recipe for Coade Stone, often considered the most resilient of terra-cottas, died around 1821 with the death of its maker, Eleanor Coade (Berryman, 1984: 27). Born in 1733, she went into manufacturing to support her mother after her father's bankruptcy and death in 1769. Despite, or perhaps because of the enormous success of her venture, she hid the fact that Coade Stone was terra-cotta (Architectural, 1996: 32). This hiddenness has bearing on terra-cotta's identity problems. Another factor has to do with the fact that "there is no agreed international terminology...definitions of manufacture vary according to regional preferences and artistic taste" (Architectural, 1996:7).

This paper focuses on architectural terra-cotta's most recent period of popularity in the United States, from the mid-nineteenth century to the Depression, and serves as a starting point for discussion of the inclusion of architectural ornamentation in art worlds research. Issues discussed include the warrants for including architecture in the art worlds discussion, as well as specific ways this topic may serve as a unique contribution to the sociological understanding of art worlds, by expanding on the roles of objects in social networks, and by showing the interactive relationships (or "lash-ups") among the roles of geography, technology, finances, class and status,

[1] What exactly is terra-cotta? The word's duration in the human vocabulary is a testament to the continuous usefulness of baked earth materials. Originally from the Latin words terra coctilis—"terra" (meaning earth) and "coctilis" (meaning baked, of bricks)—terra-cotta has been continually useful, and intermittently fashionable, since antiquity, the term itself in use since the days of ancient Rome. The English usage, terra-cotta, comes directly from the Italian word "terracotta." The English merely separated the Italian word into two words to make "terra cotta" English, but the word seems to be moving closer to fusing again, as witnessed by the most recent Merriam-Webster's dictionary claim that proper usage is the hyphenated "terra-cotta." The Italian translates as cooked, burnt or baked earth. In English, "terra-cotta" had come to mean both baked earth and a specific brownish-orange color (Merriam-Webster's, 1999:1217).

[2] The properties of architectural terra-cotta are distinctly different from architectural products made from uncooked earth, such as adobe buildings and mud huts. It is important to note that terra-cotta clay comes in as many colors as the earth does; in fact, Canada was a significant market for white United States terra-cotta because their clay pits only produced red clay. Part of terra-cotta's identity problems reside in the consumer outcry, "But it's not red!"

mass media, labor competition, fashion, identity, durability and public safety in the art worlds. Further, these variables are intimately entwined with what is seen and what is hidden—as will be discussed later. Art worlds, especially in a mass production context, impact populations broadly because mass-produced art is a significant means through which shifting cultural values are experienced and expressed.

LITERATURE REVIEW

Before this discussion proceeds further, it is necessary to more clearly define "art worlds" from a sociological perspective, thus averting the risk of setting the reader adrift in a semantic minefield. This paper takes as its starting point Howard Becker's *Art Worlds* analysis of patterns of "cooperation and assistance through which work gets done" (Becker, 1982: xii). Becker argues that "[a]ll artistic work, like all human activity, involves the joint activity of a number, often a large number, of people" and the "complexity of the cooperative network" makes art "happen" (Becker, 1982: 1). He calls these "art worlds" which he says "consist of all the people whose activities are necessary to the production of the characteristic works which that world, and perhaps others as well, define as art" (Becker, 1982: 34). This differs from popular culture view of art production which celebrates the heroic solitary struggling artist, and omits discussion of the many others who help. This paper seeks to make both simple and complex contributions to scholarship, first by providing an empirical case study to the research on art worlds, and second, by extending the art worlds concept into the realm of architecture and merge it with the nascent field of the sociology of objects.

Whether architecture is even art has been subject to long debate. This paper takes the position that architecture is a collaborative art; and this paper does not tread the dangerous ground of judging the relative quality of architectural art, but rather posits the self-evident notion that the extraordinary variety of quality in architectural ornament, a part of the architectural art, occurs similarly in other arts, such as film-making and music-making,, which can also involve collaborative creations, mass production and mass publics. The stand for architecture as art was well-articulated by architect Robert A. M. Stern:

> Architecture…is an art, but it is not the same kind of art that painting and sculpture might be. For example it's a public art or a social art. It requires first of all the support of an enormous amount of people to produce buildings both in the architect's office…After all most buildings are not done…Fountainhead style, one lonely architect sitting and drawing away. It requires many collaborative professionals. It requires money, which we can sum up as the client. And it requires the public's support usually so that buildings can be built within the larger constraints. And it requires finally that the public in the largest sense support the buildings. Otherwise why build them? (Stern 2007)

Architecture, then, as a "social art," requires many people from different walks of life to bring it to completion, including the architectural workers, the financial supporters, and public support. It is less useful to focus on the issue Becker identifies as the "problem to decide which of all these people is the artist" (Becker, 1982: x). Instead Becker reframes this as a sociological project which examines the art process, rather than an aesthetic judgment process which can value the artist over the craftspeople. Becker asserts that for the purpose of this analysis, "the craftsmen who make artworks are as important as the people who conceive them" (Becker, 1982: ix). To clarify, I argue that terra-cotta does not have to have a designated "artist" to be part of the social art world of architecture. The identity of the specific

creator of the design of the product may influence the work's ability to move the viewer, but since we are not judging relative merit of art works here, these considerations are not central to this paper.

