1 Where do we go now? The archaeology of monumental fountains in the Roman and early Byzantine East

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My lecture presented at the conference, titled 'What to Expect? The Archaeology of Monumental Fountains in the Roman and early Byzantine Periods', was intended as a general introduction to the theme of the conference, and summarised the current archaeological approaches to the study of Roman and early Byzantine public fountains. The aim was to propose tracks of reflection for future studies that draw on ongoing debates, as well as to point out a few important material and methodological aspects hitherto neglected in the study of so-called 'nymphaea'. In this chapter, I have extended the original scope of the lecture to include a short historiographic overview of the field, in order to identify the origins of current research trends on monumental fountains and their numerous shortcomings. The overview will not be limited to a strict archaeological or technical perspective on the topic: I will also examine a few recent studies addressing the social, political and cultural context of which these lavish water structures ubiquitous in ancient urban centres were the material expression. To provide context for the focus of this volume on Constantinople, I shall concentrate on studies addressing the eastern Mediterranean at large. It is worth considering the rich archaeological evidence from the wider region, not only because it has been abundantly studied, but also because a critical examination of past and current studies of fountains in Greece, Asia Minor and the Levant may provide a good methodological basis for further study of the sparse architectural, technical, decorative and epigraphic evidence associated with ancient monumental fountains in Byzantion–Constantinople. Due to their poor state of preservation, fountains in Byzantion–Constantinople are indeed less well-known than the aqueducts, cisterns and other types of waterworks in the same city.

Monumental fountains in the Eastern Mediterranean and beyond: a brief historiographic overview

The first signs of a modern interest in ancient monumental fountains are not found in the eastern Mediterranean but, quite logically, in western

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Europe during the Italian Renaissance. The imposing remains of these rich, multi-storied columnar façades originally filled with statues quickly attracted the eye of contemporary artists. Only the most conspicuous of these monuments were recorded, such as the Severan Septizodium (fig. 1.1) or the so-called *Trofei di Mario* in Rome,[1] whereas plainer water distribution structures not deemed worthy of artistic interest were ignored. Nevertheless, ruined monumental fountains remain scarce amongst the recorded waterworks, especially compared to the endless sequences of aqueduct arches or the overwhelming ruins of ancient baths. It was the artistic and intellectual value of these façades, with their coloured marbles, statues and inscriptions, that triggered the interest of contemporaries. The possibility that they might have fulfilled utilitarian functions was clearly secondary.[2] The traditional opposition between a perception of monumental fountains as mere decorative water displays and the more technical or

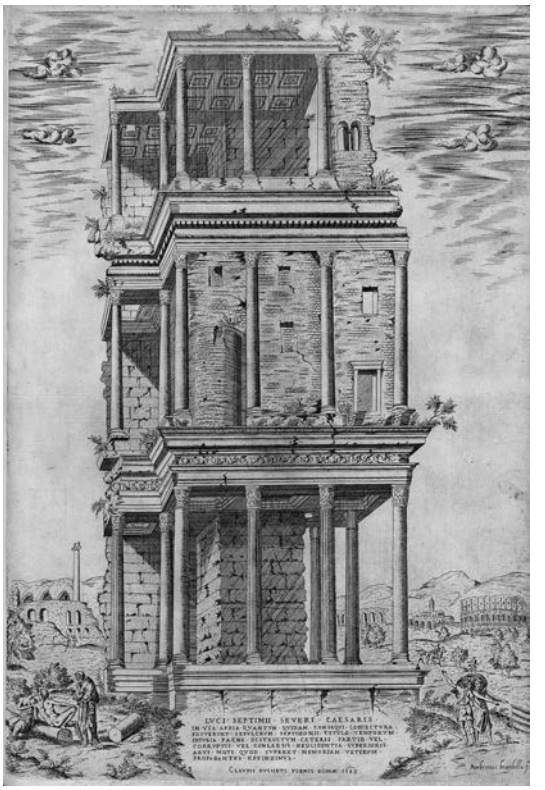

Fig 1.1. The Septizodium in Rome by Antonio Lafreri.
Courtesy University of Chicago, Special Collections Research Center.

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engineering-oriented surveys of other types of waterworks somehow finds its origin in that period, and would remain an important point of discussion.

From the nineteenth century onward, western explorers strolling through the eastern Mediterranean noted the presence of ruined *nymphaea* that were still standing at the most conspicuous locations of ancient cities. During his expedition to Pisidia and Pamphylia in 1884 and 1885, the Polish aristocrat K. G. Lanckoroński and his team of cartographers, epigraphers, photographers and architects, recorded the remains of *nymphaea* at Aspendos, Side and Sagalassos.[3] They collected detailed measurements of the standing structures (fig. 1.2), and made extremely accurate drawings of the architectural members and their ornamentation. At Sagalassos and Side, reliefs depicting aquatic motifs found respectively on the lower podium and on the frontal parapet of the two fountains were drawn and their mythological contents commented upon. In these reports, monumental fountains were treated as static visual objects, with a marked interest for building ornaments and statuary decoration, whereas the chronology and hydro-technical details were neglected. By contrast, aqueducts and plainer types of fountains were looked at from a more technical viewpoint, such as the impressive siphon of Aspendos and the cisterns of Termessos, described and drawn by Lanckoroński's team.[4] In 1904–5, the Princeton University Archaeological Expeditions to Syria under the direction of Howard Crosby Butler similarly recorded a large amount of buildings from all periods – including *nymphaea* – with a specific focus on the restitution of ground plans and elevations, leaving aside any technical consideration other than the structural properties of the recorded buildings or the materials of which they were made.[5] Despite their irreplaceable documentary value,[6] these early accounts also originated enduring false identifications, such as the so-called 'nymphaea' of Amman and Bosra, which later proved to be 'dry' exedra-shaped monuments designed to display statues.[7]

With the German scholar Ernst Curtius (1814–96), the artistic study of monumental fountains and their decoration became a popular subject of scholarly connoisseurship. His works *Die städtischen Wasserbauten der Hellenen* (1847), *Griechische Quell- und Brunneninschriften* (1859) and

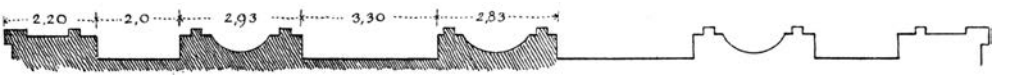

Fig 1.2. Ground plan of the late Hadrianic Nymphaeum at Sagalassos drawn by the team of K.G. Lanckoroński, after Lanckoroński 1892, Abb. 104.

