Using Digital Tools to Work Around the Canon

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A tiny percentage of today's design students will create iconic, enduring objects that find their way into museum collections and textbooks. The rest will work to change the world by introducing improved medical equipment, responsibly manufactured sneakers, and better birthday presents for your dad. This work will be forgotten by tomorrow's design historians, as so many of the humble, utilitarian designs of the last 100 years have been. This is as it should be; designers for industry sign up for a life of productive anonymity. But design history, as taught today, is not as useful to young designers as it could (and should) be. Focusing disproportionately on luxury objects and the renown of a designer doesn't do much to explain why we need design in our world, or help students find ways to do it better. No amount of statement teakettles, sculptural chairs, or limited production sports cars improves our understanding of the complexities of addressing user limitations and needs.

An object's inclusion in a textbook is usually linked to its existence in high-resolution studio photographs and affordable image permission rights, often provided by museums and archives. As a result, items used to illustrate design history are limited to these sources, and this limitation is self-perpetuating. Understandably, museum collections don't tend to include everyday objects; a paying public has little interest in can openers, prosthetics, or deodorant bottles. There are scant sources for studio photographs of vintage utilitarian objects. The existing equation helps prevent the story of design from being told by its true participants, and constrains the objects available to the small number that attain celebrity status and make it into the canon. This fixed body of objects tells a restricted version of the narrative.

Traditionally, there have not been options for learning or teaching the history of design in a way that gets past the limitations of the canon; we have been tethered to the available books and collections. With the maturing of the Internet, however, we are now able to not only work past those limitations, but even accelerate the change with some intentional use of digital resources. We can harness existing tools to do better work and broaden the narrative. We can also develop new tools to help historians and teachers add more layers of information and interpretation to the existing narrative about how design happened in the past and who was involved.

The Internet offers volumes of information, including primary source documents, images, advertisements, and patents, allowing us to establish new entry points into learning about objects. By harnessing non-traditional research tools, we can tailor traditional narratives to better suit an audience, however specialized its interests. On-line resources are not vetted by professional editors or curators who confirm their reputations with accuracy and careful research. The challenge in using the Internet successfully is finding (and teaching) ways to produce reliable, truthful, complete results. Each on-line resource has advantages and disadvantages making it useful, but unreliable when used in isolation as a

research tool. Using web resources as a network of cross-linked tools groups their strengths to work past individual weaknesses. They are transformed from a mere curiosity to a groundbreaking resource.

Working from Images

Image use is central in the investigation and discussion of design. The role of images in research has changed dramatically since the advent of the Internet. Historically, an image was used as an attachment, an illustration. We worked with information, and then included the image to explain or clarify. Today it is more common for an image to be the first contact point for an object. Any information, if it is lucky enough to stay attached, arrives later in the discovery process. Finding an image has never been easier, but finding accurate information about an image has never been more difficult. Digital images get quickly separated from the basic information we need to use the image in any meaningful way (date, maker, location, materials, ownership). Social media encourages the constant re-posting of images, making original sources difficult to locate. When Google Images was launched in 2001, it couldn't begin to compete with any serious library collection. Today there are so many billions of images it seems impossible to stay focused on a search without straying into related and enticing new territory. You go looking for an image of the Villa Savoye and wind up lost in the world of Lego Architecture kits. Images on the Internet are frequently (usually?) mislabeled. Inaccurate tags and misattributions are reasons to be mistrustful of on-line images, but hardly reason to discount them.

