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Introduction

Urs Graf's Unknown Man, or: Representing Practices of Time

Who is this man (fig. 1)? What is he doing? The more the beholder attempts to grasp his character, the more he seems to withdraw. The drawing shows a middle-aged man with a youthful, clean-shaven face. Full, curly hair undulates under his beret, which is embellished with an agraffe in the shape of a cracked peapod. The man is completely absorbed in handling a small item with his fingertips. His contemplative state is underlined especially by his eyes, which in looking down at the object appear nearly closed.

The object that demands all his attention is an equinoctial sundial, which he has already set up. It is housed in a small box whose lid consists of yet another instrument: a nocturnal. Without clearer indications of light in the drawing, it remains an open question whether the man is shown actually capturing the rays of the sun to measure time, or whether he is just curiously manipulating the object without any precise purpose. Although different objects of time measurement had already been depicted, mostly in allegorical or technical contexts, in art of earlier centuries, this drawing appears to be one of the first instances in which a practical engagement with such an instrument was deemed worthy of representation in its own right.

Several details around the man's head point to the artist behind the drawing. The letters "V" and "G", flanking the figure, stand for Urs Graf (1485–1528; active 1503–1525), a goldsmith, book illustrator and draughtsman from Solothurn in Switzerland. The item at the upper right of the drawing is a box of borax, a requisite of the goldsmith's craft that serves also as part of Graf's signature.¹ The drawing is dated to between 1505 and 1508.² It belongs to the early years of Graf's career, when the artist moved

- 1 Zinner, Ernst: *Deutsche und niederländische Instrumente des 11.–18. Jahrhunderts*, Munich 1956; Franz, Erich (ed.): *Meisterwerke aus dem Kupferstichkabinett Basel: „Zu Ende gezeichnet“*. Bildhafte Zeichnungen von der Zeit Dürers und Holbeins bis zur Gegenwart, exh.-cat. Münster, Westfälisches Landesmuseum für Kunst und Kulturgeschichte, Ostfildern 1995, no. 17; Müller, Christian: Urs Graf. Die Zeichnungen im Kupferstichkabinett Basel, Basel 2001, no. Z 1.
- 2 Müller 2001 (see footnote 1).



1 Urs Graf, Portrait of a Man with Pocket Sundial, ca. 1505/08, Basel, Kunstmuseum Basel, Kupferstichkabinett

back and forth between the Upper Rhenish cities of Strasbourg and Basel.³ While the format of the drawing suggests that Graf used a page from a sketchbook,⁴ in signing the sheet he elevated the drawing from a preparative medium to an autonomous work of art. It may have been a collectible in the humanist circles that Graf frequented at that time.⁵ The elaborate dress of the unknown sitter suggests that of a wealthy patrician – a good candidate for these circles.

The man is handling a universal pocket instrument. Such a device usually consisted of a nocturnal on the outer side of its lid, an equinoctial sundial that rested underneath the lid on the lip of the box and a compass inside the box itself (figs. 2–3). Known in Antiquity, the equinoctial sundial reappeared in Western Europe in the first half of the 15th century.⁶ These universal instruments enabled their users to measure time, whether at home or on the go, day or night.⁷ Because of their small size and compactness, these three-part instruments were often used for travel. Though Graf obviously struggled with the depiction of the device, it is still possible to identify the nocturnal on the lid, which he represented in a partial form. We see a hand on a disk, indicating the month of the year and approximately the day within that month. But Graf missed a second disk that would have indicated the hours of the day. After setting the date, the user would have looked through a hole in the middle of the nocturnal to locate the Pole Star, before turning the hand to the position of the Plough to read the time of day on this second disk. In comparison, the unfolded equinoctial sundial was quite well observed by Graf – although he inscribed the dial with letters instead of numbers. It thus seems that here Graf quickly captured the very moment in which someone manipulated the little instrument: if he had carefully arranged the subject in his workshop, he could have taken the time to portray the device more accurately. However, with the addition of the cracked peapod on the man's beret, Graf altered the captured scene and offered to the viewer a further symbolic layer. While the universal pocket instrument reminds us of the passing of time, the peapod, as a symbol of fertility, signals the overcoming of death.⁸

3 Urs Graf was trained in Zurich. Scholarship has offered convincing arguments that Graf lived in Strasbourg when he executed this specific drawing, although we do not know much about his early years before he settled in Basel around 1510. See Müller 2001 (see footnote 1).