Die Plastik der Hellenen an Quellen und Brunnen (1876)[8] count amongst the earliest attempts to synthesise the existing knowledge on the subject, despite a strictly philological and art historical perspective. Although Curtius focused exclusively on the fountains of Greece – he initiated the German excavations in Olympia, where the so-called 'Exedra of Herodes Atticus' was found – his approach would remain the classical way to study monumental fountains across the eastern Mediterranean for a large part of the twentieth century.

The second half of the nineteenth century indeed saw the expansion of large-scale excavations in the eastern Mediterranean, the so-called 'big digs' popular during that heyday of classical archaeology. Huge amounts of architectural data were generated and compiled in numerous detailed publications. Despite their limited scope – usually the recording and lengthy description of architectural remains, statues and inscriptions – the mass of information they contain gives them a unique value, if sometimes only because the buildings or their decoration have disappeared since then or were deliberately cleared. For example, in Olympia, the accounts on the excavations undertaken at the so-called 'Exedra of Herodes Atticus' in 1877 record the clearance of a large Roman brick structure and the discovery of statues.[9] The recognisable character of the different components of the hydraulic apparatus quickly supported the identification of these ruins as a fountain. The remains were published in three separate sections between 1892 and 1896, which presented respectively the architecture, the statues and the inscriptions.[10] The architectural study of the remains continued episodically during the first half of the twentieth century. Scholars produced fanciful restitutions of the demolished superstructure (fig. 1.3) and speculated on the original location of the numerous statues collected in the ruins. In contrast, the way the hydraulic installation could function was widely neglected, except for brief observations on the general layout of the cistern, basins and water inlets. In Corinth, the identification of the Peirene in 1898, based on ancient written accounts, remains a landmark in early field research on public fountains.[11] Fieldwork mainly consisted of clearing the ruins, a difficult task hampered by the flowing spring and modern waterworks still functioning on the spot. In the early twentieth century, the careful recording of the hydraulic installations – not limited in this case to a façade and a basin, but also including the complex supply installation behind it – was done with a certain awareness of hydraulic technology, and resulted in the exhaustive architectural and functional study of the complex by Bert Hodge Hill published in 1964.[12] In 1919, the publication of the *nymphaeum* of Miletos by Julius Hülsen was another major step towards a

study of public fountains alongside the technical details of their hydraulic supply. Hülsen described extensively the complex terminal installations of the aqueduct located behind the three-storied façade, as well as the two draw basins in front of it, although the largest part of the monograph still consisted in the detailed documentation of the many architectural members found scattered amongst the ruins, followed by the restitution of the façade. The abundant statuary decoration, which has disappeared since then except for three statues preserved in Istanbul and Berlin,[13] is described extensively. The description of the remains is followed by a lengthy attempt to reconstruct the original statuary display in the niches and tabernacles of the façade, mainly based on basic modern assumptions of the iconographic hierarchy amongst the deities and individuals depicted, with gods assigned a central place and half-gods or secondary figures in the upper storeys. The greatest contribution of Hülsen remains the short account of the development of antique fountain architecture at the end of the volume. Mainly concentrated on Greece and drawn from epigraphy and vase paintings, Hülsen's overview also includes the few Roman *nymphaea* known at that time in Rome, the Levant, Asia Minor and North Africa. Once more,

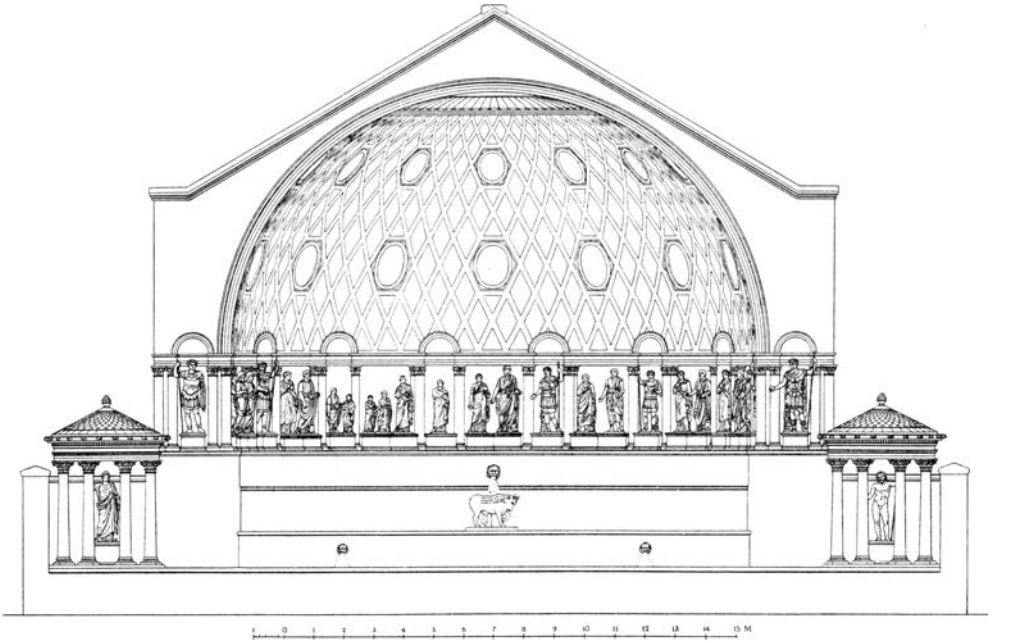

Fig 1.3. Olympia, Exedra of Herodes Atticus. Tentative reconstitution of the elevation by F. Adler, after Treu 1897, Abb. 294.

these are envisioned as static architectural entities classified according to their ground plan and elevation.

