Domestic utility and useful lines: Jean-Charles Krafft’s and Thomas Hope’s outlines

Alexis H. Cohen

The elegance of the outline, remarkable in these vases, the character of their distinguishing simplicity, but, above all, the genius, which must be supposed in the artists, who invented them and that strange variety of contours, soon create a desire of knowing the time, and place, where they were made, as well as those industrious people, to whom we are indebted for these masterpieces.

... in the art of vase making, as well as in their architecture, [the ancients] never sought after the agreeable [sic] prior to the useful; and it is not to be doubted ... that the different uses for which their vases were design’d produced that variety in the shapes, they have given them: from whence it must be concluded, that, it is only in their end or purpose itself, that we must seek after the reason of these differences, which being always calculated to answer their object, can never fail of having some sign to make themselves known.

Pierre d’Hancarville

Introduction

In the architectural and design publications that helped generate and define Neoclassicism, praise for linearity, lines, outlines, and contour was often accompanied by an equally high regard for utility. Antique works were read via their contours and the simple outlines of sculpture, vases, and red and black figure painting were analyzed through the outline drawing, a graphic idiom praised by contemporary audiences and practitioners as particularly well-suited to the

This paper was originally presented as part of the panel, ‘Buildings and Objects: Baroque, Rococo and Beyond,’ at the Society of Architectural Historians Annual Meeting, Detroit, April 2012. I offer my sincere thanks to the panel chair, Kristel Smentek, and to Anne Puetz for their helpful critiques and comments. I also wish to thank the other panelists for engaging conversations at SAH.

1 Pierre d’Hancarville, Collection of Etruscan, Greek, and Roman Antiquities from the Cabinet of the Hon’ble Wm Hamilton, His Britannick Majesty’s Envoy Extraordinary at the Court of Naples (Naples, 1767), 2: 58-60.
expression of ancient aesthetic values. The outline drawing, which enjoyed widespread popularity c. 1800, mimicked its object of study, offering itself as a visual correlate and empathetic reflector of the newly unearthed ancient works which artists and the general public sought to understand. (Figure 1) George Cumberland, an advocate and theoretician of the outline drawing, suggested that if practiced by ‘the hands of learned draughtsmen,’ outlines could convey the spirit of the ancients, allowing their monuments to ‘reach us uncontaminated and pure.’

Figure 1 Thomas Hope, Sketchbook of Italian buildings and architectural details. c. 1812. SKB122/2. RIBA Library Drawings & Archives Collections.

Given eighteenth-century interest in Greek and Roman antiquity, practitioners of Neoclassicism inevitably wanted to know how ancient buildings and objects were originally used. How did the forms of Greek vases reflect their use? What purpose did different temple rooms serve? Antiquarians such as the self-styled Baron d’Hancarville, most famous for his role in publishing Sir William Hamilton’s first vase collection, thought these questions would lead to a greater understanding of antiquity.

If vases and architectural ruins could be better understood, contemporary audiences also suggested the outline drawing could itself have been an ancient idiom. The artist George Romney wrote of the sculptor John Flaxman’s outline illustrations of Homer’s Odyssey: ‘They are outlines without shadow, but in the style of ancient art. They are simple, grand, and pure … They look as if they have been made in the age when Homer wrote …’ Quoted in William Hayley, The Life of George Romney (London, 1809), 203.

3 George Cumberland, Thoughts on Outline, Sculpture, and the System That Guided the Ancient Artists in Composing Their Figures and Groupes (London, 1796), 17.

understood, then their forms could be viewed with new appreciation of their meaning. Analyses of their use could reveal who the ancients were.

The British sculptor and draughtsman John Flaxman’s oeuvre, particularly his engraved illustrations of Classical texts such as Homer’s *Iliad* and *Odyssey*, as well as his low-relief sculptural and modeling work, have been an important site for scholarly discourses on the nature of the outline drawing and its place within Neoclassicism’s characteristic linearity. In particular, discussions of Flaxman’s work, and its affinity to ancient vase painting, have been central to defining the outline drawing’s status as an idiom primed for the expression of ancient aesthetic values.

The line of the outline drawing, which Cumberland defined as ‘fine, firm, flowing, and faint,’ indeed created an emphatically simple graphic language allied to the neoclassical aesthetic ideals of clarity and purity. It facilitated and expressed the draughtsman’s communion with the beauty of his depicted objects. In addition to their connection to ancient aesthetic ideals, outlines were also, as d’Hancarville’s comments on vases suggest, tied to notions of use as a parallel means of accessing the past. This paper highlights the significance of this discourse for the study of the outline drawing, examining how notions of utility did not simply guide eighteenth-century investigations of antique buildings and objects, but were imbedded in the very lines of one of Neoclassicism’s most iconic forms of representation.