Scholars have done extensive research building on Becker's work. Bruno Latour argues for the interactivity of humans and objects, a two-way and sometimes dialectical relationship between products and people—both users and makers. Claiming that, "we tend to limit the social to humans and modern societies, forgetting that the domain of the social is much more extensive than that" (Latour, 2005:6), Latour argues that to limit sociology solely to the study of people, without including the roles of the many and varied objects which are involved in human relationships, makes for an incomplete sociology. He says, "anything that does modify a state of affairs by making a difference is an actor" (Latour, 2005:71). His "Actor-Network theory" extends "the list and modif[ies] the shapes and figures of those assembled as participants and to design a way to make them act as a durable whole" (Latour, 2005:72). Objects do not stand alone, but rather the works are understood through the way that they are experienced in a participatory process including people and art works. Rather than passive subjects, they are "an active and dynamic material in social life" (DeNora, 2000:5). Significant research has been done both on the micro level involving specific art forms and on the macro level. This work includes exploring musical consumption as a practical activity (Hennion, 2003; De Nora, 2000, 2003), and broadening concepts of cultural sociology to include material culture (Acord and DeNora, 2008).

Further, the paper adds to discussions of how disciplines have embraced objects of art and craft, especially mass-produced goods, in a wide variety of ways. Architecture and art history tend to frame the subject as one of industrial design, with a focus on key designers and their progress and innovations (Flinchum, 1997; Dreyfuss, 1967). Anthropology has looked extensively at the role of objects as commodities, especially pre-industrial objects (Appadurai, 1986). Prior discussion of terra-cotta has framed it in a purely instrumental (and non-interactive) way: scholarly work discusses specific historical periods and their production, specific materials and buildings, specific geographic regions, restoration issues, the role of ornament, and technological development .[3] Further, the paper discusses the social nature of architectural art materials' role in architectural production. In doing so, it contributes to the extensive debate about the role of architectural decoration (Lynch 2008, Finch 2006, 2007, Gregory 2007, Richter 2006, De Botton 2006, Oak 2005, Sullivan 2004, etc.), by framing the terra-cotta discussion within the "art worlds" notion of social process, including manufacture, promotion and distribution.

Finally, how can a study of architectural terra-cotta contribute to our understanding in the nascent field of the Sociology of Objects? Pioneers in the sociological study of objects argue that the "physical world of objects" connects with "people's social worlds" and that "art and expressivity, on the one hand, and utility and economy, on

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[3] Researchers have written about architectural terra-cotta for well over a hundred years. The literature about architectural terra cotta has remained consistent through time in the sense that it reflects concern about its uses. And those concerns fall roughly into five categories. 1) Geographical discussions of specific regions where there are terra cotta buildings and specific buildings where the materials were used (for example, Glance 1985, Fan 2001, Boss 1989). 2) Historical discussions of different uses of architectural terra cotta and histories of specific terra cotta companies (Gladding 1981). 3) Discussions within specific time periods of ways in which it is contemporaneously used (Tunick 1987, 1988, Barton 2001). 4) Discussions about its composition, and related discussions about substitutes for terra cotta especially in regard to repair, restoration and preservation (Fisher 1983, Stockbridge 1986, Callahan 1987, Tunick 2001, Lanius 1986, Hunderman and Slaton 1988, Tindall 1989, Taylor 1891, Searls 2001). 5) Articles about competitions involving terra cotta use (Blueprints 1985, Progressive 1985). For a nearly exhaustive annotated bibliography of works about terra-cotta up to 2001, see http://www.conlab.org/acl/initiatives/TerraCottaBibliography.pdf.

the other, are in mutual determination" (Molotch and Kirshenblatt-Gimblett, 2006). Areas of research include: "geographic place and its impact on goods, identities and their interaction with objects, how fashion systems operate, changing modes of corporate organization, and ecological implications," (Molotch and Kirshenblatt-Gimblett, 2006). Sociologist Harvey Molotch argues in *Where Stuff Comes From* that "nothing stands alone", and uses the concept (attributed via Bruno Latour to John Law) of the "lash-up" (Molotch, 2005: 1-2) to describe how stuff comes to be. Evoking in this reader's mind the movie cowboy roping "bad guys" together and then to some stationary object until the Sheriff comes, the "lash-up" concept does indeed posit that a wide variety of objects and forces (such as people, geography, politics, the media, display, corporate organization, etc.) must come together so that a thing like, for example, architectural terra-cotta, comes to be, for a time, a successful product in the marketplace. The power of the lash-up notion with regard to art worlds is that it helps in opening the perspectival field wide enough to see more fully the complexity of the public art worlds creative process.[4]

The Sociology of Objects suggests then that a close, geographically-specific examination of the productive life of any man-made object—in this case, architectural terra-cotta—can shed valuable light on a previously unexplored aspect of sociology. As discussed previously, this paper makes a start of this project in several ways by examining both terra-cotta's social history and specific records of an architectural terra-cotta company.

