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When megaprojects meet archaeology: a research framework and case study from Yenikapi,Istanbul

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ABSTRACT

From 2004 to 2012, 37 well-preserved Byzantine shipwrecks were discovered during construction of two underground train stations at Yenikapı, Istanbul. Despite its complexity, archaeology is rarely studied through organisational and management lens. This paper investigates the Yenikapı rescue excavations using two innovative analytical frameworks for archaeology – the Heritage Chain and Structure Conduct Performance analysis – which highlight the crucial but too often overlooked role of practices (or emerging strategies) in public policy, helping identifying strengths and weaknesses of the project. In this sense, two elements of the system seem fundamental: its extreme centralisation and its ongoing process of decentralisation. The research, based on a phenomenon-driven approach to management of archaeological and cultural heritage projects, highlights how Turkey's uncertain legal environment for rescue archaeology led to emergent, ad hoc management and funding solutions that mixed state and private involvement in novel ways through a multi-level outsourcing.

KEYWORDS

Archaeology; heritage chain; management; turkey; centralisation; decentralisation

1. Introduction

At Yenikapı, dozens of ancient shipwrecks were discovered at the junction point of two of Turkey's largest-ever engineering projects: the extension of the Istanbul Metro system and the construction of the Marmaray rail tunnel under the Bosphorus. The shipwreck finds were unprecedented in size, duration, and conservation complexity; they illuminate the challenges Turkey's centralised cultural heritage system faces in organising rescue archaeology projects.

This paper looks at potential contributions of management studies in similar contexts. Intriguingly, management approaches play a marginal role in archaeology, despite its global extent and the urgent need for good management practices in often hyper-complex excavation projects. The heritage field – of which archeology is undoubtedly a part – uses a variety of approaches, perspectives and literatures drawn from other disciplines (such as cultural policy, cultural economics, and urban development) but rarely examines important organisational issues, including human and financial resources, that affect professional practice.

In turn, applying managerial knowledge to archaeology and cultural heritage could also yield interesting insights for management scholars. Rather than merely an additional territory to apply a given body of knowledge, the intrinsic elements of the heritage fields could help promote management knowledge in more sophisticated ways: a further case in the direction of phenomenon-based research (Pfeffer 2009; Von Krogh, Rossi-Lamastra, and Haefliger 2012), in a context of idiosyncratic knowledge and professional organisations. Moreover, archaeology frequently appears as a management issue in infrastructure construction all over the world, and a very hard to deal with aside, as in the case of Yenikapi.

The paper is structured as follows: in the next section we review the most important literature in archaeology and cultural heritage, underlining the marginal role of the managerial/organisational approach. In Section 3 we introduce a new framework used for analyzing the Yenikapi project: the Heritage Chain and Structure-Conduct-Performance analysis. In Section 4, these two analytical tools are used to reconstruct the discovery and development of the Yenikapi excavations. Section 5 discusses the major insights emerging from the case study under our approach, the concluding section speculates on possible extension of the theoretical framework.

2. Literature review: fragmented perspectives

2.1. Heritage management and archaeology

For archaeologists, 'management' is often used as a synonym for grassroots participation or tourism development at archaeological sites (Edgeworth 2006; Hodder 2000, 2003; Sandlin and Bey 2006), practices that grew out of post-processual archaeological ethics (Meskell and Pels 2005; Wylie 2005). Though interested in the history of archaeology and nationalism (e.g. Goode 2007; Hamilakis 2007; Meskell 1998), and heritage as a form of governmental rationality ('governmentality', Smith 2004, 2006), archaeologists almost never study public administration, organisation, or finance.

Rather, managerial issues in archaeology are embedded in 'heritage management', a fragmented field including multiple disciplines (archaeology, art history, conservation, museology). Though comparative studies of national systems have illustrated global diversity in heritage management practice (Demoule 2007, 2009; Messenger and Smith 2010; Okamura and Matsuda 2011), these discussions focus on regional and national levels. Only rarely are finance, organisation, or human resources discussed in detail even on the aggregate level (but see Aitchison 2009; Willems 2005), and almost never at individual archaeological project scale.

The most influential source of management rhetoric and practice around archaeology, in fact, are international agencies such as UNESCO, ICOMOS and the World Bank, which have encouraged the adoption of architecture and urban planning tools – especially master planning – for protecting cultural heritage sites and making them accessible to the public (De la Torre 2002; Palumbo and Teutonico 2002; Ringbeck 2008). Archaeologists remain a junior partner in these policy initiatives, which nonetheless shape site outcomes.

2.2. Cultural policy and archaeology

Cultural policy is a crucial tool for understanding archaeological outcomes because archaeology is fundamentally a public sector activity in almost every country. Cultural policy studies – which examine guidelines and decisions of public administration on or for the cultural sector – is globally diverse and still emerging as a field (Bennett and Mercer 1998). Nonetheless, evident globally is a tendency to focus on policy *enunciation,* while largely ignoring *implementation* of new policies at the level of the organisation (Saetren 2005; Schofield 2001). Even the goals of cultural policy may not be evident (Czarniawska 1999; Zan 2006); many policies are never enacted, and those that are sometimes fail (O'Toole 2000, 265). The lack of theoretical attention to this issue makes it hard to understand the relationship – if any – between policy goals and management of cultural projects.[1]

Turkey's response to international policy initiatives clearly illustrates how this gap between policy and practice can affect archaeology. Following UNESCO's policy of demanding management plans for world heritage sites, Turkey amended its basic law on cultural heritage (Law 2863 or 1983) in 2005 to require site management boards at archaeological sites. But just as UNESCO provides no guidelines for implementing management plans, the revised Turkish law did not identify funding, human resources, or organisational structures for the new entities. As a result, it is unclear what effect – if any – policy will have on practice (Shoup and Zan 2014).