---

5. John Flaxman, *The Odyssey of Homer Engraved by Thomas Piroli From the Compositions of John Flaxman, Sculptor* (Rome, 1793); *The Iliad of Homer Engraved by Thomas Piroli From the Compositions of John Flaxman, Sculptor* (Rome, 1793).


9. Gender identity and eighteenth-century drawing practice is an important topic intersecting with the outline drawing but which is not addressed in this paper. Because the figures discussed here happen all to be men, I have used male pronouns throughout. For studies on women and drawing in the eighteenth century, see for example, Ann Bermingham, “The Aesthetics of Ignorance: The Accomplished Woman in the Culture of Connoisseurship,” *Oxford Art Journal* Vol. 16, No. 2 (1993): 3-20.

10. Notions of use, usefulness, and utility can be differentiated but in the context of this paper I seek to argue that they are inextricably intertwined in neoclassical design practice and discourses precisely because utility was a ubiquitous and fluid Enlightenment value across disciplines. Within Neoclassicism, utility is not only valued as a methodological strategy for accessing information about antiquity, but is also used, in Giovanni Battista Piranesi’s oeuvre, for example, to structure polemical comparisons between Greek and Roman antiquity and as a locus for acts of imaginative reconstruction. Piranesi’s fascination with ancient Roman infrastructure such as aqueducts and sewers highlights his
It is no accident that the outline drawing proliferated at a time when the value of precision was taking root in architecture and the emergent field of archaeology,\textsuperscript{11} and that the fine lines employed in technical drawing were becoming more widespread in practices ranging from manufacturing to the education of military engineers.\textsuperscript{12} In fact, as Dora and Erwin Panofsky noted some time ago, the very origins of the outline drawing can be traced to the use of simple contours in the illustration of early modern scientific treatises.\textsuperscript{13} The outline did not, therefore, only render the utility of ancient things, but also expressed the notion of utility through the potential usefulness of line as such. This paper argues that the outline drawing, in particular its translation into print through etching and engraving, cannot be understood without reference both to the discourses on utility present in architectural and design publications c. 1800 and to eighteenth- and early-nineteenth-century notions of utility that were becoming increasingly important to fields such as political economy and social reform, but which have remained unexamined in relation to neoclassical design theory and practice.

**Krafft and Hope**

Publications by two draughtsmen-designers, Jean-Charles Krafft (1764-1833) and Thomas Hope (1769-1833), explicitly articulated the value of useful buildings and objects in letterpress text and in visual exemplars etched and engraved in outline. Krafft’s *Plans, coupes, élévations des plus belles maisons et des hotels construits à Paris et dans les environs* (*Plans, Forms, Elevations of the Most Remarkable Houses and Hotels Erected in Paris and its Environs*) (Paris, 1801-3)\textsuperscript{14} and Hope’s *Household Furniture and

\textsuperscript{11} In my dissertation, *Lines of Utility: Outlines, Architecture, and Design in Britain c. 1800*, I discuss how notions of archaeological precision in James Stuart’s and Nicholas Revett’s *Antiquities of Athens* (Vol. 1, 1762) provides one point of origin for the outline drawing’s aesthetic identity.


\textsuperscript{14} Jean-Charles Krafft and Nicolas Ransonnette, *Plans, coupes, élévations des plus belles maisons et des hotels construits à Paris et dans les environs* (Paris, 1801-1803). Krafft published this volume with parallel texts in French, German, and English. All subsequent quotations from Krafft are taken directly from the English text. Other translations from French are my own.
*Interior Decoration* (London, 1807), emphasize utility as a criterion for evaluating modern architecture and the objects that furnish its interiors. (Figures 2 and 3)

![Figure 2](image)


In promoting models of contemporary buildings and objects – neoclassical rather than classical design – Krafft’s and Hope’s publications are important for their engagement with ideals beyond those of antique beauty. By addressing the utility of contemporary adaptations of antique models, not the former utility of the

---

remains of antiquity, Krafft’s and Hope’s work illuminates how the outline drawing provided both a means of communing with the ancients and of disseminating information for use by students, craftsmen, amateurs, and potential patrons. Instead of simply documenting ancient objects and their aesthetic essence, the outline drawings of Krafft and Hope offered, at least in theory, a means of making these antique things anew.

Figure 3 Thomas Hope, *Second room containing Greek Vases, Plate IV* From *Household Furniture and Interior Decoration* (London: Printed by T. Bensley for Longman, Hurst, Rees, and Orme, 1807). Courtesy of Bard Graduate Center: Decorative Arts, Design History, Material Culture; New York.