METHODS

This paper argues both that terra-cotta as an art world has a broader scope, and also that it has a subtler one. Permutations of its relationships in the art worlds are discussed through the rest of the text. Beyond architectural terra-cotta's place as a discrete network within the larger network of architecture, architectural terra-cotta is also an art world which is intimately linked by necessity to the larger art world of architecture which calls for its creation, and in turn to the large social and historical world that receives the work. This art world is also examined at the micro level in terms of the discrete network, through investigation of extensive records of failed bids of an architectural company which were found in an attic in Queens. As architecture—including terra-cotta as an architectural material— exists within an artistic framework, the architectural art world Robert Stern described above includes the public reception of the work, which is also discussed. This multi-sited approach is employed because, as Bruno Latour notes,

> …once built, the wall of bricks does not utter a word—even though the group of workmen goes on talking and graffiti may proliferate on its surface…This is why specific tricks have to be invented to make them talk, that is, to offer descriptions of themselves, to produce scripts of what they are making others—humans or non-humans—do. (Latour 2005:79)

This paper use specific "tricks," as Latour calls them, to make the materials "talk." Those methods include looking through a broad variety of investigative lenses to enable the terra-cotta to describe itself fully. I drew my data from literature on terra-cotta, including books and advertising brochures from companies which manufacture

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[4] For example, as a long-time admirer of late Nineteenth and early Twentieth Century American pottery, I have wondered how America suddenly came to make extraordinarily beautiful pottery, and then just as suddenly stopped. There are obvious lash-ups to the Arts and Crafts movement, but one of my startling finds was that some terra-cotta companies, not wanting to lose skilled craftspeople during winter (when fewer buildings are made), employed their workers making this now-famous and valuable pottery.

and manufactured it, original records from a terra-cotta manufacturing archive, and the database records archivists at Columbia University's Avery Library compiled in the process of archiving those original records. In addition I made site visits to many original terra-cotta covered buildings in the New York metropolitan area

FACETS OF TERRA-COTTA'S EMERGENCE AND DISAPPEARANCE

In the presentation of data below, I first examine the social history of terra-cotta, then the social process of terra-cotta manufacturing and the social construction of the artist. I then investigate the geographic and financial worlds that allowed the terra-cotta business to prosper or inhibited it from doing so, as well as the role of mass media, technology and fashion in terra-cotta's identity formation. Finally, I draw on database records to explore further some questions raised in prior sections.

A BRIEF SOCIAL HISTORY OF TERRA-COTTA

In keeping with Becker's argument about the social world, including art worlds, that people "develop their lines of activity gradually," (Becker, 2006:278), humanity's relationship to clay and terra-cotta products goes back to the earliest known human history. Because of their durability, terra-cotta products from Etruscan pot-shards to an entire full-sized Chinese army of terra-cotta men on horseback are found at nearly every archaeological site. Terra-cotta experienced one of its intermittent popularity periods during the Renaissance, sculptor Luca della Robbia being one of its great practitioners. While terra-cotta products have long been used in the United States—for example, smokers' pipes were made as early as the Seventeenth Century—terra-cotta's use as an American architectural building material has a distinct historical trajectory as a hand-crafted, "mass-produced" industrial product. The popularity of terra-cotta as an inexpensive building material in Europe influenced Americans to begin using the material in the 1840s and earlier on a small-scale to imitate carved brownstone. Mid-century stonecutters and masons in New York resisted the use of terra-cotta. They claimed it was a threat to their livelihood. They were among the first to argue that the material was not durable (Tunick, 1997: 5). Desperation helped construct their argument, and in turn shaped the public perception of terra-cotta. Terra-cotta, mute, could not respond. However, architects and manufacturers persisted in making and using it. An early extant example of architectural terra-cotta was recently discovered during restoration of Manhattan's Cooper Union Building (1853-1858) where terra-cotta was found on "arches, keystones, capitals, and window surrounds of the fourth and fifth stories," painted over to resemble brownstone. (Shackley et al., 2004: 207).

However, it was not until the Great Chicago Fire of 1871 and the Boston Fire of 1872 that terra-cotta caught on as a useful building material. Once again, necessity caused a shift in public perception. The fires taught building professionals that their faith in the fireproof nature of stone and iron was misplaced. They learned that cast-iron structures required the protection of a brick or terra-cotta sheathing (Tunick, 1997: 7). Thousands of buildings would need to be rebuilt, and terra-cotta would help secure them against disaster. From that point on until about the time of the Great Depression, terra-cotta became allied in the public imagination with safety and durability and became an extraordinarily popular material for architectural uses (with the "lash-up" help of, for example, a 1886 Chicago ordinance that required all buildings be fireproofed, the terra-cotta genius from England, James Taylor,

assiduous advocates for terra-cotta's merits, the winds of fashion in ornamentation, and the successful use of the materials, among other things).

It's important to tease out some of the additional complexities of that lash-up. Terra-cotta's success could not have been predicted from available evidence. As Becker points out, "the practical possibility of predicting any event, considering the multiple specific events that are necessary and the diminishing multiplicative probabilities, approaches zero" (Becker, 2006:282). It was not inevitable that sheathing metal building frames would necessarily create a market for the ornamental use of terra-cotta on buildings' surfaces. "There's a symbiotic relationship between terra-cotta and Queen Anne and Romanesque architecture" (Terra Cotta, 1990: 4). The decorative surfaces of those architectural styles were part of a system of belief in decoration which also manifested itself in the clothing fashions of that period, "in the eyes of most people a building without decoration was nothing, it was naked, an undressed and rude structure…architecture without ornament was ungracious and vulgar, without refinement or sophistication" (Barnard, 1973).

Terra-cotta met the needs of the times. Despite the time required to produce appropriate durable terra-cotta materials,[5] it was relatively cheap to produce because labor at that time was cheap. Both America and Canada had a large population of European immigrant craftsmen who were accustomed to ornamentation in architecture.