2.3. Urban development and archaeology

Globally, most archaeological excavations are not academic research projects, but emergency excavations at archaeological sites threatened by destruction from economic development. 'Rescue archaeology', as it is most often called, was incorporated into national laws in the third quarter of the twentieth century, when reconstruction in Europe and urban expansion in North America created widespread conflicts between development and archaeological preservation. The 1992 European Convention on the Protection of the Archaeological Heritage (also known as the Valletta Treaty) committed Council of Europe members that ratified it – including Turkey – to integrate archaeological assessments into urban planning. The Valetta Treaty was a decisive turn (on the policy level) from a reactive 'rescue archaeology' toward a more proactive

[1] The allied field of cultural economics also provides little understanding to management problems, as it usually considers production and consumption of culture at the aggregate level, attempting to use concepts of supply and demand or rational choice epistemology to measure the 'value' of cultural property or projects (see Rypkema, Cheong, and Mason 2011; Throsby 2001). But in fields such as archaeology – where the 'product' (archaeological artifacts and data) cannot be sold – assigning a 'market value' is largely impossible.

approach that came to be known as 'preventive archaeology', a term borrowed from 'preventive medicine' (Demoule 2012). If rescue archaeology projects feature archaeologists are 'behind the bulldozers and trying to save what they can', with preventive archaeology 'archaeologists are now in front of the bulldozers' (Demoule 2012, 612).

The 1990s also saw changes in the relationship between archaeology and the State. Until ca. 1990, both research and rescue archaeology was the exclusive duty of the state (except in a few Englishspeaking countries) – the so called 'state-led model'. Since then, however, outsourcing, privatisation and quasi-markets have been introduced to archaeology in many countries, allowing the creation of private entities that compete to supply archaeological services to developers (the so called 'developer-led' model, Bradley et al. 2010; see Messenger and Smith 2010 and Okamura and Matsuda 2011 for examples).

Despite these rapid changes, the study of how these new policies affect archaeological employment and funding is still in its infancy, and focuses on the national scale (Aitchison 2009). Academic literature on archaeology, in addition, predominantly focus on data from research excavations, even though 90% of global archaeology is rescue or preventive work. Combined with archaeologists' almost total avoidance of budgets, human resources, and organisation in their publications, understanding the organisation and management of individual archaeological projects constitutes a major gap in data and theory.

The Turkish case is particularly interesting: though it ratified the Valletta Treaty, there is no well-developed private sector in archaeology, and the country maintains a highly-centralised heritage management system without clear legal or administrative processes for integrating archaeology into development projects. Given this, it is especially vital to go beyond the legal framework to examine how such projects are organised and funded in practice, and how the interaction between legal frameworks and management practices affects outcomes at archaeological sites.

3. A composite framework: the heritage chain and structure-conduct-performance analysis

To approach the complexity of heritage projects involving archaeology and overcome the limits of cultural policy and heritage studies mentioned above, we have developed a composite analytical framework based on two concepts rooted in management studies and industrial organisation. The framework has emerged gradually from our experience on research in heritage management at the international level, and has proved to be a useful tool to describe and analyze complex phenomena.

First, drawing on the notion of the supply chain (all actors involved in an industry: from the acquisition of raw materials to the distribution of the final product, Lummus and Vokurka 1999), we have developed the concept of 'Heritage Chain'. Industrial organisation scholars believe that competition occurs not among single firms but among supply chains. Effective management of interdependencies among the 'links' is therefore crucial to fully integrate supply chains and thus guarantee a competitive advantage to each company and create value for the final consumers. The Heritage Chain translates the concept of supply chain to the heritage sector, by identifying the activities that take place from the production or discovery of heritage (the equivalent of 'raw material') to its use by the public (the 'final product'), including uses of the 'raw material' by actors within the chain (such as research or conservation). In this sense it approaches the system in an integrated way: it focuses not only on one single phase (excavation, or restoration), but on all the phases and actors involved in the system and in their relationship, which actually determine the outputs and the effectiveness (performance) of the system itself.

For analytical purposes, we aggregate the activities within the heritage chain into five macro-categories: preservation, the physical protection of cultural property and its informational content; archaeology, which studies the human past through its material remains; conservation, the process of caring for a cultural heritage site (including maintenance, restoration and reconstruction); research, or the production and communication of cultural heritage knowledge to the scientific community; and public access, which includes efforts to interpret and disseminate information about cultural heritage and its significance – including presentation of museums, sites, collections, or monuments to the public (see Table 1). While consistent use of terminology remains a challenge within the cultural heritage disciplines, we base our definitions on the influential Burra Charter (ICOMOS Australia 2013).

The major contribution of the Heritage Chain is to identify linkages and interdependencies among activities – a crucial notion in management studies since Thompson (1967) – to overcome the

fragmentation of professions and debates within the heritage sector. Although Table 1 presents the chain graphically in linear order, we are aware that the phases are often not sequential. For instance, protection might come both before archaeological excavation (setting rules, responsibilities and procedures for excavation) and after it (defining and implementing protection activities for excavated sites). Given these multiple relationships between activities, the need for a holistic approach is thus even stronger.

The five macro-categories can in principle be found in any country. However, the internal structure and meaning of each of them, and the relations between them vary considerably with context. In short, the 'who does what' in terms preservation, excavation, research, conservation and public access in China will be different from that of Italy, Turkey or the US: the Heritage Chain allows us to unpack this by understanding the specific nature of the heritage activities occurring in a given context.

The Heritage Chain was first used to study an interesting case of heritage management in Luoyang (China), both at the meso level (the local administration for cultural heritage, involving nine institutions – Zan and Bonini Baraldi [2012]) and the micro level (the Horse and Chariot excavation and museum, where the unexpected discovery of an important Eastern Zhou burial site has led to the creation of a fascinating museum and provided an opportunity to examine the whole heritage chain within a single case study – Zan and Bonini Baraldi [2013]). It was later applied to understand heritage management in Turkey at the macro (national) level (Bonini Baraldi, Shoup, and Zan 2013.).