Beyond the realm of architecture and design, utility had tremendous currency in concurrent debates in aesthetics, moral philosophy, political economy,

16 In 1807 Hope also published an essay, “The Utility of the Remains of Antiquity,” in which he argues that antiquity should not be viewed through the lens of its ruinous eighteenth-century state and the cultural value placed upon the ‘old’ at the expense of other perspectives. The status of the old and of the new in Hope’s oeuvre, and in Neoclassicism more broadly, is complex. Hope intended the ancient works in his collection, and the furniture he designed to house it, to be ‘intermixed, collectively, into a more harmonious, more consistent, and more instructive whole’ signaling his interest in the potential functionality of ancient design. But compared to someone like Piranesi, Hope arguably did not have an archaeological interest in the former uses of ancient works. (*The Director II* (1807): 198-205.)
and social reform. Utility was used to define questions of value in these disciplines and its ubiquity reflected a widespread desire to improve the human condition by putting to use new knowledge generated through the intellectual exploration characteristic of the Enlightenment. Of particular concern to nations engaged in competitive industrial development (Britain and France being a central feuding pair), was the desire to use new knowledge for the improvement of national industries, and in turn, to achieve competitive economic advantages over neighbours.

In addition to these ideals of useful knowledge, figures such as David Hume, Adam Smith, Jeremy Bentham, and later John Stuart Mill viewed utility as a measure of value that could be applied broadly to thinking about aspects of the human condition and human societies: definitions of morality, understandings of economic markets, the principles upon which laws should be made and even how, as articulated in Bentham’s famous felicific calculus, happiness should be defined and measured.\(^\text{17}\)

Bentham’s panopticon is of course the most familiar eighteenth-century architectural expression of this intellectual history. This was a building not only utilitarian in its efficient and economical design and use of human resources but also an architectural proposition in a larger debate about utility and the values that should govern a modern, secular, and rational enlightened society. Utility was not just about the usefulness of things, actions, or practices – things capable of being put to good use – but about how Enlightenment societies conceived of ideals of improvement.

**Krafft’s Domestic Utility**

In *Plans, Forms, Elevations*, Krafft argues that it was only during the reign of Louis XV (1715-1774) that ‘architects began to unite the useful [sic] with the pleasing and to furnish the internal parts of buildings with those conveniencies [sic] of which they had been deprived hitherto.’\(^\text{18}\) He criticizes French architecture produced under Louis XIV because ancient models were adopted without regard for their suitability to the needs of contemporary inhabitants. Krafft argues that seventeenth-century architects modeled their works after the ancients and accordingly thought themselves ‘obliged to sacrifice everything to the external magnificence and

---


\(^{18}\) Krafft, *Plans, Forms, Elevations*, 293.
embellishment of cities. Especially the internal disposition of houses destined for lodging was extremely neglected.’

For Krafft, the domestic sphere, and in particular, the domestic interior was a forum for a designer to exhibit his discerning attitude towards the use of ancient buildings as models. Without abandoning an aesthetic link to classical architecture, designers could use floor plans and domestic amenities such as water-closets to assert architectural values that went beyond an address to the environment in which a house was situated.

Krafft, who worked in partnership with the engraver, Nicholas Ransonnette (1745-1810), used Plans, Forms, Elevations to disseminate to a broad European audience what he argued were the best examples of contemporary French domestic architecture. The buildings Krafft surveys - ‘private buildings, palaces and countryhouses’ by architects such as François-Joseph Bélanger (1744-1818), Claude-Nicolas Ledoux (1736-1806), and Jean-Nicolas-Louis Durand (1760-1834) - were all constructed in the last quarter of the eighteenth century, a period in which the values of comfort and luxury are well known to have emerged in association with architecture and its attendant objects. Krafft’s critical engagement with the relationship between classical facades and useful interiors is also contextualized by eighteenth-century debates concerning the architectural expression of social status and function. Complex terms such as convenance and caractère, deployed by theorists at different moments in the history of French classicism, helped articulate the relationship between buildings and the human subject.

Marc Grignon and Juliana Maxim note that convenance ‘refers to a rule whose meaning has oscillated between the respect for decorum, on the one hand, and the suitability of a design to function, on the other.’ Caractère also exhibited similarly complex meanings. Anthony Vidler identifies the concept, absorbed by Ledoux from his teacher Jacques François Blondel, as ‘a social construct, joining decoration to rank and to use.’ In the eighteenth century, the use of a patron’s social and class-identity as a basis for design was accompanied by interest in how a building could function in the service of its patron’s needs. Edward Robert de Zurko suggests that this latter concern became dominant in this period: ‘[i]n the eighteenth and first half of the nineteenth century, many authors on architectural subjects

---

stressed ideas of convenience, fitness or utility. Some of them went so far as to make utility the primary value in architecture.\textsuperscript{23} 