A reverse image search (which Google added to its tool box in 2011) is an effective way to find reliable information about an image, and locate its original source. This is especially useful for objects in museums. Many museum collections are viewable online, but the images do not come up in basic Google image searches. A seemingly random post on Pinterest may not lead you any farther than the first person who "pinned" it to explain their bathroom redecoration goals or the vibe of their upcoming wedding. But if you want to know about the object, a reverse image search will lead you back to that source information. Image-first browsing helps locate better pictures of designs you already know about, discover new information sources, and find related images. It also leads to new things you didn't already know about. Searching for "classic rotary phone" images brings up the expected, canonical Henry Dreyfuss designed 1949 Western Electric Model 500 telephone, a stellar example of good design work producing enduring solutions. It also brings up the less expected but still canonical Western Electric 1974 Sculptura phone (nicknamed "the doughnut"), a stellar example of design reflecting the interests of the times. But this image search succeeds where museum collection or textbook cannot because it also brings up the 1979 Iskra phone from Yugoslavia, the 1980s Telkom phone from Poland, and any number of other examples of how designs change over time, with geography, politics, material innovation, and fashion all clearly evident.

Learning from Amateurs and Commerce

Internet image collections provide a quick way to harness the knowledge of both enthusiasts and commerce. Auction house websites feature search results with accurate descriptive information, reliable historical context, and provenance data that can put an object into context, connecting it with a user. The sheer volume of archived auctions offers lesser-known work by famous designers as well as familiar work by less famous designers. Most auction houses use professional photography, and they tend to be more generous with image permissions than non-commercial institutions. User-generated content sites like Flickr give the obsessive collector an audience. As a result, they also give the researcher some amazing ways to expand an investigation. Search features on image-posting platforms are clumsy, and user-generated tags often defy logic. But the breadth of images is astounding. A search for "1970s hairdryers" on Flickr turns up a remarkable variety of examples as well as vintage ads, fashion spreads, instruction manuals, pictures of salons, and an immediate understanding of the variety of users, lifestyles, and hair problems we were dealing with at the time.

As with Flickr, Pinterest offers a host of frustrations that, when conquered, produce interesting and useful results. There is no authority to a Pinterest post, and the endless clicking back through previous posts of the same image will raise your blood pressure. If you want to know more about lipstick cases from the 1950s, though, there will be a collector of vintage cosmetics with images that satisfy your curiosity and lead you down new avenues of inquiry. The history of the felt-tipped pen may be best encountered through vintage office supply catalogs, and someone on Pinterest has already combed through them for you, their enthusiasm compelling them to include vintage ads and maybe even cross-linked photos of their own collection.

Academia has not traditionally valued the authority of the amateur. As the Internet allows us ways to explore our peculiar interests and share them with others, the hyper-focused, specific authority of many amateurs should not be overlooked. If you want to see the history of the high-end plastic designer chair, MOMA can help you. But if you want to know the history of the tragically ubiquitous four-dollar mono-bloc chair owned by nearly everyone globally, it will not. For that you need the help of a fellow named Bryan Ropar, who owns one of every model Grosfillex chair ever made; his YouTube videos and Flickr photographs are more useful than anything that has been (or will ever get) published in a book or would ever be included in a museum collection.[1] eBay offers a global database of nearly everything ever industrially produced. By combining the best (and sometimes worst) of user-created content, specific targeted knowledge of the amateur, and commerce, eBay can be a rewarding research tool. Because pictures are used to sell an item, they show its condition clearly, and that clarity frequently offers exciting bonuses. The original packaging for a coffee maker might show pictures of intended users, indicate the regions of availability by offering information in multiple languages, or include an original price tag. Close-up views show construction methods and manufacturing. The MOMA's collection includes a beautiful 1956 Braun SK4 record player. It is a sleek and daringly futuristic example of German Rationalism in gleaming white metal and shiny acrylic. But if you want to see more than merely the exterior surfaces, eBay is a better resource. To sell an SK4 on eBay, a seller will remove the bottom to show that all the inside components are intact. This provides a view of the vacuum tubes and wiring, offering a contrast to the sleek exterior. We can also appreciate some smart design decisions because the main housing is made of one simple piece of bent sheet with convenient attachment points for all of the internal engineering cleverly stamped in.