In one of these works, we also started to integrate the notion of heritage chain with another model developed in industrial organisation: the Structure-Conduct-Performance (SCP) model (Bain 1959). The SCP paradigm asserts that competitive dynamics between actors are related to the *structure* and division of labor within the field (the supply chain), which influences the possible *conduct* of individual entities, and consequently their *performance*; in turn, performance has an impact on the structure.[2]2 The SCP approach is deeply rooted in the development of monopoly and oligopoly theory since the 1930s (Bain 1949; Chamberlin 1933; Robinson 1933; Sylos Labini 1956 [1967]; for a short reconstitution of this research tradition see Bianchi 2013).

In 'importing' the SCP model, we are innovatively developing it taking into consideration the unique characteristics of the heritage sector. In this light, the notion of structure refers to the number, features, and division of labor among players in the sector. Structure also incorporates legal aspects, yet without giving them the role of 'the' only/most important element, but rather as one of the possible driving forces in the sector.

Table 1

In this sector as elsewhere, laws are crucial but do not mechanistically determine all outcomes (Bonini Baraldi 2014): as always with 'conduct', there are degrees of freedom that produce specific results. Indeed, the notion of conduct bridges two important management research traditions, both of which weaken the determinism of structural elements (law included). Policies as well as strategies tend to some extent to 'happen', to 'emerge' in Mintzberg's words (Mintzberg 1978), rather than being deterministically shaped by policymakers. Actors indeed can make things happen, even individual actors, despite/in contrast to policymakers. To be transformed into results, policies must be 'managed' themselves, through managerial choices and actions (Bonini Baraldi and Zan 2015). Moreover, the notion of conduct is easy to relate with the notion of practice, particularly in professional contexts where hidden values tend to shape behaviors more than any explicit textual form, taking the form of emerging strategies (or policies).

Finally, the notion of performance tries to incorporate important elements that can be found in public management literature (the increasing citizenship of 'users' and their rights, as in the rhetoric of the 'client view'), as well as the idea of 'visitors' in new museology and community archaeology, and professional outcomes as perceived by professional communities (archaeologists, conservators, etc.). In addition, from

[2] In the original meaning of these terms, structural aspects of the industry, namely concentration, barriers to entry and scale economies, influence firms' behaviour, such as pricing and advertising. Performance refers to technical efficiency, the relation between prices and long-run costs, size, growth capacity and last, but not least, the social progress derived from these market dynamics: for Bain not only individual profit but also collective performance must be considered in the analysis of competition (II ed. 1967, 11, 12). Bianchi 2013

the economic point of view, the notion of performance diverges from the very basic concept of 'profit', articulating it terms of conditions of effectiveness and efficiency (Bonini Baraldi and Zan 2015). While the Heritage Chain was initially mostly a *descriptive tool*, combining it with the SCP framework provides an *analytical roadmap* to holistically analyze the effectiveness of a cultural heritage system in a particular context while considering both administrative and professional issues within a unitary picture (Table 2).

We apply this approach in Section 4, where the Yenikapi excavation will be analyzed through the lenses of the heritage chain and SCP analysis, focusing on protection (4.1), excavation (4.2), conservation (4.3), research (4.4) and public access (4.5). The framework was implicitly applied to the Horse and Chariot case in China, but was further developed in only one subsequent publication (Bonini Baraldi and Zan 2015). This is the first time in which the model is presented its complete form and applied to a specific case in one single study.

A large archive of internal management documents from the Yenikapı project exists, but we were not granted access despite repeated approaches to the responsible administrations. The details of public contracts were also unavailable, as they are considered trade secrets under Turkish law. Instead, our qualitative case study data were gathered from interviews and publications. We conducted several semi-structured interviews with former Istanbul Archaeological Museum (IAM) Director İsmail Karamut, former IAM archaeologist Metin Gökçay, two archaeologists who worked on the project, and an activist with a heritage preservation NGO. We reviewed over 60 academic books and articles, presentations from 7 academic conferences, and coverage in professional magazines including *Planlama* (urban planning) and *Arkitera* (architecture). Online archives of five major Turkish news outlets – *Milliyet, Radikal, CNN Türk, Hürriyet,* and *Cumhuriyet* – yielded over 200 articles on the Yenikapı excavations. Other sources consulted included press releases and legal documents. Most sources were in Turkish (translated by one of the co-authors). The data were used to reconstruct chronology and a light coding framework was used to identify key themes.

Table 2

4. The Yenikapi case study

4.1. Marmaray, metro, and transformative archaeological discoveries

Yenikapı is located along the southern shore of Istanbul's Historic Peninsula on the Sea of Marmara. In 1999, the area was identified as a transfer point between Marmaray, the M2 Metro line, and the existing seabus port, thus becoming the focal point for two of Turkey's largest, most complex and expensive engineering projects (IMM 2012; Lykke and Belkaya 2005; Özmen 2007, 23). The Historic Peninsula is both the city's most archaeologically sensitive area and an essential meeting point for mass transit projects, presenting serious challenges in balancing the conflicting needs of heritage and development.

Marmaray, opened in 2013, provides an underground rail connection between the European and Asian sectors of Istanbul under the Bosphorus strait. Proposed since the 1860s, modern feasibility studies began in 1985 and initial funding was secured in 1999 by the Ministry of Transportation (Çeziker 2011; Özmen 2007, 23). The €2 billion project was financed with loans from the Japanese Bank for International Cooperation and the European Investment Bank, with the Turkish government guaranteeing the remaining funding (Lykke and Belkaya 2005). The Marmaray engineering services contract (TL 100 million) was won in 2002 by Avrasya Consult, a partnership of three Japanese and one Turkish company that reported to the Ministry of Transportation. Avrasya subcontracted the TL 1.5 billion construction of the Bosphorus tunnel to a Japanese-Turkish partnership known as TaiseiGama-Nurol (TGN).