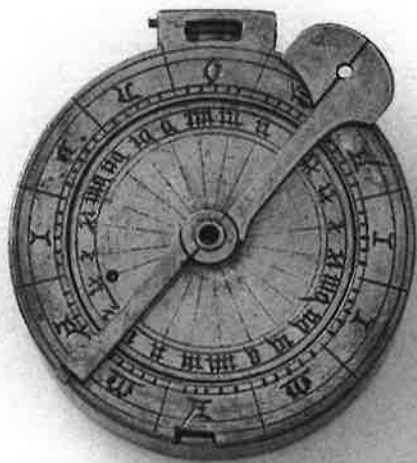
4 Falk, Tilman: Urs Graf. Bildnis eines Mannes mit Pelzkragen, in: Bericht über die Tätigkeit der Eidgenössischen Kommission der Gottfried-Keller-Stiftung 1973–1976, pp. 26–32, p. 30.

5 Müller 2001 (see footnote 1), p. 67.

6 Salzer, Ronald Kurt: Viel Neues unter der Sonne. Ein Zeitmessgerät des 15. Jahrhunderts von europäischer Tragweite, in: Eichert, Stefan et al. (ed.): Laufzeit/Zeitlauf. Zeitkonzepte – Datierung – Chronologie in der Mittelalter- und Neuzeitarchäologie (Beiträge zur Mittelalterarchäologie in Österreich 33), Vienna 2018, pp. 83–98.

7 Salzer 2018 (see footnote 6).

8 For a comparison, see the peapods in the book of hours of Catherine of Cleves, Utrecht, c. 1440 (New York, Pierpont Morgan Library, MS M. 917/945, fol. 11r). On hat jewels, see Hackenbroch, Yvonne: Enseignes. Renaissance Hat Jewels, Florence 1996.



2 Pocket Sundial, closed state, with nocturnal on its lid, early 16th century, Stuttgart, Württembergisches Landesmuseum

Objects and Practices

Urs Graf represents the historical practice of setting an equinoctial sundial by touching it with one's fingertips in a gentle and meditative manner. The technical act of handling the device and the act of contemplating it are not separated in the drawing. Instead, the draughtsman yields a realistic image of the complex interaction between the user and his time-keeping device. Graf's drawing invites us to reflect on the object in its technical and symbolic dimensions, as well as on its manipulation and the contexts in which it would have been employed.

The relationship between objects and practices is the focus of the present volume *Material Histories of Time: Objects and Practices, 14th–19th Centuries*. The aim of the volume is to foster a dialogue between two different approaches to the history of horology and of time cultures. On the one hand is that of historians, curators and conservators who study the material history of time-keeping devices.⁹ This approach hinges on

⁹ For an overview of the variety and vitality of these inquiries, see the contents of specialized journals such as *Antiquarian Horology*, *Chronométraphilia*, *Jahresschrift der Deutschen Gesellschaft für Chronometrie*, *Watch & Clock Bulletin*.



3 Cf. fig. 2, open state

an in-depth knowledge of the technical and scientific history of sundials, sandglasses, clocks, watches, etc. On the other hand is the approach of scholars who consider the cultural and social history of the temporal organization of societies.¹⁰ This area of scholarship tends to investigate the diffusion of time measurement in society, raising questions that demand extensive archival research and a multifaceted reflection on the relationship between institutions and individuals, structures and practices, materials and representations, technical and cultural factors.

¹⁰ Verhoeven, Gerrit/Blondé, Bruno: *Against the Clock. Time Awareness in Early Modern Antwerp, 1585–1789*, in: *Continuity and Change* 28/2, 2013, pp. 213–244; Glennie, Paul/Thrift, Nigel: *Shaping the Day. A History of Timekeeping in England and Wales, 1300–1800*, Oxford 2009; Voth, Hans-Joachim: *Time and Work in England (1750–1830)*, Oxford 2000; Dohrn-van Rossum, Gerhard: *History of the Hour. Clocks and Modern Temporal Orders* [1992], Chicago/London 1996; Landes, David: *Revolution in Time. Clocks and the Making of the Modern World*, Cambridge, Mass. 1983; Cipolla, Carlo M.: *Clocks and Culture, 1300–1700*, London 1967; Thompson, Edward P.: *Time, Work Discipline and Industrial Capitalism*, in: *Past and Present* 38, 1967, pp. 56–97; Le Goff, Jacques: *Au Moyen Âge: temps de l'Église et temps du marchand*, in: *Annales. Économies, Sociétés, Civilisation* 15/3, 1960, pp. 417–433.