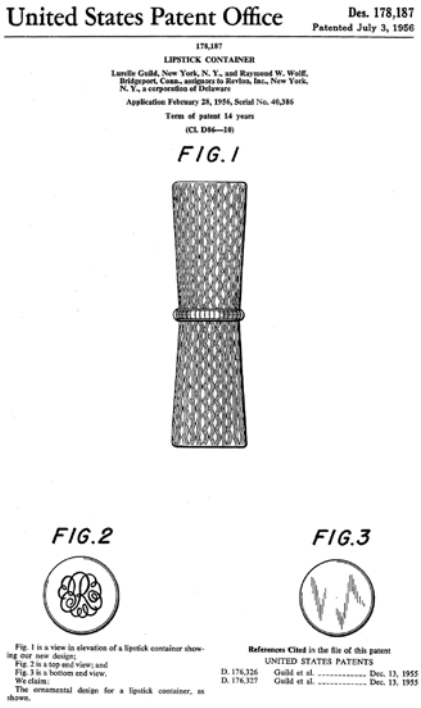
eBay descriptions are also useful. They tell us about the use that objects have endured. We learn about a design's flaws (cracked plastic, missing knobs, even chewed doll fingers). This information tells us how design and manufacturing failed, and how later versions might have been altered. By only considering pristine museum quality objects we see only the designer's intent, not how well or poorly that intent aged with the use and abuse it was meant to survive.

Using Video

YouTube was launched in 2005 to create a platform for sharing user-created videos. Kitten lovers around the world have been enjoying it ever since. YouTube now claims over a billion users, with 60 hours of content uploaded every minute.[2] For whatever incomprehensible reasons, people have included close-ups of a working escapement mechanism from a 1850s Chauncey Jerome mantle clock,[3] a 1940s ad for Victor portable radios,[4] 1970s Woodsy the Owl public service announcements,[5] an original 1984 ad for the Apple IIc,[6] and even 1959's "Do it Yourself in Rubber" instructional on how to decorate your home with newly available latex sheet foam.[7] These may seem random and inconsequential, but they offer immediate insight into the world designers were responding to. Reliving firsthand the cringe-inducing but inextricable sexism of 1956, when Charles and Ray Eames appeared on Arlene Frances's Home show brings mid-century design right into today's ongoing conversations about gender bias, women in design, and the challenges of attribution in teamwork.[8]

Vintage film can help clarify any number of research conundrums. Many utilitarian objects were

created to solve problems that, when seen in the rear-view mirror, don't make a lot of sense. Lurelle Guild designed a series of lipstick cases for Revlon in 1955 (image 1). The patent drawings (image 2) show the designs in the most brutal way, making them seem generic and mediocre. YouTube allows us to watch a vintage television ads and learn that the design separated the lipstick from the case, and saved money by offering refills.[9] The line was marketed to women, but also to husbands and children as an affordable but seemingly luxurious gift. Without the TV ad, the design is easy to write off as mere decoration. With the added information, the design transcends mere aesthetics to address user needs, perceived value, material use, marketing, and problem solving. Seeing the design in action gives it a life and sophistication not evident in the brutality of an elevation-view patent drawing.



United States Patent Office

Des. 178,187
Patented July 3, 1956

178,187

LIPSTICK CONTAINER

Lurelle Guild, New York, N. Y., and Raymond W. Wolf, Bridgeport, Conn., assignors to Revlon, Inc., New York, N. Y., a corporation of Delaware

Application February 28, 1956, Serial No. 46,386

Term of patent 14 years

(Cl. D86—10)

FIG. 1

FIG. 2

FIG. 3

Fig. 1 is a view in elevation of a lipstick container showing our new design;
Fig. 2 is a top end view; and
Fig. 3 is a bottom end view.
We claim:
The ornamental design for a lipstick container, as shown.

References Cited in the file of this patent
UNITED STATES PATENTS

D. 176,326 Guild et al. ---------- Dec. 13, 1955
D. 176,327 Guild et al. ---------- Dec. 13, 1955

Image 1: Futurama lipstick case, collection of the author

Image 2: Futurama patent, 1956, United States Patent Office

Print Ads Tell Stories

Vintage video is not the only easy source for bringing the user back into the equation. Old print ads were created to communicate innovation to consumers in targeted ways that now offer valuable insights to any design historian. Ads are useful if even "merely" as a way to appreciate how advances in typesetting, pigment manufacturing, or color photography affected graphic design. Revlon's Futurama lipstick was well advertised in print (image 3). Through these ads we can celebrate how "lustrous" and "dewy" our lips will appear while also appreciating 1950s glossy color printing. An object in a museum is a sculpture with implied utility. Print ads show us what a finished design looked like while also explaining the intended use.