In both the physical or "real" sense, as well as in the metaphorical sense, terra-cotta, was made to order. It satisfied the construction industry's need for a fashionable, sophisticated building "skin" that traditional handcrafted methods could not supply in sufficient quantity. As an added bonus, it exhibited at least two qualities highly prized by the burgeoning middle class: it was relatively inexpensive and was capable—as was no other building material—of expressing ornamentation with a sharp, even, crisp edge (Terra Cotta, 1990: 2).

THE SOCIAL PROCESS OF TERRA-COTTA MANUFACTURE AND THE SOCIAL CONSTRUCTION OF THE ARTIST

The specific process of making terra-cotta for architecture and bringing it to market during the 19th and 20th centuries in the United States has historically been as follows: Architects provided rough sketches and references to the style period within which the work belonged. It was the modeler's job to execute the ideas of the architects, and within the terra-cotta manufacturing shop which could employ hundreds, the few modelers were the highest paid workers, earning $2 per hour to the other workers' $.60 per hour. Many of the modelers were trained European sculptors (Tunick, 1997: 32-6). Whether the workers were seen or saw themselves as artists or craftsmen varied from person to person and project to project:

> The range of architectural sculptors…was as diverse as the population…itself. Many were foreign immigrants who brought traditions from their native countries and had freedom from the stylistic conventions imposed by their adopted land. Several build careers as professional sculptors, establishing a critically recognized stature as creators of independent works of art in addition to their collaborative architectural projects. Countless others labored anonymously in the city's architectural terra-cotta

5 Terms used in terra-cotta production evidence the time it takes to make the stuff. "Blunged" for example means to stand lumps of clay "in heaped layers for a season or two so that the frost and rain would break down and mix the materials." "Sour" means to "stand" the materials "for some months under water" (Architectural, 1996: 7).

> plants, plastering shops and stone yards, translating the sketches of… architects into vibrant three-dimensional forms. (Samuelson, 1994)

The promotional materials of one manufacturer, American Terra Cotta, describe one of their modelers, Kristian Schneider, as "an artist to and in the tips of his fingers, always anxious to give you what you want, and not what he thinks in his own opinion what you ought to want" (Tunick, 1997: 32-6). That is a curious definition of artist as without ego and without inspiration. In contrast to emphasizing the romantic loner artist stereotypes, 1912 promotional materials for the Atlantic Tile Company offer a collaborative approach to art-making: "If desired, our service includes suggestions on modeling and treatment in colors" (NYATCC, Box 154, file "Atlantic Tile Company"). The definition of artist is a social construct which changes to suit the demands of historical context.

As Robert Stern (2007) has suggested, a project could be well underway when, for many reasons, the client could demand a role in the making of the artwork. In the following case, the building didn't correspond to the client's sense of their own importance. An agent wrote to the New York Architectural Terra Cotta Company (NYATCC) that a 1912 train station project was held up after NYATCC placed multiple bids (this means that the project was well underway: architectural plans had been drawn up and contractors for all parts of the jobs had been solicited for bids). Why was the project halted? "On account of the citizens of Canton, who demand a much larger and finer station than the present contract calls for." Once the plans were re-drafted to satisfy those citizens, in 1914, NYATCC again bid the project and lost (NYATCC, Box 17, File 23104). This description helps bring a nuanced understanding to Becker's emphasis on incorporating "into our conception of art-making the people who are conventionally left out of such an analysis: the technicians, the money people, all the people I have called 'support personnel'" (Becker, 2006:284). Becker also talks about the "internalized dialogue" in which artists imagine producers and consumers preferences and create work specifically for those conventions (Becker, 1982). In architectural art worlds, these internalized dialogues are often externalized because of client demand for specific changes in the product.

One expected result that emerges from the examination of available data about architectural terra-cotta data is that a wide variety of characters (whether artists, craftspeople, or others) play different roles in the creation of material in this art-world within an art world. While this notion of collective work is consonant with Norbert Elias's more general theories of "figuration" which he defines as the "network of interdependencies formed by individuals" (Elias 2009 [1978, 1982]), Becker's art world's theory, and those of succeeding scholars, allow us to bring the framework of a socially contested making-process into an already well-developed discussion of the ambiguous, dynamic and rich notions of the purpose and process of art. The social construction of the artist, as shown in this example, refutes popular cultural stereotypes, as well as sociologist Richard Sennett's notion of the artist as one who creates something original (Sennett 2008), and adds a new bend to this "art worlds" puzzle. As has been discussed, the relative merit of a work of art is not the province of this discussion. However, the shifting shape of the definition of an artist, the extent to which a designated creator is identified in the work or a creator's identity is hidden by it, is part of a general discussion about visibility, malleability and hiddenness.

BIKING THROUGH QUEENS ON A SUMMER AFTERNOON, OR ART WORLDS AS GEOGRAPHIC WORLDS AND MONEY/STATUS WORLDS

About eight years ago, I was riding my bike along Vernon Boulevard beside the East River in Long Island City, Queens, and as I approached the Queensboro Bridge, I noticed in its shadow a beautiful old boarded-up ornamented brick building, with a roof that descended in steps to the brickwork below it. Among the strange features of this building was that it stood alone, and all that lay between it and the river was more than a hundred feet of brick gravel; clearly the dust of the remains of many other buildings which had been torn down around it. Why this building still stood and the others did not, and what function this building had served, remained mysteries to me until I read *Terra-Cotta Skyline* by Susan Tunick, a book about the history of terra-cotta production in the United States, and its impact on New York City's architectural ornamentation. There I learned that this brick building had once housed the offices of the New York Architectural Terra Cotta Company (NYATCC) which manufactured the architectural terra-cotta for many well known New York City buildings, including the Hotel Lucerne on West 79th Street (whose ornament resembles fudge frosting on a brick cake), Carnegie Hall, and the Plaza Hotel (now in the process of becoming luxury apartments). Founded in 1886 by Orlando Bronson Potter and Asahel Clarke Geer with some help from a terra-cotta production-and-distribution savant named James Taylor, the NYATCC became among the largest terra-cotta manufacturers in the United States.