In Jacques François Blondel’s monumental \textit{Architecture Françoise} (published between 1752 and 1756), the teacher and theorist identifies the lack of concern for the functionality of interiors as problematic. He criticizes the architecture of antiquity, writing ‘[e]veryone knows that the buildings of the Greeks and most of those of the Romans, were more commendable for the magnificence of their exteriors than for the commodity of the interiors.’\textsuperscript{24} By contrast, Blondel promotes his age as invested in the functionality of interiors that are designed with a concern for the conveniences they can provide to their users. ‘[F]ifty years ago,’ he continues, ‘… our buildings … offered a variety of exterior decoration which produced beautiful architecture, but the interiors were not habitable … we even had difficulty finding a place for the bed and the principal pieces of furniture since the fireplace occupied most of the room.’\textsuperscript{25} Similarly, Krafft believes that great architecture unites appropriate classical facades with commodious interiors. To promote this lesson, and in keeping with the composition of many architectural pattern books, Krafft also includes a selection of plates providing examples of furniture, or ‘moveables,’ which would be appropriate to set within the buildings he models (figure 4):

‘[a] natural consequence of the better disposition of edifices was the zeal with which in the modern times the architects have applied themselves to improve the internal decorations of rooms. We have therefore thought it convenient to offer to the public likewise some examples of the most usual ornaments of the rooms, particularly of the most beautiful forms of furnitures.’\textsuperscript{26} 

The larger context for Krafft’s interest in the usefulness of domestic interiors, and one that Antoine Picon distinguishes from Blondel’s particular rationalism


\textsuperscript{25} Blondel, \textit{Architecture Françoise}, 1: 21: ‘Il semble même que depuis environ cinquante ans ces derniers ayent à cet égard inventé un art nouveau; tous nos voisins conviennent de ce que j’avance, & ceux qui sont profession de l’Architecture reconnoissent qu’avant ce tems nos édifices en France, à l’imitation de ceux d’Italie, offroient à la vérité une décoratio extérieure où l’on voyoit régner une assez belle Architecture, mais dont les dedans étoient peu logeables, & où il semblait qu’on eut affecté de supprimer la lumière; on avait même de la peine à y trouver la place d’un lit & des principaux meubles, les cheminées occupoient la plus grande partie des pièces, & la petitesse des portes donnòit une foible idée des lieux auxquels elles servoient d’entrée.’  

\textsuperscript{26} Krafft, \textit{Plans, Forms, Elevations}, conclusion, n.p.
and engagement with the relation between interiors and exteriors,\textsuperscript{27} is the shift in French architectural culture and education in the second half of the eighteenth century. This was a period in the Classical tradition when utility became a guiding principle and intellectual by-product tied to the emergence of engineering as a practice distinct from architecture.\textsuperscript{28} Institutions such as the corps of the Ponts et Chaussées, the École des Ponts et Chaussées, and the École Polytechnique applied the concept of utility both to their building projects and to their own role in French society, especially following the French Revolution. Links to these institutions are found throughout Krafft’s oeuvre. He includes plates of houses belonging both to the ‘Institution Polytechnique’\textsuperscript{29} and to Louis Bruyère

\textsuperscript{27} Antoine Picon, \textit{French Architects and Engineers in the Age of Enlightenment} (Cambridge: Cambridge University Press, 1992), 4, 72-78.

\textsuperscript{28} See Picon \textit{French Architects and Engineers} and his, “From ‘Poetry of Art’ to Method.”

\textsuperscript{29} Krafft, \textit{Plans, coupes, elevations}. Explanation of Plate XXXV.
Domestic utility and useful lines

(1758-1831), an engineer of the Ponts et Chaussées,\textsuperscript{30} as well as a plate illustrating ‘the former school for the building of Bridges and High-ways.’\textsuperscript{31} Krafft even dedicates one of his publications on carpentry to the engineer, Pierre-Charles Lesage (1740-1810).\textsuperscript{32}

Useful lines in Krafft and Hope

As the basis for efficient and economical translations into etched or engraved plates, the outline drawing was well suited to serving pedagogical purposes for amateur and student audiences. This is a characteristic particularly relevant for understanding Krafft’s work.\textsuperscript{33} The outline drawing’s popularization by other designers such as Charles Percier (1764-1838) and Pierre François Léonard Fontaine

\begin{itemize}
  \item \textsuperscript{30}Krafft, Plans, coupes, elevations. Explanation of Plate LIX.
  \item \textsuperscript{31}Krafft, Plans, coupes, elevations. Explanation of Plate LXII.
  \item \textsuperscript{32}Jean-Charles Krafft, Plans, coupes et élevations de diverses productions de l’art de la charpente exécutées tant en France que dans les pays étrangers (Paris, 1805). The dedication reads: ‘A Monsieur Le Sage, Ingénieur en Chef, Inspecteur des Etudes à l’École des Ponts et Chaussées.’
\end{itemize}
Domestic utility and useful lines

(1762-1853) also signaled its own fashionability as a vehicle for providing models of taste to a wealthy class of patrons and connoisseurs, as was the case with *Household Furniture*. In his publication, Hope sought to influence the future design of domestic interiors and their furnishings by setting an example with his own recently renovated home on Duchess Street in London. Hope produced *Household Furniture and Interior Decoration* as a printed record of his house which select members of the public could view in person. The house contained a lavish series of rooms representing design influences from the Classical world, including Greece, Italy, and Egypt, and it was filled with antiquities, such as vases from Sir William Hamilton’s collection and furniture purpose-built to display them. (Figures 5 and 6) It also contained sculpture commissioned from contemporary artists such as Flaxman and works from leading craftsmen such as the Regency goldsmith Paul Storr.