In recent years, new methodological perspectives have emerged, as witnessed by the interest in materiality in studies of socio-cultural phenomena and in the history of knowledge,¹¹ as well as by the place granted to objects in art history.¹² An openness to social and cultural factors has also emerged in the formerly internalist history of technology. These interpretative perspectives can help strengthen the dialogue between the two historiographical approaches mentioned above. In particular, in praxeological social-historical studies of the individual and its behaviours,¹³ the object has a central role in the investigation of practices seen as “reconstructable (everyday) patterns of past ways of doing and speaking”.¹⁴ When considered as the vestige of a practice, the object becomes a material document that can help the historian overcome the ‘silence’ of the archive concerning everyday gestures and ways of doing.¹⁵ To ‘materialize’ the history of time, as the title of the present volume suggests, means therefore to turn a spotlight on time-keeping devices in an analysis of time in society. While urban history and the history of consumerism have contributed much in drawing attention to the diffusion of timepieces and time indication,¹⁶ the usage of timepieces stands at the very centre of practices that speak to the changing relationship between time and society. The measuring of time can penetrate society in many possible ways – for example, in coordinating, synchronizing, measuring duration, sequencing gestures, quantifying mobility, defining a position, inculcating punctuality, recording and relating an experiment, modelling a theory or reproducing an observation, visualizing, materializing or even interpreting

- 11 Notable instances of the interest in materiality in historical studies include Richardson, Catherine/Hamling, Tara/Gaimster, David (eds.): *The Routledge Handbook of Material Culture in Early Modern Europe*, Abingdon 2017; Siebenhüner, Kim: *Things That Matter: Zur Geschichte der materiellen Kultur in der Frühneuzeitforschung*, in: *Zeitschrift für Historische Forschung* 42/3, 2015, pp. 373–409; Findlen, Paula (ed.): *Early Modern Things. Objects and Their Histories, 1500–1800*, Abingdon 2013; for the role of materiality within cultural theory, see Reckwitz, Andreas: *The Status of the “Material” in Theories of Culture: From “Social Structure” to “Artefacts”*, in: *Journal for the Theory of Social Behaviour* 32/2, 2002, pp. 195–217. See also Pickering, Andrew: *Material Culture and the Dance of Agency*, in: Hicks, Dan/Beaudry, Mary C. (eds.): *The Oxford Handbook of Material Culture Studies*, Oxford 2010, pp. 191–208.
- 12 Cordez, Philippe: *Object Studies in Art History: Research Perspectives*, in: id. et al. (eds.): *Object Fantasies. Experience & Creation*, Munich 2018, pp. 19–30.
- 13 Chateauraynaud, Francis/Cohen, Yves: *Histoires pragmatiques*, Paris 2016; Haasis, Lucas/Rieske, Constantin (eds.): *Historische Praxeologie*, Paderborn 2015; Füssel, Marian: *Praktiken historisieren. Geschichtswissenschaft und Praxistheorie im Dialog*, in: Schäfer, Franka/Daniel, Anna/Hillebrandt, Frank (eds.): *Methoden einer Soziologie der Praxis*, Bielefeld 2015, pp. 267–288. On the praxeological turn in social theory and science studies, see Reckwitz, Andreas: *Grundelemente einer Theorie sozialer Praktiken. Eine sozialtheoretische Perspektive*, in: *Zeitschrift für Soziologie* 32/4, 2003, pp. 282–301.
- 14 Haasis, Lucas/Rieske, Constantin: *Historische Praxeologie. Zur Einführung*, in: Haasis/Rieske 2015 (see footnote 13), pp. 7–49, p. 16.
- 15 Bernasconi, Gianenrico: *Pour une archéologie des pratiques*, in: *Socio-anthropologie* 40, 2019, pp. 247–262.
- 16 The diffusion of watches and public clocks is well documented in the English context, see Glennie/Thrift 2009 (see footnote 10), ch. 4 and 5; Weatherhill, Lorna: *Consumer Behaviour and Material Culture in Britain, 1660–1760*, London 1996.

time flow. To explore these practices, it is necessary to consider techniques of clock-making, including the timepieces' technical complication, not only as the product of the clockmaker's virtuosity but also as a mediation between objects and practices. This investigation directs attention to the organization of timepiece production,¹⁷ the diffusion of such products and the manifold contexts in which they were employed, as these objects could be scientific instruments, luxury items, symbols that embodied the flow of time or even everyday objects. Examining the uses of time can help to historicize the emergence of time awareness from the standpoint of an object-practice relationship in which the materiality of measuring devices – their function, shape, size, decoration and materials – is of the utmost importance. In the title of this volume, *Material Histories of Time*, the plural "Material Histories" precisely underscores the variety of relations that can exist between objects and practices.