The canonical separation between the descriptive or art-historical study of fountains and the more technical perception of aqueducts, water pipelines and bathing establishments became standard in early encyclopedias and handbooks of Greco-Roman art and archaeology. In the *Dictionnaire des Antiquités Grecques et Romaines* published between 1877 and 1919, grand monumental fountains are grouped under the heading 'nymphaeum', whereas plainer water installations are described under the entry 'fons'.[14] In these works, the ancient terminology applied to the different categories of fountains is used as the main classification criterion, which not only gave a special status to every structure called 'nymphaeum', but also implied a direct architectural link between all Greek and Roman waterworks associated with this term. The few known monumental fountains of Rome and North Africa are treated in greater detail than those in the eastern Mediterranean, with descriptions focused on ground plans and basic architectural properties. In another handbook, the *Manuel d'Archéologie Romaine* published in 1916 by the French scholars René Cagnat and Victor Chapot, all sorts of Roman public fountains, classified by size from the modest *lacus* lining the streets of Pompeii to a few grander realisations of North Africa and the East, are envisioned as functional installations that are part of a distribution network, although this link seems more evident for plainer waterworks than for *nymphaea*.[15]

Until the 1980s, the corpus of excavated monumental fountains grew significantly. During that period, the now traditional tripartite division architecture/sculpture/inscriptions structured the majority of publications. The excavations reports on the Roman fountains lining the streets of cities like Ephesos[16] or Perge[17] illustrate this trend. Particularly striking is, once more, the attention given to the description of architectural members and to the restitution of the original location of statues in the façades. By contrast, the hydraulic apparatus only receives short comments, making very difficult any attempt of functional contextualisation of these fountains within the water distribution system of each city. Aqueducts and other supply installations were generally published separately, as if fountains were minimally involved in water distribution. It is obvious that the specific focus of scholarship on the *display* of water – which remains a fact, given the open architectural configuration of these fountains and the interplay between their decorative façades and the large reflecting basins – overshadowed the wide spectrum of utilitarian functions these fountains also fulfilled. This one-sided view can certainly be explained – at least in part – by the typical structure and

scope of these publications. Another point to note is the lack of interest in tracing the later construction phases of fountains. The frequent alterations made to architectural features, to the hydro-technical elements or to the statuary programmes are only mentioned briefly – if mentioned at all – without envisioning them in terms of building phases. At best, these later alterations are simply gathered as a hypothetical 'late-antique' or 'Byzantine phase' not deemed worthy of interest.[18]

By the late 1950s, the quantity of available architectural data allowed the development of the first broad-ranging architectural typologies. Reflecting on their purpose and value is essential, since these studies are still frequently quoted or used as a quick way to gain access to published material. Typological classifications of fountains are invariably based on visual and formal properties, and rarely reach beyond a strictly descriptive level. They are mainly intended to classify rather than to explain the material. Three criteria were used to structure these classifications: the ground plan, the layout of the façade or the stylistic properties of the building ornamentation. Most early typologies of Roman monumental fountains made a distinction between flat or pi-shaped façades, sigma-shaped (or apsidal) façades, and façades articulated around three monumental apses. The presence of apses, in general, was thought to reflect the primitive shape of the cultic grotto devoted to the Nymphs, from which Roman *nymphaea* were supposed to derive.[19] Formal comparisons between *nymphaea* and theatres were at some points in time very popular.[20] The two classes of buildings indeed shared many similarities: long columnar façades with quantifiable variables (e.g. number of storeys, niches, tabernacles or *aediculae*), complex statuary programmes and written documents. At the same time, broad regional groupings of different types of theatres and fountains – usually according to a traditional East–West divide[21] – imposed a certain degree of heterogeneity upon which comparisons between the provinces and Rome could be based. These chronological-geographical comparisons became the most frequent expression of what can be qualified as a 'decontextualised typology' of Roman monumental fountains. The main risk of this approach is to create improbable formal parallels over large distances, which are not only inexact in many cases, but also tend to blur the historical contingency proper to each region or building. The Antonine/Severan (?) *nymphaeum* at Side, for instance, has frequently been compared to the Septizodium in Rome, mainly because their façades were both articulated around three apses and because their date of construction was thought to be close.[22] This hypothesis, rooted in formal similarities, presupposes the influence of one building upon the other. The main problem is that, if most authors postulate

an influence directed from Rome to Side, at least one implies the opposite![23] The lack of tangible dating evidence in the case of Side and the poor state of preservation of the Septizodium cast even more doubt on such formal parallels.[24] The main asset of such typological catalogues, however, remains the richness of the material they contain. In that respect, the publication of the Severan *nymphaeum* at Laodikeia in Phrygia by René Ginouvès in 1969 can be considered another landmark of fountain research for the sum of details it contains.[25] The narrative underlying this vast collection of fountains from all regions of the Roman world is still directed by terminology and architectural typology. Like the *Dictionnaire des Antiquités Grecques et Romaines*, these catalogues take the term 'nymphaeum' as a leitmotif to compile an accumulative description of fountains, regardless of their local context. Another common structuring narrative of these catalogues is the examination of Greek and Roman waterworks in a linear typological-chronological sequence,[26] a sort of storytelling typical of a certain idea of classical archaeology, the validity of which is never really justified by scholars themselves, as if the continuity between the two groups of fountains obeyed a self-fulfilling logic.