About the same time, the Istanbul Metropolitan Muncipality (IMM) planned an extension of its M2 underground metro line to connect with Marmaray at Yenikapi. Approved in 1998, the project's budget was TL168 million through 2011. The main contractor for tunnel and station excavations on the Metro project was a partnership led by Yüksel Proje A.Ş. (also the Turkish partner in Avrasya Consult) (IMM 2012).

Table 3

The two station projects occupied adjacent areas at Yenikapı, totalling 58,000 m2. Following the orders of Istanbul Regional Conservation Council (RCC), archaeological excavations for the Metro and Marmaray stations began in November 2004 and were expected to be completed prior to beginning construction of the stations (see Table 3). The archaeological excavations for the two stations operated as separate, parallel projects, with financial and administrative responsibility vested in TGN for the Marmaray area, and Yüksel Proje for the Metro area (Lykke and Belkaya 2005).

The first six months of excavations found remains of houses and market gardens from the Ottoman and late Byzantine periods. In April 2005 archaeologists found a well-preserved eleventh century shipwreck, confirming that the area had indeed been the Port of Theodosius known from literary sources. A second wreck was found in August with its cargo of amphorae still intact. These were the first shipwrecks found on land in Turkey and one of only a few such sites anywhere in Europe.

By January 2006 seven Byzantine shipwrecks had been discovered (Erdem 2005). Because conserving wet wood and organic materials is technically challenging and labor intensive, Istanbul Archaeology Museum Director Ismail Karamut invited conservation experts from İstanbul and Texas A&M Universities to join the project in August 2005, and n early 2006 the two universities won public tenders for conservation services (Özgün 2005). Shipwreck removal proceeded as a parallel project: the ships had to be kept wet constantly during the long process of uncovering and recording, then lifted by means of special metal cages for transportation to desalination tanks. In parallel, the Mayor of Istanbul proposed that the ships be exhibited inside the future Metro station, which would become a 'station-museum' (Erbil 2006; *Sabah* 2007). Other finds at Marmaray in 2006 included part of Constantinople's first city wall and an early Byzantine church. The RCC declared these areas a conservation zone, halting archaeological excavation and requiring the Marmaray contractors to eliminate a planned exit from the future station (Birgün 2006; Erbil 2006).

In 2007 and 2008, Yenikapı went from unusual to extraordinary and attracted worldwide media attention. By April 2007 a total of 19 shipwrecks had been found, with more expected. At this point, the Marmaray excavation teams began working 24-h days to reduce construction delays. Yet the number of shipwrecks increased to 24 by June 2007, 27 by December 2007, 30 by January 2008, and 32 by May 2008 (*Sabah* 2007; Erbil 2008a; *Cumhuriyet* 2008). In 2007, the 'Istanbul 8000 Years exhibition' on the Yenikapi excavations was organised at the Istanbul Archaeological Museum.

Another twist in the Yenikapı drama occurred in mid-2008, when excavation in the Metro area reached a clay layer below the shipwrecks which was initially presumed to be sterile – until a village of Neolithic wooden houses and a cemetery were discovered. Dating to 6000 BC, these finds extended knowledge of Istanbul's history by over 5000 years (Kınalı 2007).

Archaeological excavations ended at Marmaray in June 2009, with a total of 34 shipwrecks discovered, and tunnel excavation machines began work that December. However, archaeological work at the adjacent Metro site continued until February 2012, when a Neolithic-period clay surface with hundreds of human footprints was discovered, further delaying completion of archaeological excavations (*CNN Türk* 2012; Korkut 2012). Construction of the Metro station finally began in June 2012 (Yuksekhizlitren 2009).

Besides the shipwrecks, the excavations at Yenikapı produced tens of thousands of smaller artifacts. Upon discovery, artifacts were mapped and then sent to an on-site finds laboratory to be washed and dried. Urgent conservation interventions took place on site: all artifacts were registered, photographed, and then chosen either to enter the specialist laboratory, be sent to the inventory of the Istanbul Archaeological Museum, or to be reburied.

Given the volume and importance of the finds, initial plans for a 'station-museum' had to be modified: IMM and IAM decided to construct a multi-story museum at Yenikapı, and an architecture competition was held in 2011 with finalists selected in April 2012. Eventually, three more wrecks were discovered through February 2013 (*CNN Türk* 2012; Erbil 2013; *Habertürk* 2009).

4.2. Yenikapı and the HC-SCP analysis

Archaeological finds due to rescue excavations at Yenikapı exceeded the wildest expectations, creating delays of over 5 years, imposing substantial additional costs, and requiring the development of complex management systems. While reading about Yenikapi is fascinating, making sense of such complexity – where multiple actors intervene in multiple roles – makes evaluation difficult (for a synopsis see Table 4). In this section we

reconstruct the dynamics of the project through the Heritage Chain framework, while using the SCP analysis at each link of the chain. This approach helps identify the features specific to the Yenikapi management system, and locates its major weaknesses and strengths (Table 5).

Table 4

Table 5

4.2.1. Preservation

4.2.1.1. Structure. According to the Burra Charter (ICOMOS Australia 2013, 2), preservation of a cultural heritage site means maintaining its existing state and retarding deterioration. However, responsibility for preservation specific procedures followed depend on each country's legal and administrative system. Turkey's basic law on cultural heritage (Law 2863 of 1983) identifies Regional Conservation Councils (RCCs) and Museum Directorates (MDs) as the major players in preservation. RCCs are independent bodies of the Ministry of Culture and Tourism which grant protected status to historic and archaeological sites, approve restoration projects, and review zoning plans for protected areas. If looting, erosion, natural disasters, or construction threaten protected sites, RCCs can request urgent intervention from the Museum Directorates (peripheral non-autonomous branches of the Ministry which oversee archaeological sites, excavations and collections), usually in the form of rescue excavation. As such, the RCCs play a crucial role in the preservation process, managing conflicts between development and archaeology. However, rescue archaeology is not discussed at all in Law 2863 but only in a circular issued in 2011.