Hope called the sixty plates, engraved by Edmund Aikin and George Dawe, his ‘geometrical and other views.’ They were a means of more widely disseminating the ideals of design Hope articulated through his remodeled property. Rendered in outline from Hope’s own drawings, the plates exemplified what he considered the ‘mode of engraving best calculated to render the effect, and to facilitate the imitation of objects, whose chief merit consists in the chastity and the play of their contour.’ This equivalency between the outline drawing and what Hope deemed the aesthetic value in the objects it represented, was one element of the broader interplay between beauty and utility within Neoclassicism that was also manifest in the variety of possible functions for which the plates themselves were intended. Arguing that all domestic objects were ‘capable of uniting to the more essential requisites of utility and comfort … a certain number of secondary attributes of elegance and beauty,’ Hope linked the aesthetic value of outlines to

---

35 Hope’s Duchess Street home, no longer extant, was originally designed by Robert Adam in the 1760s as part of a real estate development at Portland Place, London.  
36 Hope’s explanation of this plate exemplifies the extension of the values of simple outlines and contours espoused in the outline drawing into the realm of interior design: “As this room is destined solely for the reception of ancient marbles, the walls are left perfectly plain, in order that the background, against which are placed the statues, might offer no inferior ornaments, or breaks, capable of interfering, through their outline, with the contour of more important works of art.”  
37 Aikin was an English architect, who, between c. 1810 and 1813, served as an assistant to General Sir Samuel Bentham (1757-1831), naval engineer, architect, and elder brother of Jeremy Bentham.  
38 Thomas Hope, *Household Furniture*, 15. Hope indicates that all the plates in *Household Furniture* represent objects that had already been made and that were in use. No proposals for unmanufactured designs were included.  
that of utility. In criticizing other styles such as the Rococo, which, he believed failed to offer a ‘breadth and repose of surface,’ and ‘distinctness and contrast of outline,’ Hope defined the qualities of design that would add elegance and beauty to domestic objects of daily use.

Like Krafft’s emphasis on the union of the useful and the pleasing in the architecture of his day, Hope’s assertion that household furniture should be both beautiful and useful reflected a significant trope in the history of architecture and the decorative arts. Vitruvius’ dictum *utilitas, firmitas, venustas* (utility, firmness, beauty) from the *Ten Books on Architecture* and Horace’s doctrine that literature should combine instruction with delight (*utile et dulce*) in the *Ars Poetica* lent ancient origins to a pairing that found expression in other combinatory ideals in the eighteenth-century arts. For example, ‘useful and ornamental’ and ‘polite and useful’ were paired values found throughout the design publications of the period and the discourses surrounding the practice of drawing itself. A. Hepplewhite and Co’s patternbook, *The Cabinet-Maker and Upholsterer’s Guide* (1794), for example, begins by stating that ‘[t]o unite elegance and utility, and blend the useful with the agreeable, has ever been considered a difficult, but honourable task.’ Publications were themselves implicated in the quest for this union as they were often marketed as an essential part of the craftsman’s tool-kit.

Hope’s interest in the utility of domestic objects and the ways in which the engraved outline drawing could participate in replicating and manufacturing such objects was shared by others in the design world, particularly those in publishing. But because the outline drawing was so significantly tied to antiquity, it was not a straightforward design tool. Hope oscillates between ideals of use for his book. He both postures as the disinterested gentleman who only offers ideas about design but also confesses a desire to control the types of copies being made of his work: ‘… I thought it might prove neither totally unacceptable nor totally useless, to publish of these various articles some geometrical and other views, sufficiently faithful and detailed to prevent a hasty survey of the originals from producing, instead of judicious imitations, extravagant caricatures …’

Hope’s interest in copying extended beyond his role as a taste-maker. Hope muses on manufacturing processes and the role drawing played in the communication of technical information. In describing the obstacles he faced in designing and manufacturing elements of the Duchess Street renovation, Hope puzzles over the search for two-dimensional representations that provide craftsmen

---

with adequate information to replicate a design in three-dimensional form. (Figure 7) He laments that even the simplest of shapes

… as soon as they are to present a rounded and evanescent contour, cannot be executed in relief from mere lines traced on a flat surface, however accurately these lines be drawn, with any degree of precision and truth … From the lines first traced by the draughtsman, on a mere plane, must still, in the second place, by the modeler, be wrought, in some soft and yielding substance, a rilievo, exhibiting in detail all those projections and recesses … before these concavities and these convexities can … by the carver or the caster be, with any certainty of success, transferred to the more solid and more inflexible material, out of which the utensil itself is finally to be wrought.45

![Image of various utensils](https://example.com/image.jpg)

Figure 7 Thomas Hope, “Group composed of various utensils,” Plate XLVII. From Household Furniture and Interior Decoration (London: Printed by T. Bensley for Longman, Hurst, Rees, and Orme, 1807). Courtesy of Bard Graduate Center: Decorative Arts, Design History, Material Culture; New York.