Material Histories of Time

In *Material Histories of Time*, the questions raised above are discussed within a broad temporal framework spanning the appearance of the mechanical clock in the 14th century and the decades preceding the industrialization of horology and the synchronization and unification of the hour in the 19th century.¹⁸ While the contributions presented here focus on mechanical clocks and watches, we are well aware of the necessity to take into account other time-keeping devices, such as meridians or hourglasses, whose historical study might show the variety or coexistence of different time keeping techniques. Graf's universal pocket instrument, which opened this introduction, is also meant to underline this methodological demand and the need for further research.

The volume begins with two contributions that focus on multifaceted objects that communicate abstract concepts of time on various sensory levels while also supporting the interests of those in power. Philippe Cordez considers the hydraulic and musical fountain in the Cleveland Museum of Art, a unique device of gilt and enamelled silver made in Paris c. 1320–1340. A close comparison with the Fountain of Youth presented across text, image and music in the *Roman de Fauvel*, a political satire recorded in a manuscript of 1317, suggests that the same group was involved in both creations. Indeed, the Cleveland fountain multisensorially evokes the Parisian royal palace as a

17 Girarder, Sandrine: *L'entreprise Jaquet-Droz. Entre merveilles du spectacle, mécaniques luxueuses et machines utiles, 1758–1811*, Neuchâtel 2020; Dequidt, Marie-Agnès: *Horlogers des Lumières. Temps et société à Paris au XVIII^e siècle*, Paris 2014; Hilaire-Pérez, Liliane: *La pièce et le geste*, Paris 2011; Riello, Giorgio: *Strategies and Boundaries. Subcontracting and the London Trades in the Long Eighteenth Century*, in: *Enterprise & Society* 9/2, 2008, pp. 243–280.

18 McCrossen, Alexis: *Marking Modern Time. A History of Clocks, Watches, and other Timekeepers in American Life*, Chicago/London 2016; Ogle, Vanessa: *The Global Transformation of Time, 1870–1950*, Boston 2015.

divine Fountain of Youth rejuvenating the French Kingdom. Günther Oestmann discusses the monumental astronomical clock in Strasbourg, showing that the passing of time could be displayed in many ways, whether mechanical or visual. Timekeeping was in fact only one of the functions of the Strasbourg astronomical clock, which rather aimed at presenting "God's order to the public", as Oestmann argues.

At the centre of Victor Pérez-Álvarez's examination stands a Renaissance table clock at the National Maritime Museum in Greenwich, made by two versatile Augsburg clockmakers, Caspar Buschmann and Johann Reinhold, around 1586. In this phase of transition between the Julian and Gregorian calendars, the Augsburg clockmakers designed the clock's indications to mediate political tensions that came along with this transition. And successfully so, as the clock went on to be valued well into the 18th century. Gerhard Dohrn-van Rossum elaborates on the socialization of time in an exploration of the work of the English artist William Hogarth. No subsequent artist used clocks as intensively as elements of a time-related iconography. Hogarth represented very specific times of day in order to characterize – and to judge in moral terms – the daily schedules of different social strata. The artist thus engaged with the time-related values of the Puritan middle classes, for example, opposing diligence, thrift and industry to untimeliness and idleness – in other words, the use versus the abuse of time.

Marie-Agnès Dequidt discusses the relationship between objects and practices in the activity of Parisian clockmakers. Through an analysis of accounting books, the archives of the Académie des sciences and a few clockmakers' treatises, she demonstrates the diversity of the public of clock users in 18th-century Paris. Beyond the influences of new customs and demands, clockmakers proposed inventions to stimulate the market. They cultivated a new aesthetics of decorative clocks and developed technical and functional innovations to simplify or improve the mechanism and to support the diffusion of new practices. Gerrit Verhoeven draws upon the proceedings of the Old Bailey (London's supreme court of criminal justice) to question the assumption that the diffusion of pocket watches in the 18th century revolutionized traditional concepts of time and created a modern, razor-sharp and time-oriented awareness. In analysing more than two thousand statements from between 1774 and 1825, he observes that the impact of watches in the practice of timekeeping remained minor, while tower, church, gate bells and night watches maintained a steady importance for the awareness of time in the city.