A 1947 ad for a new metal desktop tape dispenser (image 4) lets us appreciate it aesthetically (in a fascinating image that uses a combination of photography, collage, and rendering to arrive at something printable and descriptive). We can also learn that the world did not yet fully appreciate the problems this device would solve. It is billed as a "handy new gift for Scotch tape fans" including homemakers, handymen, presidents and office boys, teachers, and mothers. It can be used "with one hand!" (they were intentionally heavy) which makes the period between the introduction of cellulose tape in 1925 and this 1947 advertisement seem like a gift-wrapping Dark Ages. We can also understand the business side of design from vintage ads. The Scotch Desk Dispenser cost $1.89 in 1947 and came with a roll of tape, in a plaid gift box. The Futurama lipstick ads tell us they sold for as little as $1.35 and as much as $37.50, making it a curiously broad intended demographic. These details are not available elsewhere. They may seem small when

considered independently, but they enable us to look at manufactured objects in the world they inhabited, not just in a lighted case. This is an important distinction; it allows us to learn about the people who used objects, the flaws of existing designs, material and manufacturing advances and many more areas of inquiry that bring designs to life.

Image 3: 1957 advertisement for Futurama lipstick for Revlon.

Image 4: 1947 advertisement for DD-1 desk dispenser for Scotch brand cellulose tape.

Was it Really Affordable?

Purchase price is rarely considered as part of design history. It is easy to find textbooks that tell us an 1869 Thonet #14 Consumer Chair cost less than a bottle of wine, which conveys an impression of affordability. That folklore doesn't really give us the information we need to understand who could buy the chair and where it would be used; there is a wide range of prices even in wine bottles. And this is a rare example of cost being recorded at all. We assume that people could afford the objects we see in books and museums when in fact they were largely out-of-reach for most consumers. Iconic designs now live completely separated from any understanding of their original price tag.

Is it useful to design historians to know that a 1963 Barbie Fashion Queen doll is worth three hundred dollars today? To learn about the world this doll was designed for, we need to know what it cost new, in 1963. Vintage ads and on-line mail order catalogs allow us to do so.[10] When we discover that this particular Barbie cost just three dollars and sixty nine cents, we are closer to knowing who would own it, but there is still one huge hurdle to get over. Four dollars seems cheap for a toy because we are understanding the price using today's dollar. Online inflation calculators offer a truer perspective by telling us that today the same doll would cost around thirty dollars, making it an expensive toy.[11] Using a few internet resources together quickly connects value and cost, transforming our understanding of a product and removing many of the barriers that time and distance erected.

Patent Searches

The best digital tool for expanding the reach of design historians has to be the availability of online patent searches. Google introduced its search engine for US patents in 2006. Since then it has expanded to include a number of other databases (Germany, Canada, China, Japan, Korea, and the European Patent Office) with more promised as other countries digitize their patent archives. Patent systems were created to protect and disseminate innovation, and their use has been an integral part of the design process since the dawn of industrialization; the two have matured together. The first US patent was granted in 1790, linking innovation to record keeping in a way that now gives us access to over 8 million cross-linked primary source US patent records. From any computer, at any time. The implications of this availability have changed how

research can happen, and will continue to enable new kinds of research and new conversations. We can now consider in new ways which designs and innovations matter, how we assign credit for a design, and how innovations are linked, influencing later work.

