Often while analyzing archaeological data, a seemingly ordinary artifact or assemblage tells an unexpected story. In my case, this was the dozen amber embossed bleach bottles from the Whaley House collection. While analyzing the collection, I developed several basic research questions: When was bleach introduced, who used it, and most importantly, why? This “why” led to an exploration of marketing, branding, and consumption practices. Why did a product like Clorox (unknown at the turn of the twentieth century) become so widely consumed, and why was it considered an essential item by the time of World War II (WWII)? Did an increase in exposure to brand name advertising correlate with increased bleach consumption? By looking at various trends around the WWII era, I became aware of the profound impact advertising and marketing had on bleach consumption. This is an important factor to consider as we contemplate what the archaeological record of the future will look like. Below I provide a short history of bleach, then discuss my research methods and results, how brand marketing and advertising affect the consumer, and its significance for the archaeological record.

En el ámbito arqueológico, el análisis de los artefactos más ordinarios, o las colecciones más mundanas, suele revelar una historia inesperada. Este fue el caso al encontrar una docena de botellas de cloro en la colección Whaley House, hechas de vidrio y grabadas en relieve, de color ámbar. Al analizar esta colección, desarrollé una serie de preguntas claves de investigación: ¿Cuándo inició la venta del cloro? ¿Quién lo usó, y aún más importante, para qué lo usó? Este “por qué” me llevó a explorar las prácticas históricas de mercadotecnia, construcción de imagen corporativa y consumo. El motivo fue indagar cómo el Clorox, un producto desconocido antes del siglo XX, se había convertido en un artículo de consumo masivo, considerado como un producto esencial al inicio de la Segunda Guerra Mundial. ¿El aumento de ventas tuvo algo que ver con el aumento en la publicidad dirigida a las marcas? Al observar las tendencias del mercado en temporada de guerra, noté el impacto profundo de la mercadotecnia sobre la venta del cloro. Será importante explorar el papel jugado por la publicidad al imaginar cómo será el récord arqueológico del futuro. En esta obra, hago un resumen de los hallazgos de mi investigación, la historia del cloro en general, el impacto de la construcción de imagen corporativa y mercadotecnia sobre el consumidor y la relevancia arqueológica.

As a graduate student and intern at the South Coastal Information Center (SCIC) at San Diego State University (SDSU), I was tasked with cataloguing the glass collection unearthed during several years of field school excavations at the Whaley House. This historic house in Old Town San Diego was occupied by the Whaley family from 1857 to 1953. The Whaley House glass collection represents roughly 100 years of trash deposited from generations of the family, and disposed of in the privy, cistern, and back yard (Mallios et al. 2008:8).

Among the artifacts were approximately 10,000 pieces of glass. The minimum number of vessels totaled 361, which was calculated using rim and/or lip sherds. For roughly 62 percent of those vessels, it was possible to determine the substance they had once contained. Curiously, of the 191 glass vessels that were positively identified, 14 were embossed bottles for liquid cleaning products, 12 of which were bleach. Food and medicine bottles clearly outnumbered all other categories, but of the nonessential items (liquor, cosmetics, perfume), bleach was a close second, surpassed only by liquor.

These 12 bleach bottles were easily identified and datable since the brand names (Clorox, Purex, and White Magic) were embossed on the shoulder and heel of the bottle and maker’s marks on the base. Because
Clorox changed its bottle design frequently, it was possible to establish a tight absolute date range. Crockery jugs and bottles without embossing were used for Clorox bleach from 1913 to 1928. From 1928 to 1939, the bottles were cork top, and from 1940 onward they were manufactured with a screw top (threaded finish). Clorox also changed the lettering and patterns throughout these years (Clorox Company 2020a). The other two brands were Purex and White Magic. Purex was embossed on the base with the Latchford Marble maker’s mark used from 1939 to 1947, and the White Magic bottle was embossed with the Duraglas logo used between 1940 and 1954 (Toulouse 1971:403-406). In addition to those temporal indicators, Lillian Whaley died in 1953 and the Whaley House was left vacant (Mallios et al. 2008:22). With this information, I was able to establish a date range of bleach use between 1937 and 1953 (Figure 1).