At the beginning of the 1980s, any researcher willing to work on Roman monumental fountains had at his disposal catalogues featuring in the best cases an extensive description of each fountain's architectural and decorative properties, as well as the relevant chronological data and bibliography. As a matter of fact, the scope and methodology characterising each of the publications reviewed here is typical of the period when it was written. Nevertheless, three recurring shortcomings can be pointed out. The first element is the lack of contextualisation of the evidence: fountains were treated as mere visual objects seen as an accumulation of quantifiable constitutive parts. This decontextualisation of the architectural object hampers any understanding of the motives behind its construction, of its practical use, of its integration within large urban dynamics or of its perception by contemporaries. Architectural typology tends to become an independent entity existing alongside the material it originally intended to explain, and it creates categories that did not exist or were not perceived as such in antiquity. A second recurring element is the creation of historical narratives rooted in ancient terminology or in a certain idea of Greco-Roman fountain architecture, presented as linear and accumulative storytelling. Finally – and this is linked to the first two shortcomings – fountains are envisaged in the 'architectural climax' constituted by the moment of their construction, and are often denied a historical existence. From a strict archaeological perspective, this distance could not be greater from fountains as excavated

objects, which comprise a mixed compound of original building elements, decorative, structural or functional alterations, incomplete, damaged or repaired parts.

In the 1990s and 2000s, the study of Roman monumental fountains has undergone a widening in scope, methodology and recording practices. The decontextualised evidence inherited from past scholarship is increasingly explored historically and dynamically, whereby the specificities of 'Roman' fountains – understood here in strict chronological terms – are examined within regional, historical, social and political contexts, rather than as elements in architectural or classical narratives.

Concerning Greece, the doctoral dissertation of Susan Walker on Roman fountains,[27] followed two decades later by a detailed article by the French scholar Sandrine Agusta-Boularot on the construction and maintenance of fountains during the first centuries of Roman rule in the region,[28] represented major steps towards a deeper historical contextualisation of Roman fountains. Through a detailed study of the architecture and decoration of the monumental fountains built in Greece during the High Imperial period, Walker was able to investigate the meaning of these monuments within the wider social-political context of the time, including themes such as the funding of fountains by imperial and private benefactors and the meaning of these monuments' architectural and decorative opulence. The study of Agusta-Boularot focused on the long-term presence of public fountains in Greek public and religious spaces from the archaic and classical periods onward. She established a catalogue of pre-Roman and Roman fountains that not only focused on their first building phase, but also took into account their subsequent evolution and period of use. She then noticed the apparent scarcity of newly built 'Roman' fountains between the second century BC and the late first century AD, and she explained this fact by the active maintenance of the existing apparatus of older fountains. This emphasis on urban continuity, moving away from a simplistic list of dated buildings that articulated a linear architectural narrative, marked a major breakthrough towards the long-term examination of public fountains within regional and urban dynamics. Regrettably, this study makes a wide use of cultural-political labels, with statements such as 'the Romans' or 'the Roman power' as initiative taker in the construction of some of the fountains discussed in the article. This emphasis on the structures of power to the detriment of the local level of initiative potentially active in the process would later become an important element of debate, as stated below.

The 2001 monograph by Claudia Dorl-Klingenschmid, *Prunkbrunnen in kleinasiatischen Städten: Funktion im Kontext*, can be considered another

major breakthrough in the field, although it did not go as far as implied by its title and indicated aims.[29] Considering fountain architecture through the prism of regional continuity, Dorl-Klingenschmid explored in detail the formal, decorative and functional components of every type of fountain found in Asia Minor from the origin of fountain architecture in archaic times until late antiquity. With the exception of a few buildings recently (re) studied, her gazetteer remains the most comprehensive overview of fountain architecture in the region to this day. Through the analysis of architectural, decorative and hydro-technical details, Dorl-Klingenschmid not only envisioned fountains as an architectural shape and as a form of urbanistic expression, but also investigated for the first time the layout and meaning of their most mundane constitutive parts, such as draw basins and vessels, parapets, inlets and drainage facilities. Beyond utilitarian aspects, she put a strong emphasis on the meaning of monumental fountains as a tool of ideology and representation, whereby not only the imagery of power, but also the expression of urban and individual identities through architecture, sculpture and text are explored. Unfortunately, the importance given to architectural classifications is a major point of criticism. Dorl-Klingenschmid's study never really reaches beyond a strict examination of the meaning of architectural and decorative syntax, to the detriment of the contextual and functional issues presented as the primary aim of the book, and somehow it fails both to locate fountains within the socio-political and socio-cultural dynamics of each city and within the local contexts of water distribution. Despite these shortcomings, Dorl-Klingenschmid opened the way towards a context-minded examination of *all* structural parts of fountains, in contrast with the study of their architecture, decoration and epigraphic apparatus in a stylistic or classificatory manner.

Ongoing debates: addressing the entire functional spectrum of monumental fountains

In view of this brief survey of historiography, it seems clear that the main challenge posed to the current study of Roman monumental fountains is our ability to examine the entire extent of their functional spectrum (fig. 1.4). This spectrum oscillates between two poles: decorative and representative functions on the one hand, and a rich yet understudied utilitarian dimension on the other. The interplay between these two facets was the very *raison d'être* of Roman monumental fountains, and was maximised through their striking exposure at the most conspicuous locations of ancient cityscapes,

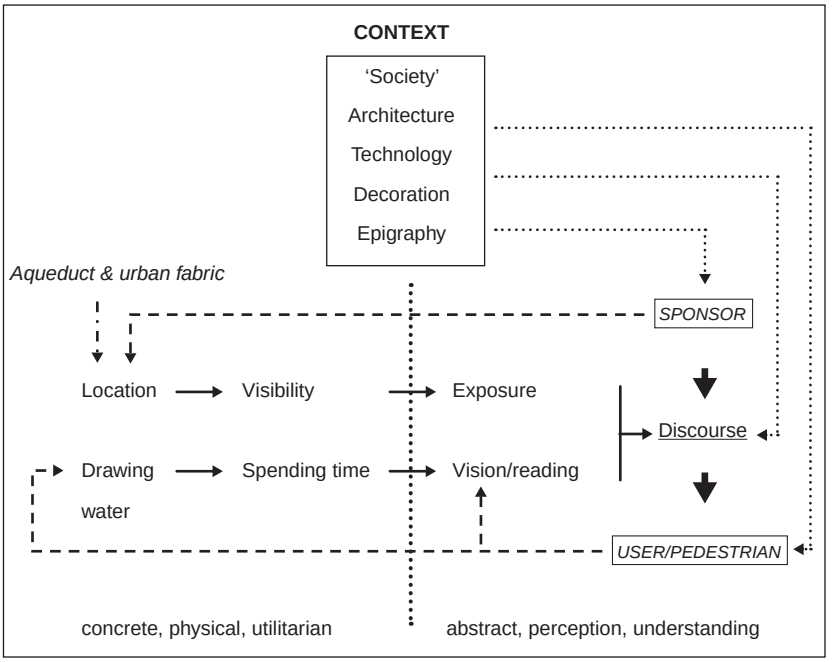

Fig 1.4. Diagram illustrating the functional spectrum of Roman monumental fountains, drawn by Julian Richard.