One example of patents allowing (or forcing) a reevaluation is the Waring blender. Waring Commercial Products's company history tells us that it began in 1937 when the popular band leader Fred Waring introduced the world to the kitchen blender.[12] Design historians add more information to that story by giving Peter Muller-Munk credit for actually designing the blender. But US design patent #104,289-S, filed in 1937, tells us that Frederick J. Osius invented and patented the device. Waring used his fame as a popular musician (and his collegiate engineering education) to perfect and market the device. Muller-Munk created the beautiful "waterfall" housing that transformed the device from mechanism to appliance. Part of what makes the blender work is the interior clover-leaf shape of the pitcher, which creates the vortex necessary to get everything evenly chopped. Much of what we think of as Muller-Munk's design is in fact Osius's engineering. The canon of design history has had room only for Muller-Munk, but we now have the tools to reconsider the object, reposition it (and its creators), and maybe even reconsider the boundaries between design and engineering.

Patents allow us to reassess designs already in the canon. They also empower us to disregard the canon altogether and use any patented object to investigate a trend, identify a pattern, or explore a technology with the accuracy of primary source documents. We can identify the anonymous work of known designers like Dave Chapman at Montgomery Ward or Charles Harrison at Sears, who worked under a corporate umbrella that wasn't in the business of promoting individual designers. We can identify unknown designers of iconic (but not "important") designs. Time and new generations of researchers will discover just how far down how many different paths we can get with this powerful resource.

Combining Tools

The real magic happens when all of these digital tools are combined. Using them in concert allows easy access to people, innovation, and history that was impossible to identify before, and has been overlooked or forgotten in traditional information sources. That cast metal tape dispenser (image 5) in the 1947 3M print ad is ubiquitous enough to be familiar to almost everyone. It is a classic example of American streamline design of the late 1930s and early 1940s. It is not familiar from museum collections or coffee table books, but from everyday life. It is on your grandparent's counter top, your tax assessor's desk, and in every junk shop in the country. A simple Google image search using "metal streamline tape dispenser" returns hundreds of pictures of it, and reveals that it has an amusing nickname. An eBay search for "whale tail tape dispenser" offers any number of them, in two sizes and a variety of colors. One eBay seller posted particularly good images, with the interior label clearly visible: Scotch Desk Dispenser, Minnesota Mining & Mfg. Co., U.S. Patent 2,221,213 U.S. Design Patent 127,388. A Google patent search finds both patents, and the design history of this overlooked object is clear in under 5 minutes.

Image 5: 3M DD-1 desk dispenser, collection of the author.

The utility patent is from 1936 and shows a functional tape dispenser that ignored aesthetics. The design patent from 1941 shows the same basic mechanism now housed in a beautifully considered shell, with Jean Otis Reinecke listed as the designer. Because digital patent searches are cross-linked, a click on his name takes us to other patents he was granted. It turns out that, in addition to the Whale Tail, he designed the first low-cost stamped sheet metal tape dispensers (1939 U.S. Design Patent #116,599, 1951 U.S. Design Patent #170,429), the iconic and omnipresent plastic dispenser (1939 U.S. Design Patent #118,629), dispensers with levers to spit out a controlled amount of tape (1936 U.S. Patent #2,221,213, 1941 U.S. Design Patent #126,732) and the unavoidable 1959 plastic desk dispenser that is so ubiquitous it has become part of our collective subconscious (U.S. Design Patent #190,781). In short, Jean Otis Reinecke, who is not included in any important design history books, was clearly the king of tape dispenser design. He created a number of designs that are as central to the 20th century experience as anything Henry Dreyfuss or Raymond Loewy ever designed. Reinecke also patented designs for toasters, juicers, radios, can openers, lawn sprinklers, cameras, refrigerators, corncob holders, and more. Armed with his name, we can now find other shards of information about Reinecke. We may not be able to reconstruct an entire archive of information or rebuild his entire career using these quick tools. But in a short time, with little effort, we can find an astounding amount of useful and accurate information that, a mere ten years ago, would not have been available or connectable.