![Figure 1. Bleach consumption at the Whaley House from 1900 to 1953 (Collins 2013:16, 86; Toulouse 1971:403-406).](image)

My first research question was: Who was using bleach at the Whaley House? Likely Corinne “Lillian” Whaley (born 1864), who was the last member of the Whaley family to occupy the house (Mallios et al. 2008:22). From at least 1929 to 1937, she lived with her niece Mabel James, her husband Frederick J. James, and their son Fred D. James. Both Lillian and Mabel were librarians at the San Diego Public Library in 1930 (U.S. Census Bureau 1930; U.S. City Directories 2011). Frederick James was a statement clerk for Wells Fargo Express. The earlier range of bleach bottles would have coincided with Lillian living with the James family, while the latter would have coincided with her living alone in the home. All three adults were professionals in “white collar” jobs and would have been expected to adhere to the dress code for clerical workers of the time, which included wearing a clean white shirt (Van Horn and Schaffner 2003:598).

The second question I pondered was: Why was bleach used predominantly at the Whaley House during the years between 1937 and 1953 and not before? Were there not linens and shirts to whiten and a household to be sanitized? To try to answer this question, I looked at both the history and advertising messages about bleach to get an idea of what was going on at that time.

**THE HISTORY OF BLEACH**

Liquid bleach (sodium hypochlorite) was developed in stages starting in the eighteenth century. Scientist Claude Berthollet discovered that it was useful for bleaching clothing in 1785 (Le Grand 1976: 229-238). Later, in 1820, chemist Antoine-Germain Labarraque recognized its utility for disinfecting surfaces and purifying water. It became a useful tool for maintaining public health (Myers 2007:230-231).

In 1865, Louis Pasteur discovered that micro-organisms were the source of food and beverage contamination, and soon postulated the germ theory, the idea that pathogens or germs cause diseases in living organisms (Tomes 1998:96). However, convincing the public that disease was caused by something you could not see or smell was a difficult sell. Most Americans in the nineteenth century held onto the idea that foul air or “miasma” was the source of illness (Hoy 1995:85-86). Miasma could be detected by its foul smell, such as rotting meat. Smell had long been an omen for disease dating back to the Medieval period during the time.
Europe was experiencing cases of black death, during biblical times, and even before (Dreyfus 1911:338-343). By the turn of the twentieth century, germ theory and pasteurization were, for the most part, accepted by the scientific community, but the public had its doubts and held onto several misconceptions (Tomes 1998:148). For example, many people would not buy pasteurized milk because it was thought that the process stripped milk of nutritional value and taste (Centers for Disease Control 1999).

Selling bleach would be equally challenging. Clorox had some success selling its product to institutions and laundries, but the real challenge was convincing housewives that it was something necessary for the home. In 1913, the small start-up company was nearly bankrupt. Co-owner Annie Murray began giving away Clorox and convincing housewives one by one of its effectiveness (Clorox Company 2020b). In 1914, Clorox sales grossed a paltry $7,996 (Clorox Company 2019). By 1957, sales of Clorox bleach alone reached $40 million, representing almost half of all bleach sales in the U.S. That same year, the company spent $3.7 million on advertising alone. Other brands such as Fleecy White and White Magic held only a fraction of the market and soon closed their doors (U.S. Federal Trade Commission 1972:114, 442). Today, Clorox is a $6 billion dollar industry (Clorox Company 2019; Figure 2). The upward trajectory of bleach consumption can be understood by looking at what American consumers were doing when sales increased during the early to mid-twentieth century. It is also helpful to use a theoretical framework for analysis, such as consumer behavior theory.