This problem of manufacture reflects a moment in which neoclassical contours, lines derived from an object’s form, come up against the descriptive limits of the technical lines employed by craftsmen and designers to facilitate the imitation of such objects.46

45 Hope, Household Furniture, 9.

46 On the difficulty of assessing the actual utility of design prints in manufacturing processes, see Anne Puetz, “The Emergence of a Print Genre: The Production and Dissemination of the British Design Print, 1730s-1830s,” (PhD diss., Manchester Metropolitan University, 2007), 16ff. Puetz notes that design prints played a limited role in actual manufacturing and workshop contexts and processes were often supplemented or replaced by other forms of communication such as measurements, annotations, written and verbal instruction, as well as three-dimensional moulds, and prototypes, suggesting that their primary function was to serve as sources of inspiration.
Descriptive Geometry and Cabinet-maker’s Lines

The development of technical drawing techniques attempting to facilitate exactly Hope’s aim – conveying sufficient information about an object on a two-dimensional plane to enable the manufacture of its form in three dimensions – was concurrent with the proliferation of the outline drawing. In the late eighteenth and early nineteenth centuries, representational problems related to building and manufacture were resolved in a systemization of projection techniques long-known in practice to stonecutters, carpenters, and Renaissance architects. The principle figure in the history of this rationalization of craft knowledge is the French mathematician, Gaspard Monge (1746-1818). Monge’s descriptive geometry allows a solid object to be graphically represented on a plane, such that its true size and shape are communicated. (Figures 8 and 9) It was a form of technical drawing based on the combination of plan and elevation techniques of perspective, both longstanding forms of architectural representation. Monge used the geometry of intersecting planes to create a geometrical method for preventing the distortion of forms drawn in perspective thereby enabling an object’s manufacture through its representation. He described the technique as having two major objectives:

The first is to represent with exactitude, on drawings which have only two dimensions, the objects that have three dimensions, and which require rigorous definition … The second … is to deduce from the exact description of bodies all that necessarily follows from their shape and from their respective positions.

While Hope’s knowledge of descriptive geometry is unclear, it is likely he would have been aware of Monge’s work given his familiarity with Jean-Nicolas-Louis Durand, a colleague of Monge’s at the École Polytechnique between 1795 and 1830. Durand’s *Recueil et parallèle des édifices de tout genre, anciens et modernes* (1800),

---

47 Kristi Andersen and I. Grattan-Guinness “Descriptive Geometry,” in *Companion Encyclopedia of the History and Philosophy of the Mathematical Sciences*, ed., I. Grattan-Guinness (New York: Routledge, 1994), 2: 887. Anderson and Grattan-Guinness also note that the methods of descriptive geometry were described by Piero della Francesca in an unpublished text and that Dürer published a similar method in 1525. Monge himself notes that descriptive geometry ‘has been practiced for a long time by a large number of persons and by many to whom time was precious.’ Quoted in Peter Jeffrey Booker, *A History of Engineering Drawing* (London: Chatto & Windus, 1964), 88, n. 51.

48 Gaspard Monge, *Géométrie descriptive* (Paris, 1798), 2. ‘[l]e premier est de représenter avec exactitude, sur les dessins qui n’ont que deux dimensions, les objets qui en ont trois, et qui sont susceptibles de définition rigoureuse … Le second … est de déduire de la description exacte des corps tout ce qui sui nécessairement de leurs formes et de leurs positions respectives.’

is included in the list of publications Hope credits with being ‘of most use to me in my attempt to animate the different pieces of furniture here described, and to give each a peculiar countenance and character, a pleasing outline, and an appropriate meaning.’ Durand’s subsequent publication, the *Précis des leçons d’architecture données à l’École Polytechnique* (1802-5), intended as a basic course in architecture for engineering students at the École, is arguably the most canonical text promoting the value of utility and efficiency in architecture c. 1800. Krafft, who included buildings by Durand in *Plans, Forms, Elevations*, would more than likely have been aware of Monge’s work and the pedagogical enterprise of the École which stressed the significance of technical drawing skills for its students.