The law issued in 1983 was amended in 2004 to allow municipalities and provinces to form Conservation Implementation and Supervision Bureaus (KUDEB) to implement heritage conservation projects on the local level, thus introducing a new role for local administration in preservation activities. In Istanbul, the Planning Directorate of the Istanbul Metropolitan Municipality (IMM) works with the Istanbul KUDEB to prepare conservation zoning plans, which regulate the development activities that can take place near an immovable heritage site with the aim to ensure its preservation status (Madran and Özgönül 2005).

4.2.1.2 Conduct. Though the new legislation in theory makes the IMM Planning Directorate responsible for protection decisions, the conservation zoning plan for Istanbul's Historic Peninsula was only approved after the Yenikapı excavations, in 2012. As a result, the RCC remained in charge of protection decisions throughout the project. Marmaray officials initially sought to avoid cultural heritage impacts by consultation with the local museum directorate (the Istanbul Archaeological Museum – IAM) (Lykke and Belkaya 2005, 601). Though IAM Director İsmail Karamut was aware that the Port of Theodosius (fourth to twelfth centuries) was located in the area, he believed the proposed station site was less archaeologically sensitive because it was open water during antiquity.[3] Since shipwrecks had never previously been found on land in Turkey, the possibility was apparently not considered.

The RCC continued in an active role in preservation after excavations began: when the Constantinian walls of the ancient city were discovered in 2006, it ordered archaeological excavations to stop and declared the area a conservation zone (Güvemli 2006). In 2006, the RCC ordered removal of an exit from the Marmaray station design to protect a newly-discovered Byzantine church (Karabaş 2008).

4.2.1.3 Performance. Given the lack of any preventive archaeological regulation in Turkey, the site of Yenikapi was chosen for the Marmaray and Metro station before any preventive excavation, putting its preservation at risk. As a consequence, the RCC required test excavations at the construction area only in 1999, after Yenikapı was chosen as the station site, and then asked for full-scale excavations in 2003 (Özdamar and Nakanishi 2010, 77). Only two small parts of the site will be preserved (the Byzantine church and the Constantinian wall), while the largest collection of ancient shipwrecks ever found in Europe on land were removed hastily, and the rest of the deposit has been mostly destroyed.

[3] Interview with İsmail Karamut, May 02, 2011.

4.2.2. Archaeological excavation

4.2.2.1. ***Structure.*** Rescue archaeology – or the procedure to recover data and artifacts from known archaeological deposits that are threatened – is not discussed at all in Law 2863. The first rescue excavations in Turkey began in the mid-1960s in dam construction areas, and used a variety of ad hoc management models without a clear legal basis (Çeziker 2011). Similarly, in 2003 the RCCs entrusted the Istanbul Archaological Museum (IAM – the local Museum Directorate) to start rescue excavation at 5 train stations (including Yenikapı) without a specific process to be followed and with no additional resources. The first document to outline rescue archaeology procedures was issued in 2011 with the 'Circular on the implementation of archaeological survey research, testing and excavation works relating to cultural and natural heritage' (MoCT 2011). Under this Circular, Museum Directorates are the only bodies permitted to conduct rescue excavations. However, the 2011 Circular was issued after most of the Yenikapı shipwrecks had been found and removed, and at any rate did little to address the fragmentation of responsibilities, lack of resources, and unclear legal framework surrounding rescue excavation.

4.2.2.2. ***Conduct.*** Archaeological excavations at Yenikapı lasted from 2004 to 2013 and covered 5.8 ha. The scale of the discoveries sparked a crisis: the IAM was legally responsible for the Yenikapı excavations but had only 30 archaeologists on staff (already overloaded with their ordinary workload), no discretionary budget, and no legal authority to hire temporary employees. The urgent need for additional workers and specialists was led the IMM and MoT to force theconstruction firms (Karkin AŞ for Metro and Polat AŞ for Marmaray) to hire freelance archaeologists, conservators, unskilled workmen, and specialists for their excavation areas, along with the necessary facilities and equipment (including laboratory structures and vehicles).[4] In total, staff hired by the two firms included 30–50 freelance archaeologists, 20 specialists, and 200–300 workmen, supervised by 6–10 archaeologists from IAM.

Though spatially contiguous, the Metro and Marmaray excavations were two different projects and had separate administration, financing, and personnel. While formally, Karkin and Polat and their freelance employees were subcontractors to the Metro and Marmaray construction consortiums, in practice, however, the IAM managed the freelance archaeologists and played a key role in negotiating allocation of resources for the excavation. In short, this dual project management system placed scientific-professional issues in the hands of the IAM and organisational-logistical issues with the contractors.

4.2.2.3. ***Performance.*** Though the system effectively solved some of the problems imposed by Turkish law, it also gave rise to contradictions and conflicts. Regular weekly meetings between the IAM director and representatives of the engineering firms, construction firms, MoT, and IMM served as the locus of negotiation over staffing levels, timing, and resource allocation. Coordination required enormous amounts of time: IAM director Karamut estimated that he spent 20 h per week in meetings with construction firms, engineering firms, the MoT, and the IMM during 2005–2008. Differing incentives also caused friction between scientific values and construction interests: the archaeologists valued careful recording, but the contractors valued speed since they were paid by the cubic meter of soil excavated.

Progressively greater delays led the Ministry of Transportation to demand a 24-h, seven-day excavation schedule for the Marmaray area in April 2007. However, only 2 IAM and 6 freelance archaeologists were available on the night shift to supervise 200 workers, compromising excavation quality and creating opportunities for artifact theft (Erbil 2008b). It also led to radical differences in working rhythms in the two areas. Marmaray workmen and freelance archaeologists went on strike three times from 2008 to 2010 over unpaid wages, unpaid social insurance, and pressure to work fast at the expense of scientific accuracy (Archaeologists' Association 2008). Nonetheless, Karamut felt that the IAM had been successful in managing the excavation as a single scientific project, and in diverting resources from one side of the project to the other when needed. This claim is perhaps borne out by the project's impressive publication record (see section 4.2.4 below).[5]

[4] Details, unfortunately, are not available: public contracts are considered commercial secrets under Turkish law.
[5] Interview with İsmail Karamut, May 16, 2011.