Issues surrounding timekeeping also elicit the attention of historians of mobility, who underline a progressive transformation of travelling practices involving the use of timepieces. Through an analysis of Louis Dutens's *L'itinéraire des routes les plus fréquentées* (1775), Nicolas Verdier shows how the use of an instrument to measure distance, namely the odometer, in conjunction with a time-keeping device, changed radically the relationship between distance and space. In the *Itinéraire*, Dutens presented tables juxtaposing quantified values of the distance and time of travels, which, even if they did not go so far as to establish the velocity ratio of the itinerary, accomplished a first substantial step in that direction. Catherine Herr-Laporte discusses the relationship between

time and mobility in the 18th century through a study of carriage clocks. The diffusion of these objects, much varied in design and denomination, ran parallel to the evolution of travelling practices in which time occupied an increasingly central place. These watches were in fact useful tools for organizing and coordinating the mobility of individuals and goods, as well as fashionable objects that responded to the importance of travel in Enlightenment culture. Grégoire Besson's contribution deals with the experience of time as measured by late 18th- and early 19th-century travellers. Although mentions of timepieces are rare in travel literature, the very practice of travelling nevertheless highlighted a diversity of time cultures. The diffusion of timepieces was uneven within Europe itself, and travellers were in general confronted with different ways of measuring time and with the difficulty of regulating the time on their watches.

Fabio Pruneri turns the focus to another area of time-keeping practices, providing a historical overview of time rhythms at school from the late Middle Ages to the Industrial Age. Selecting decisive moments that demonstrate how the relationship between education and time has changed, he outlines a progressive fragmentation of the school day. His study of timekeeping raises the question of the management of transformation processes through the measure of their duration. Gianenrico Bernasconi studies the presence of temporal indications in cookbooks from the 17th and 18th centuries as signalling the formalization of culinary practices. The quantification of cooking time represented the recording of an experience that in turn became mobile and reproducible. But this quantification was also an instrumental practice that, together with 'sensory' techniques, allowed for the controlling of food transformations. Marco Storni discusses the place of timekeeping in scientific practices, taking up the role of pocket watches in the chemical experiments of Antoine Lavoisier. Already objects of common use in pulse-based diagnosis, pocket watches belonged to the area of "taken-for-granted-knowledge", as Storni argues. In introducing this term, Storni outlines a thus far overlooked type of knowledge that is necessary for the building of a theory, but whose presence is not necessarily acknowledged by the actors involved.

Alexis McCrossen takes a look at the praxis of repair as documented in the account book of David Edwards Hoxie corresponding to the years 1876–1883 in order to locate information concerning 19th-century American clockmaking in general. Hoxie's entries on nationality/origin, type, watchmaker, serial number, casing and materials not only offer insight into the main technical problems Hoxie faced – which mostly resulted from the inexperienced use of pocket watches by their owners – but more broadly into the distribution and ownership of watches and their use and meaning. Finally, Johannes Graf takes the volume away from the praxis of repairing and towards the praxis of replicas, forgeries and historical fiction. He closely analyses the entangled story of the alleged first Black Forest clock, a story in which several agents, institutions and objects successively blurred the history of clockmaking in the German Black Forest region. The object is in fact part of a fiction that arose from a desire for an original cultural identity in the Black Forest during a time of pan-German national integration.

The present book is the outcome of a cooperation between Gianenrico Bernasconi and his research team on the history of technology at the Institute d'histoire of the **Université de Neuchâtel and Susanne Thürigen** as a member of the research group "**Premodern Objects. An Archaeology of Experience**", funded by the Bavarian State **Ministry of Science and the Arts (Elite Network of Bavaria)** and established at Ludwig-Maximilians Universität München under the direction of Philippe Cordez for a term of five years (2013–2018).

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We address our warmest thanks to all the colleagues who engaged in discussions with us in La Chaux-de-Fonds and who prepared their papers for the present volume. We are grateful for the dedicated support of Catherine Herr-Laporte and Marco Storni in the editing process, while the volume benefitted largely from the diligent editing work of Marie Gioanni for the contributions in French and Julia Oswald for the contributions in **English**. Finally, we thank Philippe **Cordez** for his **continuous support** and for welcoming **this** book as the third in the series "**Object Studies in Art History**", as well as Katja Richter, Anja Weißenseel and Susanne Drexler for their professional supervision at De Gruyter.