What distinguished this company from the forty-seven other major terra-cotta companies during the peak years of American terra-cotta production was Taylor's decision to place it near New York City where the need for architectural terra-cotta would be greatest, rather than near the clay pits where the materials were found. If Manhattan needed architectural terra-cotta it was just a boat ride or train ride away across the river (NYATCC had its own dock and train stop). In 1913, the NYATCC had twenty operating kilns. The largest kilns could hold 35-45 tons of fired terra-cotta, which is the equivalent of two full railway cars (Tunick, 1997: 46).

By 1932, a victim of the Depression and changes in architectural fashions, the company was bankrupt, as were many other architectural terra-cotta companies. The building site was purchased by other terra-cotta concerns, but by the early 1970s the factory buildings were torn down, and only the office building remained. It is now the property of Silvercup Studios.

"Art worlds" have a geographic sprawl and geographic constraints. Geography helps to construct the possibilities of this art world. NYATCC built over 2,000 architectural terra-cotta projects. Of the over 6,200 failed bids recorded here, most bids centered around the New York Metropolitan Area. However, they bid jobs as far away as South America, and even bid one in Japan. NYATCC had a branch office in Pittsburgh, Pennsylvania, which helped extend the practical reach of the company into the Ohio Valley area.

"Art worlds" are also, as has been mentioned, money worlds. Examination of the money worlds can suggest ways in which the world of class and status works and does not work. The beautiful facades of terra-cotta buildings give no clue to the fierce financial competition among contractors in all aspects of building projects. On December 20, 1912, a Mr. Stewart writes a characteristic tip to NYATCC regarding getting a job: "we think it advisable for one of your men to go direct to Pittsburgh and camp on these people's trail until the contract is awarded." Frequently, after

NYATCC had sent several letters modifying their bids, the contractor would send back a list of what four or five other companies bid on the project, and suggest lowering the bid still further (NYATCC, Box 17, files 23100-6). The complaints against the high cost of NYATCC's projects echoed through these files. However, it is important to remember that NYATCC survived just as long as most of the other companies, and that the extant record is by historical accident largely failed bids.[6] Several times, the "old boy" upper-class network is called upon as a letter suggests one fellow or another is the point man to see. It was a business run by many of the old boys: "De Forest Grant, like many executives in the terra-cotta business, was a Yale graduate, a member of numerous distinguished societies, hunted big game in Africa, had a summer residence in Winter Harbor, Maine, a winter residence on East 54th Street in Manhattan, and a business address on Park Avenue" (Safford, 1974: 160). Perhaps unexpectedly, this archive of failures shows how often the network failed the old boys.

THE ROLE OF THE MASS MEDIA, TECHNOLOGY, AND FASHION IN TERRA-COTTA IDENTITY

Media also helped shape the public perception of terra-cotta. The media sometimes heralded terra-cotta as a fashionable savior. *The Brooklyn Daily Eagle* wrote "Terra Cotta will lift us out of the uninviting uniformity of brick and mortar and brownstone, give opportunity for tasteful embellishment and contribute greatly to the beauty of our city." In a continuum to this panegyric, the 1881 Long Island Historical Society in Brooklyn, clad in terra-cotta was called "a poem in red" (Safford, 1974: 155). Because no trend is ever inevitable or uncontested, the media also had critics of architectural terra-cotta. In 1881, *The New York World* wrote that "terra cotta does not give the eye the sense of strength and power which seems to be inherent in stone" (Safford, 1974: 155-6).

Terra-cotta could not keep its place as a viable building material if it depended on the demand for a specific architectural fashion, "within twenty years the brick darkened by chimneys, with their cheery colours dimmed, their sharp details blurred, the prematurely aged Romanesque and Queen Anne marvels of the 1880s and the 1890s were passe" (Terra Cotta, 1990: 8). As advocates for terra-cotta often do, this writer anthropomorphized terra-cotta, claiming that rather than blaming coal for the problem, "society blamed the victims" the buildings (Terra Cotta, 1990: 8). Nor could terra-cotta keep its place as an insulator of buildings' structures. By the early Twentieth Century, reinforced concrete had taken on a significant role as the material covering steel beams for architectural support (Berryman, 1984: 2).

It's important to note that the United States terra-cotta business went from $1 million in 1890, to $2 million by 1900, to $8 million by 1912 (Safford, 1974: 159). The lash-up between terra-cotta and technical innovations helped keep terra-cotta in the building production picture. With the invention of elevators and steel-frame buildings, tall buildings became a useful possibility for dealing with the exponential growth of North American cities (Ferriday, 1984). Terra-cotta, hollowed out for firing, is half the weight of stone. This allowed for the possibility of putting a relatively lightweight skin on those tall structures like the aforementioned Woolworth