Reinecke is hardly an unknown designer. There is a brief biography on the IDSA (Industrial Design Society of America) website.[13] He was president of its predecessor the SID (Society of Industrial Designers), and inducted into the IDSA Academy of Fellows in 1952. His work is included in a glancing way number of overviews of design. His career illustrates the birth of the profession of industrial design, when engineering and manufacturing were combined and improved with added considerations like aesthetics, ergonomics, an improved understanding of the user, and marketing. But, he is not considered a major presence in the canon of design history. If design success is measured by the number of people whose lives are improved through a designer's work, surely Reinecke is a major success. Yet without this way of working backwards from object to designer, we have little to consider him with.

Along this discovery route, all sorts of other avenues of inquiry open up. How and why did the Minnesota Mining & Manufacturing Co venture from mineral production into tape manufacturing, reinventing itself as 3M? When did 3M start making tape in two sizes, requiring two versions of the tape dispenser? How do the colors offered reflect ideas about decor? Was Reinecke an employee of 3M or did he work as a consultant designer? Did he work for a flat fee or a royalty? If the bits of convenient biographical information are true and he really did employ a staff of over 300, did he even design the tape dispensers, or did a still unnamed underling?

Patent searches are often inconclusive, and create as many new questions as they manage to answer. Patent archives are scanned using OCR (Optical Character Recognition) software that sometimes invents new ways of spelling things. Reinecke has patents as himself, but also as Reineeke and Iteinecke. As Jean O. Reinecke, J.O. Reinecke, and J.o. Reinecke. The cross-linking between patents is not completely reliable; the patent for Reinecke's 1961 redesign is a linking conundrum. It does not appear at all in the list of his patents, even though the name on the patent is correct. Clicking the link on his name in this patent does bring you to his other patents, but you can't go in the reverse direction. This one patent is floating alone in the database, unfindable through normal channels. In this case, having the patent number (thanks to another clear eBay auction photo) was the only path to that actual patent. There is a certain amount of sleuthing and tenacity required, but that is always true in research, and it seems a small price to pay for the value of this resource.

Who Gets to Decide?

Some might argue that "lesser" designs should be forgotten, leaving the more elevated and pure examples of good design to represent our times. Would it be such a tragedy if coffee percolators, picture frames, and cafeteria dishes were not treasured a century after their creation? The danger in this reasoning is that there is no definition of good design that is time-resistant and universal. There are too many factors in the equation to arrive at anything reliable. Purging the majority of manufactured objects to perpetuate a selected few is problematic because it leaves

the history writing and the taste making in the same hands. It may well be that objects which were (or are) examples of what someone considers bad taste have more to teach us about their times and might deserve a better final resting place than the junk heap.

Design history is full of arguments about how good design should be defined and determined. One such argument is found in What is Modern Design, written in 1950 by Edgar Kaufmann, Jr. for the Museum of Modern Art where he was Director of Industrial Design. An illustration from that book (image 6) contrasts a drawing of an airplane with a drawing of Jean Reinecke's 1941 tape dispenser (although no credit is given for either design). The caption states that the engineered streamlining of the airplane is "naïvely echoed on the Scotch-tape dispenser." The section attached to the illustration is titled "Streamlining is not good design." There you have it. The MOMA tells us that Jean Reinecke's work is not good design. Kaufmann goes on to delineate "twelve precepts of modern design" to help us avoid the pitfalls of bad taste. He proclaims that modern design should be practical, useful, express the spirit of the time, investigate new materials, improve the use of existing materials, relate form to function in ways that visually explain instead of confuse, use materials honestly (not in imitation of other materials), celebrate mass production by letting manufacturing methods determine aesthetics, be simple, and serve the widest public possible by being affordable to all.