an aspect that is generally treated separately in broader studies on town-planning and ancient urban landscapes.[30] A second challenge is to envision this complex set of variables not in isolation, but rather as the expression of a wider local, regional or supra-regional context encompassing technological, architectural, decorative and epigraphic trends and practices, as well as broader social, political and economic dynamics.

The different approaches followed in past scholarship have successively put the emphasis upon specific fields of this functional spectrum, whereas others were largely avoided or neglected. The enduring art-historical perspective on monumental fountains, with its focus on visual aspects, both architectural and decorative, has elevated the importance of ornamental water display. Additionally, the desire to establish typologies and comparative classifications brought the global framework of the Roman Empire to the foreground. The awareness of a common formal language shared by the numerous monumental fountains found in the provinces of the empire – awareness strengthened by their similarities with other widely distributed classes of buildings with columnar façades such as theatres – precluded much in-depth examination of regional or local dynamics which may

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equally have influenced both the technical design and the visual layout of fountains.

Ongoing debates revolve around three domains in which the study of Roman monumental fountains still possesses significant margins of extension. The first one is precisely this possible influence of regional and local levels of context. These not only incorporate the concrete initiatives of cities and locals in the funding, design and construction of fountains, but also the possible reception, rejection or reinterpretation of influences from the (supra-)regional and empire-wide context. Brenda Longfellow's monograph, *Roman Imperialism and Civic Patronage: Form, Meaning and Ideology in Monumental Fountain Complexes*, published in 2011, is an excellent example of a wide-ranging contextual approach to Roman monumental fountains.[31] It concentrates on the interplay between local and imperial agencies, and the ways in which cultural, political and social identities were expressed through the topography, architecture, decoration and hydraulic apparatus of Roman *nymphaea*. Based on a selection of thirty fountains from Greece, Asia Minor, North Africa and Rome that can be associated with both local benefactors and emperors, Brenda Longfellow explores the importance of the latter in the dialectic exchange between local communities, local patrons and their rulers. Concretely, this presence could manifest itself through the active intervention of the emperor in the funding and construction of fountains and waterworks or, more indirectly, through the visual presence of the figure of the ruler in statuary displays and inscriptions. Concerning Asia Minor in particular, Longfellow underscores the possible influence of provincial administrators upon the diffusion of new shapes inspired by imperial realisations in Rome, influences which, in turn, inspired private benefactors. I have expressed elsewhere, in relation to this monograph, the caution required in the study of such discourses of power.[32] Purposely selecting fountains where the presence of the emperor – actively involved or not – is clearly attested leaves aside the large majority of those lacking such sources. This presents a risk of overestimating the role of external authorities, whereas, in most cases, the emperor was merely the passive recipient of local honours, the financial costs of building the fountain being supported by the city or private benefactors.[33]

The terms of this debate, which also emerged in relation to aqueducts,[34] illustrates perfectly a question to tackle in future research: to what extent were 'Roman' monumental fountains the product of a certain 'Roman civilisation of water' or, should they primarily be seen as the result of local initiatives? How and to what degree were they encoded with external, urban and/or individual discourses and identities? How were they perceived by

the different agents coming across them during their long period of use? Interrogating the multiple levels of meanings encapsulated in public architecture is a promising trend of current research.[35] Thinking about monumental fountains in terms of initiative is crucial: this is the only way to cover the entire spectrum of agents and discourses involved in their funding, design, construction, use, visual perception and later alterations. It is essential to establishing the correct balance between, on the one hand, the active participation or the passive representation of external authorities in these processes and, on the other, the influence of local forces of initiative, including taking account of 'simple' users and pedestrians gazing at the façade. Suggestions as to how we might tackle these issues in archaeological terms will form the final section of this chapter.

A second neglected aspect is water management. This may seem surprising, since we are dealing with 'fountains'. Yet, we have seen how the hydraulic apparatus of fountains, i.e. the set of hydro-technical components involved in the supply, display, use and drainage of water, has been almost totally ignored in the past, causing the loss of masses of information. Apart from a few early exceptions I have already mentioned, such as the Peirene at Corinth and the *nymphaeum* of Miletos, the study of hydro-technical elements has generally been limited to recording the dimensions and shape of the basin(s), the amount, location and typology of the inlets or, the presence or not of spouting statues. How water pursued its course through these different components, and how they could affect or facilitate the display and drawing of water is almost never investigated.