Hope’s engagement with the technical facility of line and its ability to communicate information about the design and manufacture of objects was also surely influenced by the role geometry and drawing instruction played in the prints, pamphlets, and books that were part of the cabinet maker’s milieu and trade. In addition to providing practical instruction in the principles governing design drawing, publications such as Thomas Sheraton’s *Cabinet-Maker and Upholsterer’s Drawing Book*, published in serial form between 1791 and 1793, also participated in rhetorical demonstrations of the significance of geometry as a means of situating the trades of cabinet-making and upholstery in the respected intellectual domain enjoyed by fine artists and architects. Sheraton preached the importance of geometry by positing its role in overcoming the threat of fashion to the usefulness of

---

pattern books.\textsuperscript{52} In sections such as ‘Useful Geometrical Lines’ and ‘The Elements of Linear Perspective,’ Sheraton addresses a readership of workmen needing to make design drawings. In discussing perspective, Sheraton identifies this essential drawing skill as one that has too often been treated in complex, and therefore inaccessible, mathematical terms.\textsuperscript{53} Sheraton’s effort to negotiate the role of technical lines within the sphere of cabinet-making not only provides a context for Hope’s own musings on geometric representation, but also points to the class dynamics surrounding the implementation and discussion of useful lines.

As a member of Britain’s Society for the Encouragement of Arts, Manufactures, and Commerce, Hope participated in an institution where the practice of drawing and the value of utility enjoyed a very public partnership. The Society of Arts was founded in 1754 by the drawing master William Shipley with the aim of cultivating useful knowledge on behalf of Britain and its colonies through monetary incentives known as premiums. The Society’s explicit mission was ‘to promote the arts, manufactures, and commerce of this kingdom by giving honorary or pecuniary rewards … for the communication to the society, and through the society to the public, of all such useful inventions, discoveries, and improvements as tend to that purpose.’\textsuperscript{54} Because drawing was a technology integral to processes of design and communication among workers in manufacturing industries, it was also a central target for improvement:\textsuperscript{55} ‘the Art of Drawing is absolutely necessary in many Employments, Trades and Manufactures, and … the Encouragement thereof may prove of great Utility to the Public.’\textsuperscript{56} This mechanism of improvement was deployed in the fields of agriculture, chemistry, manufactures, mechanics, and colonies and trade, as well as in the category of the ‘polite arts’ with the expressed aim of fostering a greater pool of national drawing talent. One category of drawing premium during the late eighteenth and early nineteenth centuries was in fact ‘Drawings of Outlines,’ which was judged alongside other categories such as ‘Drawings of Landscapes’ and ‘Perspective Drawings of Machines.’\textsuperscript{57}

\textsuperscript{52} Thomas Sheraton, Cabinet-Maker and Upholsterer’s Drawing Book (London, 1793), 8. Sheraton also writes of books that depict out-of-date fashions: ‘… it must be owned, that books of this sort have their usefulness for a time; and, when through change of fashions they are become obsolete, they serve to shew the taste of former ages.’

\textsuperscript{53} Thomas Sheraton, Cabinet-Maker, 181.

\textsuperscript{54} This statement frequently appears in The Society’s ‘Advertisement to the Public’ in the Transactions of the Society, Instituted at London, for the Encouragement of Arts, Manufactures, and Commerce, published between 1783 and 1844.

\textsuperscript{55} On drawing as a design tool for the improvement of manufactures, see Anne Puetz, “The Society and the ‘Polite Arts’ 1754-1778: ‘best drawings,’ ‘high’ art and designs for the manufactures,” in Susan Bennett, ed., Cultivating the Human Faculties: James Barry (1741-1806) and the Society of Arts (Bethlehem: Leigh University Press, 2008).

\textsuperscript{56} Rough Minutes of the Society, 22nd March, 1754, RSA/AD/MA/100/12/01/171.

\textsuperscript{57} A proposal for offering premiums for ‘Drawings of Outlines’ first appears in 1767 (Minutes of the Society, 23rd Dec., 1767 RSA/AD/MA/100/12/01/13) and is a topic I discuss in greater detail in my dissertation. Because the technique was to be applied to drawings of ‘a human figure after nature or
Even if on a less technical level, Krafft also sought to position his publication as a tool in the design process. In *Plans, Forms, Elevations* he suggests his plates function as re-workable drafts on which architects could experiment with the visual effects of different building surfaces. Instructing designers to ‘lay on colours’⁵⁸ if they wished his plates to serve as an experimental armature in their design process, Krafft simultaneously posits the plates as representations and ready-made working drawings.

The practice of adding colour washes to line engravings was common among authors and publishers during this period, appearing, for example, in bespoke editions of Percier and Fontaine’s work and the architect Louis-Ambroise Dubut’s (1769-1845) oeuvre. Dubut’s *Architecture civile* (Paris, 1803) was available in three editions: one in ‘Papier de France’ for 90 francs, another in ‘Grand Colombier de Hollande’ for 120 francs, and ‘Le même lave à l’encre de la Chine’ for 400 francs. This type of variety - coloured and uncoloured versions, and on different grades of papers - broadened the appeal of these publications by addressing different niches in the market.⁵⁹ Krafft, whose *Plans, Forms, Elevations* appears to have only been marketed as an uncoloured publication produced in outline, references the colouring practices seen in publications like *Architecture civile* while positioning his own publication as a pedagogical object.⁶⁰ The aesthetic affinity between the outline drawing’s ‘fine, firm, and flowing’ lines and those of cabinet-makers, geometers, and even engineers, meant that Krafft’s and Hope’s publications could convey both neoclassical aesthetic values while simultaneously embracing the value that technical lines c. 1800 had accrued.