![Clorox Sales](image)

*Figure 2. Clorox sales from 1900 to 1960 (yellow highlighting represents 1937-1953; data from some years not available have been estimated) (Clorox 2019, 2020b; U.S. Federal Trade Commission 1972:114, 442).*

In 1917, few people owned a radio. Most radios were made at home using simple materials, and there were no radio stations and no advertising. By 1930, about 40 percent of Americans owned a radio, and most stations included advertising in their broadcasts, many of which were cleaning and hygiene products such as soap (Hoy 1995:148). In 1940, radio ownership jumped to 82 percent of American households, and expenditures on advertising reached more than $215 million (Figures 3 and 4). The Whaley household did not yet own a radio in 1930, but it was likely that the household owned one shortly afterwards, as most Americans (95 percent) owned one by 1950 (Scott 2008; U.S. Census Bureau 1930).
Around the turn of the twentieth century, there were several magazines designed specifically for women, which also attracted advertisers of home products (Figure 5). *Good Housekeeping*, for example, was first published in 1885. By 1900, readership hovered around 25,000. By 1911, the number soared to
more than 300,000 readers. In 1930, subscriptions reached the one million mark, and by 1966, there were 5.5 million subscribers. Other magazines had similar trajectories. *Ladies Home Journal*, established in 1883, had early success, reaching one million readers by 1889. By the mid-1920s, subscribers were more than two million, and by 1955, readership had reached 11 million. The journal was especially focused on paid advertising (Lueck 1995:123-128, 172-178).

Several marketing campaigns for bleach were launched in the 1920s. Clorox, Purex, White Magic, and other brands carefully crafted a series of marketing tactics focused on the white middle-class American housewife to sell their product. Advertising sources included radio and magazine ads, billboards, and appearances at state fairs and expositions, all of which the middle-class women in the first half of the twentieth century would have had ample exposure to (Hoy 1995:148).

**METHODS AND RESULTS**

Through the lens of consumer behavior theory, it is possible to identify some of the themes and tactics used in advertising. One such tactic is that of explicit promises (rational appeals) (Solomon 2011:283-284). Promises in bleach advertising included: your linens will smell clean; it is hygienic; it whitens; it will make your household more efficient; or your kitchen will be germ-free.

Advertising also used an emotional appeal tactic to convince the target market. The emotional appeal is an implicit technique that exploits people’s needs and fears. Emotional appeals can include the need for more leisure time, to feel pretty and fashionable, and for the love of family. For example, one advertisement read, “New! Slenderized bottle with easy-off cap” which could imply that a slim bleach bottle is a fashionable choice, and that “new” and “easy” are desirable characteristics (*Life Magazine* 1941:99).

Examples of fear appeals include claims that your kitchen will have germs and your family will sleep on unhygienic linens. If you do not use this product, you will lose money and your linens will be ruined (Solomon 2011:285-287). During WWII, one advertisement suggested that purchasing Clorox was a way to demonstrate patriotism, claiming that “Your health – everybody’s health – is an important factor in America’s
tremendous production program. You can help protect health by making laundry Clorox Clean” (Life Magazine 1944:88).

Modern consumers cannot resist the lure of brand marketing. The brand is not only the name of the product, it is the essence or overall image or feeling of a company or product. It is the colors, images and videos, slogans, and taglines used in the advertising. It also includes the personality of its leader, its workers, and the look of the building (think Apple or Google). Marketing is the mode used to convey the brand image, which includes print ads, television commercials, brochures, and social media posts (such as Instagram). Marketers use tactics designed to encourage consumers to buy (Perrey and Spillecke 2011:6-13; Solomon 2011:274-275).

Brands are considered to have a “personality” and consumers form a relationship with them (Holt 2004:15; Manning 2010:33-49). Corporations spend billions of dollars to craft the perfect message and brand personality to lure their target markets. American consumers buy expensive shoes, clothing, bottled drinks, bottled water, surfboards, and any number of products based entirely on brand personality and its symbolism. Home improvement shows sponsored by brand name home improvement centers convince us that our homes are not good enough. Almost everything is subject to brand marketing: bicycles, fruit, hospitals, parks, restaurants, pets, and even our own lives. The simple bleach advertisement and others like it lit the spark that led to the consumerism dominating American life. Social media adds to the consumption wildfire. It seduces consumers to spend more on nonessential goods and services. The side effect of this consumption is an enormous amount of waste entering the landfill (Environmental Protection Agency 2013), which will eventually become the archaeological record.