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[6] NYATCC did not have a small fixed client-base. They bid on buildings designed by thousands of different architects. The archival research showed that in the 6,248 bids recorded, only about ten architects received bids for more than twenty of their buildings: Groenenberg & Leuchtag (apartments), Kreymbor Architectural Co. (apartments), Thomas Lamb (theaters), McKim, Mead & White, Mowbray and Uffinger, Neville & Bagge, Schwartz & Gross, Snyder C. B. J. (public schools-the largest number of failed bids to one architect, over 50), Starrett & Van Vleck, Warren and Wetmore (hotels and apartments).

building. It is coincident that terra-cotta's plasticity made possible the embellishment of those tall buildings. In 1910, a building magazine, *Contract Record* argues that, "The tall building was made possible, feasible, a reality and not a dream, by the invention of fireproof tile," a terra-cotta product, to which a contemporary author, Patricia McHugh, adds, "tall buildings were best dressed in architectural terra cotta." (Terra Cotta, 1990). By 1911, more than half the buildings in New York City were terra-cotta (Tunick, 1997). The lash-ups involved in terra-cotta also contributed to growth of terra-cotta use outside the big cities. Terra-cotta "made it possible for small towns to receive powerful and sophisticated buildings" (Terra Cotta, 1990: 136).

The Art Deco period allowed for another life for architectural terra-cotta. "Art deco invited color in" (Ferriday, 1984), and terra-cotta was uniquely well-suited to take on the multi-colored glazed projections of the wildest of architectural imaginations: "Released from the grim realities of WWI, Americans of the 1920s allowed free play to their fantasies during a free spending decade" (Darling, 1992). Look up more than one story on almost any block in uptown, mid-town, or downtown Manhattan and you might still see eagles, hawks, rams, gnomes, or owls created in terra-cotta during that period. The city has a curious life above "eye-level." More than a story up from the street, on many older buildings, is a veritable menagerie of fantastic creatures and colors. Almost a hundred years later, they continue to gaze down as most of us rush by, oblivious. By 1930, terra-cotta had been used in over 250,000 buildings. In 1990, it was estimated that half of those buildings were still in service (Terra Cotta, 1990: 37). While many point to problems in manufacture, installation, and maintenance of terra-cotta as significant causal factors in the decline of terra-cotta's popularity, and terra-cotta's problems, including "whacking" people, are legion, it's important to acknowledge that all man-made building materials have had problems in manufacture, and all building materials have suffered from poor installation and maintenance (Architectural, 1996: 11-14).

It might be more accurate to say that it was not just terra-cotta, but rather the entire hand-crafts industry in building production lost out, after the Depression. It could be argued that the mechanization implemented during the two World Wars destroyed mass-produced hand crafts. The machine-finished mass-production implemented as a result of arming for the Second World War, brought with it a corresponding shift in consumer demand. When manufacturing resumed for World War II architectural terra-cotta manufacturers found only a tiny foothold in the war economy, building ceramic fake bombs filled with flour or powdered plaster which pilots used to check "the accuracy of bombing location devices" (Tunick, 1997: 114). In the post World-War-II period, economic factors were said to "overshadow" artistic considerations, but also the appearance of modesty had to coincide with this new appearance of economy, frugality, and modernity. There are shades of Weber's Protestant ethic in this shift (Weber 2002). After all, creating the semblance, the appearance, of economy is itself an art. Onto concrete, brick, and steel, were projected the identity of humble "modern" materials. Additional lash-ups occurred with changes in building codes and zoning laws restricting the possibilities for terra-cotta's uses (Safford, 1974:161).

DATABASE RECORDS

In 1982, when the aforementioned New York Architectural Terra Cotta Company (NYATCC) office building in Long Island City, Queens, was designated a landmark, it was discovered that more than six thousand files (covering the period from 1911 to 1920) containing failed architectural bids and miscellaneous items including

correspondence, trade catalogs, photographs of terra-cotta samples, and construction records from three buildings, had been sitting, covered with dust, in the office's attic crawl space. The Friends of Terra Cotta (a non-profit organization led by Susan Tunick), with the financial support from the NEA and the New York State Council on the Arts, saved, cleaned and catalogued the records, which are now housed at Columbia University's Avery Library. [7]

I used these database records to explore terra-cotta's "identity" issues, and its frequent use as a "hidden" material (disguising itself as, for example, granite or brownstone). I was interested in the actual competition from other materials. To what extent did NYATCC's bids fail because other materials were used to ornament buildings? The question of the efficacy of terra-cotta's disappearing, disguising itself as stone, is part of my general research question about the way mass-produced objects are embedded in, and revelatory of, social relations. For just over 800 bids, we know that the outcome was due to losing to competing materials such as stone, concrete, wood, metal, stucco, or other materials unknown.[8] I charted those bids by year and by material.[9]

Flexibility is not always a long-term asset. *Terra Cotta, Don't Take it for Granite,* the title of Susan Tunick's guide book to New York City's terra-cotta buildings, indicates several problems which have faced terra-cotta, among them its ability to make itself resemble other materials, and the fact that it has indeed been taken for granted. Within the frame of its use as an architectural product, terra-cotta has also moved from being hidden to being celebrated for the unique qualities terra-cotta can bring to a building's surface. More often, terra-cotta use was hidden. In 75% of the projects involving terra-cotta, it was used as a substitute for stone (Tunick, 1997: 63). Champions of terra-cotta argue that this very flexibility helped lead to its demise, that it is "a victim of its own success;" an adaptable chameleon, terra-cotta is "the perfect servant: silent, unassuming, and never requiring acknowledgment." Also architects, contractors and producers—Eleanor Coade among them—"seldom gave it the credit it deserved" (Terra Cotta, 1990:7).[10] Here we see the dialectic in action. The object, once designed, is made with greater or lesser degrees of integrity by artists or crafts people. (Because of the intensive secrecy surrounding manufacturing

[7] The art and architecture graduate student interns who catalogued the records used a computer program called MicroSoft Works. According to the Curator, Avery Library now uses Excel, and no longer has computers that can use the Works database program, so the only accessible part of the students' monumental labors are three binders, one of which organizes the failed bid records by architect, a second which organizes the records by state where the bids were submitted, and the third which organizes the records by building type (*i.e.,* bakery, bathhouse, civic, fire house, garage, etc.) Each database record has the following fields: the Job Number (NYATCC's original number), the date of the job, the architect, the name of the project, the client, the contractor, the city, the state, the address, the outcome, and the building type.