4.2.3. Conservation

4.2.3.1. ***Structure.*** Once a heritage property is identified as 'requiring protection' under the law, the Turkish state assumes responsibility for its conservation, including maintenance, restauration and reconstruction (ICOMOS Australia 2013). In Turkey a number of administrative bodies prepare conservation projects for immovable property under their responsibility (Bonini Baraldi, Shoup, and Zan 2013). Turkish law (Law 2863, Articles 24–25, 41) gives IAM particular responsibility for cataloguing, restoration and maintenance of movable cultural heritage – including archaeological artifacts – found in Istanbul Province. However, conservation of the remains found at Yenikapı required significant organisational innovation, with artifact and shipwreck conservation under different management structures.

4.2.3.2. ***Conduct.*** The two construction firms organised field conservation laboratories, where 12 freelance conservators cleaned, photographed, and catalogued artifacts. This system seems to have interfaced smoothly with existing law and administrative routines, under which Museum Directorates have authority over archaeological artifacts (Law 2863, Articles 24–25, 41). However, conservation of the wet wood required expertise from outside of the MoCT. In 2006, IAM and MoT outsourced shipwreck conservation in the Metro area to a joint venture of İstanbul and Texas A&M Universities, and in the Marmaray area to İstanbul University alone. Both contracts were treated as one project from the professional point of view, managed jointly by the two universities with oversight from IAM.[6]

4.2.3.3. ***Performance.*** IAM archaeologists accessioned over 35,000 artifacts by 2012 (Eyigün 2010). Texas A&M has conducted many underwater archaeology projects in Turkey and effectively helped İstanbul University scholars develop the necessary facilities and technical conservation skills. Logistical challenges for shipwreck conservation included irrigation (organic materials must be kept wet constantly once excavated), construction of desalination tanks, lifting, and transportation. Moreover, excavation around the ships often left them raised up to 6 m above the surrounding excavation, creating obstacles to movement around the site and complicating scientific recording.[7] The contractors and engineering firms were also reluctant to accept the time and cost associated with the shipwrecks.[8]

Since public contracts are not public documents, overall conservation costs are unavailable. However a few indicative figures were published: the first 14 shipwrecks cost a total of €700,000 to lift, and desalinization pools for the Metro shipwrecks alone cost over €1 million by 2008 (Eyigün 2010). By 2013, 37 shipwrecks were moved to desalinization pools, 9 managed by Texas A&M and the remaining 28 by Istanbul University (*HDN* 2011), with financial responsibility divided between the IMM and Ministry of Transportation (*HDN* 2011). Shipwreck conservation, therefore, added yet another parallel organisational structure to the already complex excavation system, with a separation between operation, financial issues, and scientific supervision.

Istanbul University's Kocabaş estimated in 2011 that conservation work on the ships would require 10 years of further work (*HDN* 2011). Institutional fragmentation will also continue, as financial responsibility for the ships will be divided between the IMM and the MoT according to the area where the ships were found. This duplication of efforts may create an obstacle to the completion of conservation work in the long term.

4.2.4. Research

4.2.4.1. ***Structure.*** Turkish law grants publication rights personally to excavation directors (2863, Article 43). In Turkey, as in many other countries, assigning such exclusive rights to one individual or institution can lead to significant or permanent delays in publication, limiting the production and diffusion of scientific knowledge. In the case of rescue archaeology, the MoCT circular specifies that 'Publication rights belong to the administration actually carrying out the work, but the Museum Directorate can share these with mission members according to subject' (Article 14(f)(7)).

[6] Interview with Metin Gökçay, May 20, 2011, Istanbul.
[7] Interview with Ahu Çeziker, May 12, 2011, Istanbul.
[8] nterview with İsmail Karamut, May 16, 2011, Istanbul.

4.2.4.2. ***Conduct.*** At Yenikapı, IAM Director Karamut was unusually active in inviting outside institutions from Turkey, Europe and the United States to participate in specialised studies on topics such as osteology, geology, geophysics, and dendrochronology, and took an unusually open approach toward publication rights (Kocabaş 2008).

4.2.4.3. ***Performance.*** The open approach adopted by the Director seems to have sped up publication: as Karamut noted, 'for the first time in urban archaeology done by the Ministry of Culture, there was a book published before the end of the excavations'.[9] Even before excavations were completed in 2012, seven major volumes, 50 academic articles, at least 7 academic conferences in Turkey, and dozens of presentations at international conferences were produced. Major publications on the archaeological aspects of the project have been largely produced by IAM staff archaeologists, illustrating both Karamut's widespread delegation of publication rights and suggesting that, despite the museum staff's heavy workload, they did not neglect academic publication. Outside the IAM, Istanbul and Texas A&M University conservators have published most of the material on the shipwrecks, while scholars from other institutions have developed specialised studies on topics such as palaeogeology and palaeodemography.

4.2.5. Public access

4.2.5.1. ***Structure.*** Public access involves all issues related to interpretation, including museum and site presentation. In Turkey, archaeological site and museum management have historically been centralised under the Ministry of Culture and Tourism (MoCT) through its peripheral branches (Museum Directorates). In 2008 Heritage Museums and archaeological sites under MDs responsibility accounted for 68% of sites, 67% of visitors, and 92% of ticket revenues of all sites and museums open to the public in Turkey (Bonini Baraldi, Shoup, and Zan 2013). The prominence of the Ministry is reflected in the total absence of local administration, which until 2004 played an almost non-existent role in heritage management and conservation. Several laws issued in 2004 and 2005 made deep changes to the system, increasing the role of local government and the private sector, also in the management of museums and listed monuments by municipalities via the KUDEB institutions (Law 5226/2004). In accordance with this new role for local administration, in 2005 Istanbul's Mayor suggested building a museum within the train stations (IMM 2005).