To truly grasp the power of bleach marketing requires an understanding of symbolism and how it is used as a tactic. The science of semiotics, or signs and symbols, explores how the human brain processes the abstract. Semiotics can help describe how spoken, written, and visual language creates meaning. One of the seminal researchers of semiotics was linguist Ferdinand de Saussure, who postulated that a word (a signifier) is meaningless and arbitrary until it is processed in the brain and added to a concept (the signified). It then becomes whole and meaningful (a sign). Put another way, a written or spoken word is an empty shell; it is meaningless until the associated concept is paired with it (Chandler 2007:13; de Saussure 1966:66-68). Similarly, pairing of words and concepts to create symbolism can be seen in advertising.

Many consumer products are merely utilitarian until marketers employ a tactic called “conditioned product associations”; that is, to pair a set of key words, images, and even sounds (e.g., jingles, theme songs, tones) with the product (Solomon 2011:98). A bottle of bleach did not intrinsically represent lifestyle. By continually pairing the images of attractive, happy women and their adoring families, along with the descriptions, promises, and images of the product, the collective consciousness of consumers began to associate the product with a symbolic lifestyle. The implicit message of marketing tactics was that by using the product, one could become a happy, smart, efficient, attractive housewife who is loved by her family.

Another aspect of semiotics useful in analyzing bleach brand marketing is what Claude Levi-Strauss, French anthropologist and ethnologist, referred to as the “floating signifier.” A product such as a bottle of bleach begins its life without any real meaning, as a floating signifier waiting to be imbued with it. A floating signifier can mean anything to any number of people. Within the context of advertising, symbolism is built up around the product, and the continuous association of bleach with cleanliness, beauty, love, patriotism, and efficiency, transformed it into a collective symbol of these concepts (Mumby 2018:389).

DISCUSSION AND FUTURE CONSIDERATIONS

Bleach consumption at the Whaley House took place between 1937 and 1953, at the time when Lillian Whaley and Mabel and Fred James lived in the home. As professional workers, they would have been expected to adhere to the dress code for clerical workers of the time, which would have included wearing clean white shirts. The upward trajectory of bleach consumption at the Whaley House correlates to other
trends of the time, such as a higher rate of radio ownership, an increase in magazine subscriptions, and an increase in advertising expenditures.

By looking at the history of bleach brand marketing, advertising, and sales, the power of marketing becomes apparent. Pre- and post-war consumers processed symbolic information from carefully crafted words in advertisements and made rational and emotional decisions to purchase products, just as we do today. Moving into 2020 and beyond, there is a need to look at how marketing influences consumption. The products we are convinced to buy today will become the archaeological record of the future.

REFERENCES CITED

Centers for Disease Control and Prevention

Chandler, Daniel

Clorox Company

Collins, Katherine L.

de Sausssure, Ferdinand

Dreyfus, William

Environmental Protection Agency

Holt, Douglas B.

Hoy, Suellen

Le Grand, H. E.

Life Magazine

Lueck, Therese

Mallios, Seth, Hillary Sweeney, David Caterino, Jaime Lennox, Destiny Larberg, Scott Mattingly, and David Lewis

Manning, Paul

Mumby, Dennis K., and Timothy R. Kuhn

Myers, Richard L.
2007  The 100 Most Important Chemical Compounds: A Reference Guide. ABC-CLIO, Santa Barbara, California.

Perrey, Jesko, and Dennis Spillecke

Scott, Carole

Solomon, Michael R.

Toulouse, Julian H.

Tomes, Nancy

U.S. Census Bureau

U.S. City Directories

U.S. Federal Trade Commission

Van Horn, Carl E., and Herbert A. Schaffner (editors)
2003  Work in America: M-Z. ABC-CLIO, Santa Barbara, California.