Due to this important shortcoming in documentation, monumental fountains never triggered the same interest amongst water archaeologists and engineers as aqueducts, intra-urban distribution systems and baths. The field of the so-called 'aqueduct studies', however, has much potential to offer a template for future fountain studies.[36] In the last two decades, the study of water distribution in ancient cities has developed at a fast pace, from the examination of isolated constitutive components towards the global study of urban water networks as complex functional systems. The implementation of interdisciplinary approaches, involving various disciplines such as history, epigraphy, hydrogeology, water engineering or the technical study of architecture and building materials, has allowed a 'total' view of ancient water distribution systems, from their ecological determinants to their smallest technical details, with also a keen interest for the wider social, economic and political context.[37] The interdisciplinary studies of the water networks of Pompeii, Herculaneum and Ostia by Gemma C. M. Jansen[38] and of the waterworks of Miletos

by Gerhard Tuttahs[39] illustrate the way entire water supply networks can be reconstructed exhaustively and diachronically following an interdisciplinary methodology. The two monographs include detailed functional studies of public fountains: the accurate recording of every detail of their hydraulic apparatus – at least when the state of preservation of the building permits it, which is not frequent – allows reconstructing sequences of water management, which in turn can be replaced within the overall urban distribution system. Likewise, based on a collection of published hydro-technical data, I have explored the functional sequence of Roman monumental fountains in Greece, Asia Minor and the Levant and tried to assess their impact on the water distribution networks.[40] My study was strictly limited to a study of the available archaeological data and did not reach the level of quantification. Yet, when looked at from the viewpoint and methodology of hydraulic engineering – which is the case for the work done by Tuttahs on Miletos and, to a lesser extent, for certain aspects of Jansen's work – the functioning of waterworks can be both described and quantified in terms of water discharge, allowing an evaluation of the impact of these waterworks within the framework of the entire urban distribution network. Such studies open paths for future research, which will require adapted archaeological methods and an interdisciplinary focus. Beyond lies the challenge of establishing a balance between the utilitarian function of monumental fountains and their visual, representative and decorative meaning.

A third characteristic of current research is the stronger diachronic accent given to the study of the visual and utilitarian properties of monumental fountains. As detailed above, emphasis on continuity between Greek and Roman waterworks, combined with typologies freezing the evidence into rigid building types, has long hampered any long-term study of the evolution of the architectural layout, decorative components and concrete modus operandi of fountains. A majority of existing studies seem to consider the imperial period as an ideal end and do not investigate further the subsequent fate of newly built fountains. Studying the active preservation of existing fountains, i.e. the active maintenance or the adaptation of their architectural layout, decorative appearance and functional properties, is a promising field of research.[41] Beyond a mere description of these alterations, it has the potential to address the overall evolution of the aesthetic maintenance and perception of fountain façades, as well as the functional impact of fountains within the changing conditions of late-antique urban contexts.

A side effect of this lack of interest to date in monumental fountains in the later empire is the almost complete isolation of the few known monumental fountains of Constantinople from the broader study of 'Greco-Roman fountains'.[42] This concerns in particular two *nymphaea* allegedly built under Constantine and Valens, which are known through literary sources and, in the case of the second, associated with architectural remains of uncertain identification.[43] Despite the importance of their locations, on the south side of the Forum of Constantine and to the north-west of the Forum Tauri respectively, and their likely architectural opulence, the two structures remain largely unknown to specialists working on the fountains of earlier periods. They constitute, however, two of the best examples of continuity in the habit of building monumental fountains at the most conspicuous locations of ancient cities.

Towards an archaeology of monumental fountains

The study of Roman monumental fountains relies on a rich and varied corpus of material, the largest part of which was compiled at a moment when an accurate restitution of scattered architectural and decorative data was the primary aim of scholars. It seems clear that the step from a descriptive study of monumental fountains towards a wider interpretative analysis of their entire functional spectrum requires a corresponding adaptation of archaeological practice, both for the production of new data and for the critical reexamination of existing evidence.

A genuine archaeology of monumental fountains, able to tackle the various goals and potential margins of progress reviewed in the previous section, thus requires an accurate documentation of *all* significant aspects of monumental fountains. The 'traditional' recording of the architectural structure, building ornaments and statuary programmes should by no means be dismissed. These documents possess an interpretative potential beyond the level of classificatory typology. The description should, however, take the hydrotechnical context better into account: this is, as we saw, a major shortcoming in many existing studies. Visual assumptions, such as how a fountain *should* appear, based on formal parallels, external typology or a supposed hierarchy among the components of the statuary programmes, should be avoided when not sufficiently supported by archaeological evidence. Only an accurate, context-bound description of architectural, statuary and epigraphic sources can form the base of any further contextualisation. I have argued

above that interrogating the various levels of initiative behind the decision to build a fountain, its funding, design and construction is crucial to avoid any interpretative bias. This contextualisation should consist of weighing in a critical manner the different levels of influence or agency potentially present in the process. Assessing the presence of empire-wide or regional architectural and decorative trends is a question to which architectural and stylistic typology still can contribute. Addressing the different levels of initiative can in turn be envisaged if the following parameters are examined: the possible influence of structures of power, from the direct intervention of imperial and provincial authorities in the building process to their passive depiction in statuary programmes or the reception of honours materialised in inscriptions; the presence of visual or written evidence revealing the involvement of urban authorities or of elements constitutive of urban identity (e.g. mythical founders, religious figures, institutions or prominent citizens); and the expression of individual identities, mainly in relation to private building sponsors, if present. A correct contextualisation will be possible if, in accordance with the available sources, such levels of discourse are weighed in terms of relative importance and the initiative ascribed to the right level.

Improving the study of water management requires the largest investment in terms of archaeological practice. It is, as argued above, the field in which the largest quantity of data has been lost or neglected in the past. The reconstitution of the entire functional sequence of a monumental fountain is dependent on its rate of preservation. Yet, the accurate observation and recording of key elements, such as the configuration, position and dimensions of the inlet(s), the size of the basin, an estimation of the original level of water based on sinter concretions (if present), the configuration of the parapet – informative of comfort and user-friendliness – and the shape and dimension of the drainage facilities, would allow a basic evaluation of the flow of water through the building (fig. 1.5). The description should also include as much quantified data as possible, a type of information largely missing – including the dimensions of basins! – in most older publications. These results can be refined by looking at additional details, such as the numerous grooves, cuttings, perforations and minor alterations that are visible on virtually every element of the hydraulic apparatus (fig. 1.6) and may reveal small-scale yet significant modifications of the water flow.[44] Finally, if enough data are available, a quantified study of the water flowing through the fountain can be attempted. Studies of this nature are lacking, although they constitute the only valid way to assess whether monumental fountains wasted huge quantities of water or whether specific strategies to conserve water were implemented, for instance under harder climatic