4.2.5.2. ***Conduct.*** By 2008 the IMM Urban Design Group of the IMM began work on a tender for invited architectural competition to be held in 2010. Yet, in 2009 IMM outsourced the architectural design competition for the proposed museum to the special agency formed to manage Istanbul's turn as 2010 European Capital of Culture. However, Istanbul 2010 changed the concept to an 'archaeo-park' and 'transfer point' that would 'deal with the meaning and purpose of the city itself' (Keskin 2009).

The Istanbul 2010 agency was dissolved in January 2011 before launching the competition, whereupon the IMM again resumed responsibility, announcing the'Yenikapı Transfer Point and Archaeo-Park International Preliminary Architecture Project' in 2011. Three finalist designs were chosen in April 2012 (IMM 2013), but the project webpage was taken down in early 2014 and IMM's website offers no information about future museum plans. Other visions for the Yenikapı area have also emerged, including proposals for a space for million-person political rallies and the closure of the shore road to enable public access to the waterfront.

4.2.5.3. ***Performance.*** Domestic and international media covered the project extensively and was largely positive, though critical articles noted the cost and delays associated with the project and controversies over strikes, alleged looting, and conservation problems. Media policy seems to have been managed by IMM, whose archaeologists regularly gave interviews and tours, though our research did not discover a specific media policy. Nonetheless, the authors' impression is that media coverage has been generally factual and only moderately sensational.

[9] Interview with İsmail Karamut, May 9, 2011, Istanbul.

At the same time, several major museum exhibits were produced even before excavations were complete: the IAM's exhibit 'In the Daylight: 8000 Years of Istanbul' (Pekin and Kangal 2007) displayed hundreds of artifacts, two exhibits on museum design appeared in 2008, and finds and photographs were displayed at the Sakip Sabancı Museum (2010) and the Rahmi M. Koç Museum (2012).

Plans for a permanent museum facility, however, have met repeated delays. Despite the IMM's admirable enthusiasm, financial, legal, and administrative feasibility issues were largely ignored during the project's transformation from a single museum building to a grandiose urban design plan. Uncertainty about institutional 'ownership' was rife: in 2010, the MoCT suggested that the Ministry of Transportation pay for the museum; MoT declared this legally impossible, and instead asked the Japanese investors in Marmaray for funds (Özdamar and Nakanishi 2010, 110, 116). In any case, what institutional status the museum will have, who will manage it with what staff, and who will fund its operating costs (beyond construction costs) remain open questions.

5. Discussion

As in other professional activities, evaluating results in archaeological projects is not an easy task.

The SCP analysis presented above helps illuminating the case and illustrate asymmetries in performance within the Heritage Chain. On analysis, some 'links' in the Yenikapi chain appear as well-developed, others less so, and levels of performance vary considerably.

As a rescue archaeology project Yenikapı was quite a success: hugely significant finds found during excavation have been protected from destruction, while allowing a major construction project to proceed. However, under preventive archaeology legislation, a project such as the Marmaray and Metro stations might never have been designed in this location, preserving the archaeological deposit: in terms of preservation the project appears less unambiguously positive, as it led to the destruction of a site with unique potential, with only a few architectural remains preserved *in situ*. Yet, under a preventive archaeology regime, the major discoveries at Yenikapı would likely never have been made: who would have paid for thousands of cubic meters of excavation and conservation of 37 shipwrecks without the financial pressure of a megaproject? Indeed, though more thrilling finds are certainly nearby, no one proposes further 'on-purpose' archaeological investigations in the area. The whole project represents a mega-case of the trade-off between preservation and economic development.

Excavation, despite considerable time pressures and personnel issues, recovered huge quantities of delicate artifacts but experienced serious coordination problems both from the professional and organisational point of view. Research has been published rapidly in high-quality journals and books, while field conservation of ships, their cargoes, and the Neolithic village were highly successful. Yenikapı was communicated effectively to the public, with intensive media coverage and several major museum exhibits even before completion of the excavations themselves.

Yet, finding a permanent home for the 37 shipwrecks and tens of thousands of small finds from Yenikapı, has been a great challenge: eight years of discussion and project delays has succeeded only in removing museum construction from the center of the agenda, and travelers alighting at Yenikapı station are met with colorful neo-Ottoman décor that makes no reference to archaeology. The sense of emergency that motivated the excavation extended to publication, but not to conservation facilities or museum construction. Here institutional design plays a key role: Turkish public administration is inflexible and ill-adapted to quick decision-making.

While we do not believe that this asymmetry was intentional, the notions of Heritage Chain and SCP help us identify the 'emergence' of heritage policy (or also 'practice') in this particular case. Better acknowledgment of the interdependencies among the different phases of the chain in terms of structure, conduct, and performance also helps identify emergent strengths and weaknesses. In this sense, two elements of the system seem fundamental. Such elements are, quite paradoxically, its extreme centralisation on one hand, and its ongoing process of decentralisation on the other.

5.1. The effects of centralisation: between state-led and private-led archaeology

Extreme centralisation emerges as a determining element of the system along the whole Heritage Chain. Museum Directorates appear as the nodal actors: they initiate rescue and research archaeological projects;

are the only administrations who can carry on archaeological excavations; and are responsible for artifact cataloguing and preservation, research and publications, and direct management of heritage sites and museums. The whole weight of the heritage chain is 'on the shoulders' of those ministerial entities. However, MDs are not autonomous institutions. They depend on the Ministry of Culture and Tourism in Ankara for basic management decisions: they cannot hire employees (both permanent and temporary staffing levels are decided by MoCT), directly manage their own budgets, nor decide scientific policy or strategy. Moreover, they have limited numbers of archaeologists, and no additional staffing or funding is allocated for rescue projects – though temporary transfer of staff from other museums to assist in special projects is forseen (MoCT 2011, Articles 14–16). The result is an overload of duties, with insufficient autonomy and resources to carry them out.