[8] The Archivist randomly chose an archival box to sample the files against the records in the binders. To estimate the accuracy of the computer print-out record, I sampled six files (23100-23105) from box 17. Of the six files, four were accurate in all eleven fields. In the fifth file, the fact that two projects were bid upon was not recorded (the files sometimes contained more than one bid for more than one project,), in a sixth file, the date was not accurate. In other words, any conclusions reached using this data should be considered approximate. Despite the limitations of the computer database printout, I chose to work from it because of the fragility of the thousands of papers, and the time it would take to re-create the massive effort undertaken by those who came before.

[9] In the 6,248 failed bids in NYATCC's files, the majority list either the name of the company to which the bid was lost, or the words "abandoned, dead, or unknown" appear in the card entry. According to records, "abandoned" usually means that the originator of the project decided not to build it (NYATCC, box 154, "agents" file). The exact meaning of "dead" is not yet clear (but it does not look good for NYATCC). "Unknown" presumably means that the outcome wasn't known to NYATCC.

[10] It is ironic that plastic imitates terra-cotta to gain credibility. For example, in garden pots, plastic often takes on the color and the surface texture of terra-cotta. Here, terra-cotta is the "authentic" material to be simulated. The meaning of authenticity changes in different contexts (terra-cotta was often another imitation the "real thing" when that was stone building materials, but later when plastic sought to resemble the "real thing" it imitated terra-cotta pots). There is a curious malleability to the meanings of mass-produced material goods as they appear in and disappear out of fashion.

specifications, as discussed in the first footnote, the composition is also an issue.) Technological innovation also affects labor costs. Terra-cotta then performs with greater or lesser efficacy, leading to evaluations about the objects' value in the mass media, influencing public opinion about the use of the material. In addition, fashions change as do public perceptions of terra-cotta's relative safety, indicating the need for different materials. This may have little relationship to its actual potential as a flexible building material, given its actual range of possible uses and the varying recipes used to make it.

The records of the NYATCC might provide further insight into these and related issues. Because architectural terra-cotta entered the field in the Nineteenth Century as a competitor to stone work, I expected that the numbers of bids lost to stone would decrease over time. Because terra-cotta production fell so rapidly after the Depression (along with production of everything else), and in subsequent recovery years, terra-cotta lost its place in the architectural surfaces field to materials considered more "modern" such as brick, concrete, and glass, I would have expected the pattern of the failed bids to show a gradual increase in the popularity of those materials over the nine-year-period for which records were preserved. Instead the competition is fairly consistent throughout. The chart below maps the bids by year and material.

	TC Omitted Terra-cotta eliminated, other material used	Stone e.g.. marble, cut stone, limestone, bluestone	Concrete e.g., cement, artificial stone, imitation caen stone	Wood	Metal e.g., brass, galvanized iron, copper	Brick	Stucco	Other*	TOTAL
1912	30	69	10	1	0	1	3	3	**117**
1913	43	67	9	1	5	3	1	8	**137**
1914	42	63	18	0	5	5	1	7	**141**
1915	21	57	9	1	0	4	0	3	**95**
1916	22	40	10	0	3	2	0	1	**78**
1917	28	32	5	1	3	1	1	2	**73**
1918	4	9	7	0	2	0	0	1	**23**
1919	9	52	16	0	0	9	1	4	**91**
1920	7	28	9	0	1	8	0	1	**54**
TOTAL	**206**	**417**	**93**	**4**	**19**	**33**	**7**	**30**	**809**
TABLE I: ARCHITECTURAL TERRA-COTTA BIDS LOST TO OTHER MATERIALS 1912-1920									

*The most commonly used term is at the top of each list; "other" includes combinations of brick and tile, stone and brick, stone and tile, and stone and metal as well as tile, plaster, raritan clay, and litholite.

There are many unknowns related to this example. The most serious is that hundreds of entries marked "unknown" could not be figured into the calculation. However, it is noteworthy that, among the known outcomes, stone work remained a significant source of competition well into the Twentieth Century. While it is obvious from this data that World War I period correlated with a significant decline in American building production, terra-cotta was clearly on the rebound along with other materials in 1919-1920.