**Conclusion**

Krafft’s and Hope’s discourses on usefulness as a framework for evaluating buildings and objects were part of a cultural and intellectual nexus in which utility was a vital interest and concern. In institutions such as the École Polytechnique and the Society for the Encouragement of Arts, Manufactures, and Commerce, utility found expression as a value associated with

---

⁵⁹ Percier and Fontaine’s hand-coloured copy of *Palais, maisons, et autres édifices modernes, dessinés à Rome* (Paris, 1798), now in The Sir John Soane’s Museum Library, is thought to be a unique copy produced for Josephine, Napoleon’s wife. I am grateful to Stephanie Coane for bringing my attention to this volume.
⁶⁰ There is no evidence to suggest Krafft marketed his publications through the addition of colour washes prior to their sale. However, I have encountered loose coloured sheets leaving open the possibility that this practice could have been part of his enterprise. These sheets were from Krafft’s 1812 publication, *Recueil d’architecture civile* and were being offered for sale by Donald A. Heald Rare Books, Prints & Maps.
Enlightenment ideals of improvement and modernization as well as being the very means of achieving such goals. It was not only public utilities such as roads and bridges that became a new focus for state building projects, but also ideas and inventions thought to hold the promise of improving quality of life. Also in the air, so to speak, were the ideas of thinkers such as Bentham who saw in utility a concept that could structure everything from the design of hospitals and prisons to the governance of a population.

Beyond locating Krafft’s and Hope’s neoclassical design practice within this nexus, this paper also identifies the outline drawing as a locus for establishing connections between Neoclassicism and utility. An examination of the nature of the outline drawing’s lines, their relationship to working design drawings, design pedagogy, as well the lines of more technical drawings, reveals that the outline drawing is itself a site where utility took root in ideals of design practice, specifically in the perennial problem of translating drawings into three-dimensional forms. Krafft’s interest in his plates as an armature for colour washes and Hope’s reflection on how drawings provide instruction to craftsmen, extends the use of this fashionable idiom beyond its traditional aesthetic associations with the revered contour of antique objects. With domestic architecture and its interiors as their domains of inquiry and attempted reform, Krafft and especially Hope, sought to make their lines speak an emerging language of industrial replication in order to disseminate design models.

But just as Krafft and Hope sought to promote design that balanced the beautiful and the useful, their outlines were engaged in a similar negotiation. Whatever usefulness the outline drawing offered its audiences – whether as a pedagogical tool or as a tool in the design process – was arguably in tension with its ability to simultaneously express the aesthetic and cultural values tied to Neoclassicism. Krafft’s and Hope’s outlines were never intended to be purely utilitarian but rather capitalized on the cultural caché of this possibility; their outlines gesture towards a technical status they do not fully possess. In an age of industry when industrial processes and machines were marvels in their own right, the potential for line to participate in this new world of production and manufacture informed the proliferation of the outline drawing and contributed to its appeal.

Although late-eighteenth- and early-nineteenth-century notions of use and uses of line were multiple and varied – as lines could themselves have utility and usefulness could take on aesthetic associations – their

61 One of the most influential authors to have written about this subject is the late Robin Evans. See Translations from Drawing to Building (Cambridge, MA: MIT Press, 1993) and The Projective Cast: Architecture and its Three Geometries (Cambridge, MA: MIT Press, 1995).

62 My dissertation develops this argument, stressing the significance of this tension between aesthetic expression and technical communication, especially as a feature of Classicism’s reconciliation with industrial change.
interdependence around 1800 is exemplified by figures such as Krafft and Hope. *Plans, Forms, Elevations* and *Household Furniture* are publications where the aesthetics of the outline drawing and discourses on usefulness intersect, revealing themselves as rich nodal sources for the study of utility, both as a concept central to the understanding of the outline drawing and to Neoclassicism more broadly.

**Alexis H. Cohen** is a Ph.D. candidate in the Department of Art & Archaeology at Princeton University. This paper discusses aspects of her dissertation, *Lines of Utility: Outlines, Architecture, and Design in Britain c. 1800* which conceptualizes the outline drawing as the visual language of a new critical discourse tied to the emergence of utility as a central topos within Neoclassicism. Alexis’ work has been supported by fellowships from the Paul Mellon Centre for Studies in British Art, the Social Sciences and Humanities Research Council of Canada, and the DAAD.

ahcohen@princeton.edu, alexis.h.cohen@gmail.com