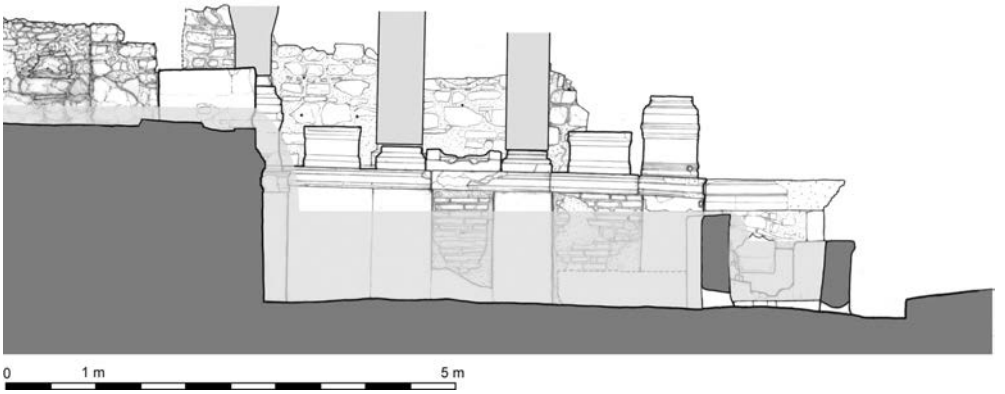

Fig 1.5. Ephesos, Nymphaeum Traiani. Cross-section with tentative indication of the flow of water through the fountain, after Quatember 2006, 76 (with permission).

Fig 1.6. Stratonikeia (Caria), Severan Nymphaeum. Negative traces of terracotta pipelines diverting water out of the main basin.
Photograph: Julian Richard.

conditions, a recent hypothesis that needs to be confirmed through more quantified data.[45]

The examination of all these parameters should be undertaken within a diachronic interpretative framework. A major obstacle is the absence of evidence to date architectural and technical alterations, which cannot be correlated easily with absolute stratigraphic, stylistic or written evidence. In

recent years, the final publications of some fountains excavated earlier in the twentieth century generally provide an exhaustive overview of the evolution of architectural, decorative and technical aspects, and sometimes include a useful section on past research.[46] Only the accurate documentation of all alterations subsequent to the original building and decoration phases will allow the contextualisation of each fountain within the wider evolution of cityscapes and water distribution networks during late antiquity.[47]

Tackling these various scientific issues and applying the corresponding methodology will allow the development of a real 'archaeology of monumental fountains', free of constraining narratives and as close as possible to the material and its context. The largest task that remains is the critical re-examination according to these goals of the material published in the past, a duty that still requires a substantial quantity of additional fieldwork. This undertaking is however highly valuable: building up critically a rich material base is the only way to allow an optimal in-depth interpretation of monumental fountains as the meeting point of technical, urban, social and political universes.

Notes

1 The depictions of the Septizodium by Maarten van Heemskerck (1498–1574) and Antonio Lafreri (1512–77) and of the so-called *Trofei di Mario* – also known as the Nymphaeum of Alexander Severus – by Etienne du Pérac (c.1520–1604) and Piranesi (1720–78) are well-known. On the Septizodium, see n. 2. On the Nymphaeum of Alexander Severus, refer to Letzner 1990: 459–61, cat. no. 337; Longfellow 2011: 190–203.

2 The enduring debate on the layout of the Septizodium's hydraulic installations results partly from the incomplete documentation of the monument at that period. These drawings remain however extremely valuable, since the last standing structures were demolished in the sixteenth century. Based on fragments of the *Forma Urbis* and on comparisons with similar buildings, many attempts have been made to reconstruct the hydraulic apparatus of the Septizodium. See Letzner 1990: 459–61, cat. no 337; Lusnia 2004 and Longfellow 2011: 164–72 for the relevant bibliography.

3 Lanckoroński 1890: 98–102 (Aspendos), 139–45 (Side); 1892: 133–4 (Sagalassos).

4 Lanckoroński 1890: 120–4 (Aspendos); 1892: 57–60 (Termessos).

5 Butler 1919.

6 The sketches made of the early-second-century exedra fountain at Sweida in Southern Syria by William John Bankes in the early nineteenth century proved extremely valuable in reconstructing the original appearance of the building and establishing its chronology. Sartre-Fauriat 1992.

7 Butler 1919: 54–9 (Amman); 251–2 (Bosra); see also Brünnow and Von Domaszewski 1909: 20–2, where the columns of the 'nymphaeum' at Bosra are interpreted as a temple or a portico. For the reviewed identification of these structures, see Ball 2000: 292–4 (Amman); Dentzer 2002: 116–21 (Bosra).
8 Compiled in *Gesammelte Abhandlungen* published in Berlin in 1894.
9 Bol 1984 gives an excellent overview of the past research on the monument.
10 Adler 1892, Treu 1897, Dittenberg and Purgold 1896, respectively.
11 See Robinson 2011, who provides an exhaustive *status quaestionis* of past and recent research on this famous landmark of ancient Corinth.
12 Hill 1964.
13 Seated Nymph (Istanbul, Arkeoloji Müzesi, inv. no. 127; Hülsen 1919: 57, no. 1; Mendel 1966: vol. I, 333, no. 127); standing female figure in draped dress (Istanbul, Arkeoloji Müzesi, inv. no. 128. Hülsen 1919: 58, no. 5; Mendel 1966: vol. I, 333, no. 127); Satyr torso (Berlin, Pergamon Museum, inv. no. 1578. Hülsen 1919: 61–2, no. 10).
14 Monceaux 1877–1919: 129–32 ('nymphaeum'); Michon 1877–1919: 1227–39 ('fons').
15 Cagnat and Chapot 1916: 104–7.
16 See, for example, the articles on the so-called *Fontäne* (Heberdey 1902), the *Straßenbrunnen* (Keil 1926), the Hydrekdocheion of C. Laecanius Bassus (Eichler 1961, 1963; R. Fleischer 1972–3; Fossel and Langmann 1972–3), the *Pollio-Bau* (Bammer 1976–7; Miltner 1959; 1960), the *Apsisbrunnen* (Miltner 1960) and the Nymphaeum Traiani (Miltner 1959).
17 Concerning the nymphaea at Perge, the detailed articles of the excavation director Arif Müfid Mansel remain the principal source of information: Mansel 1956; 1963; 1964; 1975a/b.
18 For an earlier example of this lack of interest in the later evolution of public fountains, see Humann 1904: 137, concerning the alterations made to the basin of the Hellenistic fountain-house at Magnesia-on-the-Maeander, attributed to *Byzantinischer Zeit* without more details. See also Robinson 2011: 74–7 on the removal of Byzantine wall structures during the excavations of the Peirene at Corinth.
19 Large architectural syntheses such as Meschini 1963 and Neuerburg 1965 place an exaggerated emphasis on the use of the term 'nymphaeum', which designated the original cultic, grotto-like installations devoted to the worship of the Nymphs. This priority given to this ancient terminology results in an artificial, linear classification of the buildings to which this terminology has successively been applied, ranging from the primitive grottos to urban monumental fountains, seen as the last step of this evolution.
20 Crema 1959; Meschini 1963; Parra 1976.
21 On the East–West division in the study of Roman architecture, see E. V. Thomas 2010.
22 Hülsen 1919: 86; Meschini 1963: 510; Mansel 1963: 63; Ginouvès 1969: 154–5 (including the above-mentioned wrongly identified 'nymphaeum' of Amman, used as comparison!).