DISCUSSION: TERRA-COTTA IDENTITY AND HIDDENNESS

In the sociological literature, we first see the dance of a disappearing object in Marx's analysis of commodities. He points out that:

> A commodity appears at first sight an extremely obvious, trivial thing. But its analysis brings out that it is a very strange thing, abounding in metaphysical subtleties and theological niceties... It not only stands with its feet on the ground, but, in relation to all other commodities, it stands on its head, and evolves out of its wooden brain grotesque ideas, far more wonderful than if it were to begin dancing of its own free will. (Marx, 1977 [1868], 163)

Marx emphasizes valorizing the worker's labor in the industrial economy, and insisting on the laborer's right to that value. I am more interested in the metamorphoses he indicates when discussing changes of form from commodity to money to commodity (Marx, 1977[1868], 198-220). Marx traces the disappearance of money into commodities and the re-emergence of money from commodities with the residual profit accruing to the bourgeoisie. Marx also sees evolving from this process "a whole network of social connections of natural origin, entirely beyond the control of human agents" (Marx, 1977[1868], 207). There, at the macro-level, is an important notion that continues to dance at the micro-level.

This anthropomorphization of animistic elements has also danced through the discussion of architectural art worlds. As Latour notes in his discussion of objects in Actor Network Theory:

> …and as if a damning curse had been cast unto things, they remain asleep like the servants of some enchanted castle. Yet, as soon as they are freed from the spell, they start shuddering, stretching, and muttering. They begin to swarm in all directions, shaking the other human actors, waking them out of their dogmatic sleep. (Latour, 2005, 73)

Just as Marx suggested that money disappears into commodities and then re-emerges again as money, Latour suggests that objects are asleep and then come to life for the scholar employing these theoretical tools. As shown in the examples above, terra-cotta also seems to appear, disappear and then re-emerge again, assuming materiality in different apparent forms.

Without the specific "tricks," as Latour calls them, that were used to make the materials "talk," terra-cotta's role as a material in the art worlds would remain hidden. The paper looked through a broad variety of investigative lenses so terra-cotta's role could be seen more fully. Through examining the social process of terra-cotta manufacturing, the social construction of the artist, the social history of terra-cotta, the geographic and financial worlds of terra-cotta, the role of mass media, technology and fashion in terra-cotta's identity formation, and database records to explore further some questions raised in prior sections, this paper revealed the complexity of the lash-ups involved in art worlds, in dimensions not usually elaborated upon. This complexity allowed the analysis to reveal how cultural values shift and are altered in response to a wide variety of forces, and expressing themselves through the changes in the produced art, which in turn reinvigorates the cycle of response and re-creation.

CONCLUSION

Today there are only two terra-cotta companies in the United States: Boston Valley in Orchard Park, New York, and Gladding McBean in Lincoln, California. Much of the work of the recently-founded Boston Valley is restoration of extant buildings from earlier eras. Boston Valley's motto is "Recreating the Past and Building the Future." Gladding McBean is the only terra-cotta manufacturer that has survived from the Nineteenth Century. Although they have produced over 8,500 orders of custom-

made architectural ornamental terra-cotta, perhaps a contributing factor in their survival is the fact that their foremost emphasis has always been the production of sewer pipes from four to forty-two inches in diameter. Tastes in art and architecture may change, but fashions in sewer pipes apparently remain fairly constant.

Terra-cotta can re-emerge again as an instrument of embodied nostalgia. Perhaps the immigrant influx from Latin America to New York, Florida, California and Arizona, will bring about a large-scale resurgence of demand for roofs like the large haciendas admired back home, and terra-cotta in the form of roof tile will then experience a burst of architectural life in both MacMansions and ordinary homes? Terra-cotta is not just an antique material. It is our very earth (mixed in a secret recipe) and earth is inexpensive, so, as manufacturers innovate in finding ways to reduce labor costs, it is a material that will continually re-appear, especially if someone figures out the recipe to Eleanor Coade's stone. Becker reminds us that "knowledge is not equally distributed…because things have been kept from [people] by institutional arrangements" (Becker, 2006:285), to which I would add that knowledge also gets lost. Coade's buildings last hundreds of years and are like new. The stone has been analyzed in a lab, but as of yet no one who has figured out how to reconstitute it. Cast and re-cast by technology and fashion, terra-cotta is malleable and seemingly eternally re-emerging, yet that emergence is absolutely conditionally contingent on an interdependent web of interacting variables, including geography, technology, finances, class and status, mass media, labor competition, fashion, identity, durability and public safety.

The malleability both of our values and the perceived capacities of our materials is striking. We make our world as it suits us, molding terra-cotta to look like granite or other building materials, but the perceived capacities and actual activities of our material world can help us construct or reinforce our values. Sometimes, for example, terra-cotta becomes "unsafe",a threat to job security. It then becomes safe again when it sheathes the steel beams that structure our buildings, helping to fire-proof them. It again becomes arguably a danger when it "thwacks" a passersby. The relationship between the malleability of materials and values warrants further research (see also Molotch 2005).

Becker argues, "many principles work together in one way or another to produce the messiness of ordinary life" (Becker, 2006: 284). Without investigation, a mass-produced object remains mute about the enormous hive of human activity that brought it into usefulness and kept it there, and also the many lash-ups that help construct its role. This study of architectural terra-cotta expands on Becker's art worlds concept because it demonstrates that there are art worlds within art worlds: the creation of terra-cotta occurs within a discrete network of creativity within a sub-field of architecture, specifically that of architectural decoration. In this case study, through tracing the role of architectural terra-cotta production, I have demonstrated some of the possibilities for architectural ornamentation in the art worlds discussion. More generally speaking, the specific investigation of a mass-produced object suggests avenues for bringing sociological issues to light with a greater richness, such as the importance of how the object itself plays a role in social networks, the exploration of architecture as art worlds, and the use of "art worlds" to study mass production. The "mutually determining" relationships between products and people, how products are used through time, and how that usage sheds light on changes in social relations should be a primary concern for further work.

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