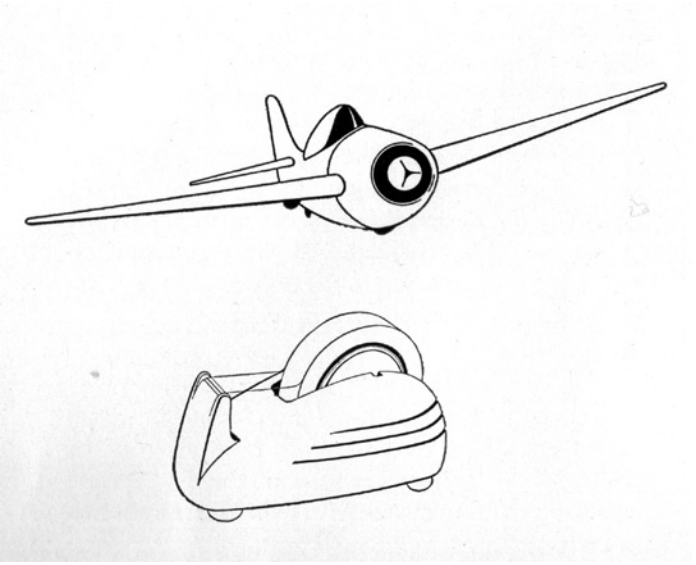


Image 6: Edgar Kaufmann, jr., *What Is Modern Design?*, 1950

With a little distance from 1950 and from the prejudices of the author, every one of those precepts is irrefutably true for Reinecke's tape dispenser. It was inexpensive, available to all. It used cast iron, an old material and manufacturing technique, to create forms that were contemporary instead of mimicking a previous era. It celebrated the arrival of new materials by getting cellophane adhesive tape into every home. Its form and material choice were derived from analysis of how and where it would be used. Its use is obvious without instruction, and all functioning parts are visible and expressed visually, creating the form and the aesthetic. In addition, the normal life-cycle of a designed object is short because materials, techniques, demand, and style change frequently. When Kaufmann was critiquing it, this tape dispenser was already a decade old and had earned its slightly-out-of-fashion status; expecting it to remain "modern" for that long is unfair. It continued in manufacture and in use for nearly a decade after Kaufmann condemned it, which ought to count for something when gauging success.

By selecting only the parts of our design and manufacturing efforts that reflect the image we want to see when we look at our past, we craft an intentional, artificial narrative about design progress. We may remove objects we consider ugly or cheap or in bad taste or too revealing about our real interests and our baser instincts. These removed and forgotten objects may well offer a truer portrait of who we were and who we are. If historians want to find greater diversity of race, gender, income level, or even merely of interests, it is all available in the tape

dispensers, drinking glasses and patio furniture that live on in non-traditional sources, outside of the canonical archives. The research tools we now have available are making it possible, even easy, to learn about less celebrated objects and incorporate them into our narratives, our publications, and our teaching.

One way to broaden the canon is to continue working on inclusion. There are so many female designers left to learn about and get woven back in to the story. There are new ways to consider and discuss colonialism and find better ways to include racial diversity in the story. We need to continue these efforts and continue improving the tools we have available for communicating the story of design history. Today's students of design need - and want - to know more about the figures lurking in the shadows. We can also identify new narratives, however specific and tailored they may be, and support those narratives with a rich inter-connected group of reliable primary source documents. By focusing on an object first and what we can learn about manufacturing techniques, material advances, user demands, trade restrictions, legal constraints and then finally, last, designers, we don't need to expand the canon. We can work around it.

1. Grosfillex Bryan Ropar
2. Source: https://www.youtube.com/yt/about/press/
3. https://www.youtube.com/watch?v=iYwpjE9APHQ&list=PL0E333130D122304D
4. https://www.youtube.com/watch?v=7F-qlN8Wehw
5. https://www.youtube.com/watch?v=gZB7gSQRIuM
6. https://www.youtube.com/watch?v=ZZ6u9lvnQ-s&list=PL5ABDBBC1BB1E9181
7. https://www.youtube.com/watch?v=WVfwoduCays&list=PLEANvcdpJW0muKgJQ9aTViqOXJm1opAOU
8. https://www.youtube.com/watch?v=zfzLzOl795E&list=PL678758830FA293A6
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10. http://www.wishbookweb.com/FB/1964_Sears_Christmas_Book/#21/z
11. https://westegg.com/inflation/
12. http://www.waringcommercialproducts.com/content.php?page=history
13. http://www.idsa.org/content/jean-otis-reinecke-fidsa