23 The fountain of Side was used at some point to reconstruct the elevation of the Septizodium. Hülsen 1919: 86. Recently, Longfellow 2011: 180–1, postulated a direct influence of the Septizodium upon the nymphaeum at Side. Lusnia 2004: 524–5, however, supports the idea of influence in the opposite direction.
24 The dating of the aqueduct fixes a *terminus post quem* in the Antonine period for the construction of the nymphaeum (Grewe 1994). The latter is assigned to the reign of Caracalla *at the latest*, based on the earliest inscription found in the ruins (Nollé 1993: 82–3; Dorl-Klingenschmid 2001: 244), although its excavator, Mansel, assigned it to the Antonine period on stylistic grounds (Mansel 1956: 85–90; 1963: 63–4). I tend to privilege the early dating, since a branch of the second-century aqueduct directly supplied the fountain. Even if influence from the Roman Septizodium cannot be totally excluded, this hypothesis remains based on a strict formal comparison and cannot be supported by any other argument.
25 Ginouvès 1969. The study of Greek fountains by Franz Glaser in 1983 is comparable, though less dependent on terminology (Glaser 1983). The main classification criteria used by Glaser are the type of ground plan and the layout of the elevation. His study remains one of the main sources on the architecture of Greek fountains.
26 Meschini 1963; Glaser 1987.
27 S. Walker 1979, with excerpts published in S. Walker 1987.
28 Agusta-Boularot 2001.
29 Dorl-Klingenschmid 2001.
30 The much-quoted study of William L. MacDonald, who studied the architectural dynamics articulating Roman urban centres (MacDonald 1986) remains up to this day one of the most exhaustive analyses of the visual potential of fountain façades.
31 Longfellow 2011.
32 Richard 2011a.
33 Richard 2011b; viewpoint similar to the study of Barbara Burrell on the representation of emperors in Roman bathing complexes (Burrell 2006).
34 Eck 2007.
35 See for instance Revell 2009.
36 The expression 'aqueduct studies' is inspired by the title of a monograph, Hodge 1992.
37 On this general perspective, see Shaw 1991; Kamash 2010. The series of publications issued by the *Frontinus Gesellschaft*, the proceedings of the *Cura Aquarum* conferences, and the fourth issue of *Water History* (2012) together provide an excellent and comprehensive overview of current debates in the field.
38 Jansen 2002.
39 Tuttahs 2007.
40 Richard 2012.

41 Dorl-Klingenschmid 2001, although she only devoted a few pages to the typology of fountains in Asia Minor in late antiquity, opened the way. For a broad perspective on the aesthetic and technical maintenance of monumental fountains in the eastern Mediterranean during late antiquity, see Jacobs and Richard 2012.

42 Cf. the similar comment on the low representation of the supply lines of Constantinople in general publications on Roman aqueducts in Crow, Bardill and Bayliss 2008: 1.

43 The nymphaeum allegedly built by Constantine is mentioned in Cedrenus, 1.610.14, Zonaras, 3.125.5, the *Notitia Urbis Constantinopolitanae* (233, Region V) and in Eusebius, *Vita Constantini*, 3.49. See also Bauer 1996: 171; Bassett 2004: 29, 70 and Crow, Bardill and Bayliss 2008: 127, n. 11, who support a dating in the last quarter of the fourth century AD for the fountain. The *Hydreion Megistos* built in AD 372–3 is mentioned in Cedrenus, 1.543.16, Valens Socrates, OG 67, 477A and in the *Notitia Urbis Constantinopolitanae* (238, Region X). See also Bauer 1996: 193, 195–6; Crow, Bardill and Bayliss 2008: 127–8, 225, 229, 230. The *Notitia Urbis Constantinopolitanae* cites two more nymphaea in Regions IV and XIV. See the introduction to this volume.

44 Jacobs and Richard 2012; Richard 2012: 141–54.

45 Kamash 2010: 112–19; Richard 2012: 172–6.

46 Negrelli 2004 (a new study of the Byzantine phase of the Fountain of Caracalla at Laodikeia); Mägele, Richard and Waelkens 2007 (late Hadrianic Nymphaeum at Sagalassos); Quatember 2008 (Straßenbrunnen at Ephesos); Quatember 2006; 2011 (Nymphaeum Traiani at Ephesos).

47 See in that respect the integration of data on public fountains in the general article on the evolution of the urban landscape of Ephesos from the third to the seventh century AD by Ladstätter and Pülz 2007.