This extreme centralisation within the MoCT, combined with the silence of Turkish law on preventive archaeology, led to a series of challenges at Yenikapı. The project's unique, ad hoc management structure resulted from the IAM's inability to hire temporary staff or access emergency funds. To overcome these obstacles, IAM relied on a multi-layered outsourcing approach at different links of the Heritage Chain: excavation, archaeological labor, logistics, and equipment were outsourced to IMM (for the Metro project) and the MoT (for the Marmaray project), both of whom (re)outsourced to construction contractors and subcontractors, creating parallel, multi-layered systems for the delivery of human and financial resources for excavation. IAM also outsourced conservation of the shipwrecks to MoT and IMM, who in turn (re)outsourced the professional work to the joint venture of Istanbul University and Texas A&M University. The saga of the proposed museum is another case of complex outsourcing: from the central state (MoCT) to the municipality (IMM), from the municipality to Istanbul 2010, and then back to the municipality before being outsourced again to an external architectural competition.

The emergent picture is a hybrid of State-led and private-led archaeology, where a multi-layered approach to outsourcing emerges as an unexpected consequence of extreme centralisation. This approach was 'accidental' (or emerging – to cite Mintzberg 1978): none of the outsourcing decisions were planned, but rather resulted from improvisation due to 'gaps' in the law (rescue archaeology procedures are not legally defined), the absence of expertise (in the case of ship conservation), or administrative rigidity (the museum's inability to hire new staff). While the *structure* designed in the legislation (the deliberate policy) calls for strong centralisation, what emerges in *conduct* is a more decentralised system, in which the state maintains a steering (though strong) role, and specific professional and logistical services are provided by non-state entities.

The consequences in terms of *performance* are both positive and negative. On the positive side, the absence of legal rigidity allowed the creation of customised management solutions that suited the unique financial and logistical problems of the site. But the lack of legal clarity created jurisdictional conflicts between RCC and IAM over archaeological methodology, raising the question who, in fact, was in charge of excavation decisions. Also, though the outsourcing of ship conservation seems to have 'worked', the contract details were secret: who paid for the conservation, the responsibilities of the contractor, or who exactly was in charge remains opaque, even to those involved.

Though largely effective, the emergent outsourcing solutions seem to have increased the overall complexity, cost, and level of conflict within the system. The contrast between the locus of professional control (IAM) and that of human and financial resources (the construction firms) created conflicts over working conditions, pay rates, and working speed, resulting in strikes and quality concerns. The construction firms, moreover, were also contracted for construction work on the Metro and Marmaray stations, raising potential conflicts of interest and doubts about the transparency of the process. Asymmetries in power (and knowledge) are also evident: the director of the museum – without any background in project management or costing – had to singlehandedly confront his counterparts in the construction firms, IMM, and Ministry of Transportation over issues affecting time-sensitive multibillion-dollar construction projects.

Most crucially, the emergent solutions, despite their innovative nature, do not resolve the underlying problems of rigidity, over-centralisation, and insufficiently developed legal frameworks for rescue and preventive archaeology. Despite huge investments and development of excavation and conservation skills, no mechanism for institutional learning emerged and the Yenikapı solutions are not easily replicable. This is a recurrent theme in Turkish rescue archaeology, where the management lessons from the Keban Dam (1970s),

Atatürk Dam (1980s) or Baku-Tbilisi-Ceyhun Pipeline (1990s) rescue archaeology projects were essentially ignored and did not contribute to solving emergent issues for future project such as Yenikapı (Çeziker 2011).

5.2. The effects of decentralisation: between central and local administration

Despite the centralisation of the overall heritage system – designed around the role of the 'Ankaradependent' Museum Directorates – Yenikapi demonstrates ongoing efforts toward decentralisation. This is true both in term of preservation and public access which – curiously enough – were the weakest links in the Heritage Chain.

In terms of preservation, recent legislative developments have fragmented responsibility for protecting cultural heritage among the central and the local level. This is evident both in the establishment of the Conservation Implementation and Supervision Bureaus (KUDEBs) in some local administrations, and in the role of the IMM Planning Directorate in preparing conservation zoning plans. Despite their potential, however, local bodies have failed to play a significant role within the system. Conflict between MoCT and IMM over protection responsibility arose throughout the Yenikapı project: though normally the IMM Planning Directorate would have been responsible for protection decisions, legal wrangling delayed approval of the conservation zoning plan for Istanbul's Historic Peninsula until 2012. This left the RCC in charge of protection decisions during the excavations, under its power to regulate protected sites lacking CZPs. While we are unsure why these delays took place, the presence (or absence) of adequate competences within the Municipality is a question. We also note that our inability to access this type of data, in itself, is an observation on the nature of the Turkish administrative tradition.

In terms of public access, both the initial 'Station-Museum' and later 'Archaeological Park and Transfer Point' concepts were suggested by IMM, representing an assumption of responsibilities traditionally the domain of MoCT – a contributing element, no doubt, to the ongoing uncertainty about the nature of the museum institution and the responsibility for protecting Yenikapı as a whole. The municipality's decision to involve the Istanbul 2010 Agency in the project imposed significant (and perhaps unforseeable) delays, and might also reflect the incapacity of the Municipal administration to run it directly. More generally, the case exemplifies the new trend in Turkey for metropolitan municipalities to exploit cultural heritage for urban prestige and economic development through tourism, a trend made possible by decentralisation initiatives since 2004 (for the case of Gaziantep, see Bonini Baraldi and Shoup 2014). These initiatives often are accompanied by unrealistic expectations and a lack of professional expertise in cultural heritage within municipal administrations: the predominance of architectural perspectives within the municipality may have contributed to the lack not only of a professional museological design, but also of serious consideration of the institutional and financial frameworks
of the museum.

While conflicts between centralisation and decentralisation might be new for Turkey, some international research on heritage management has already demonstrated the sensitivity of the process. Italian experience illustrates that conferring greater autonomy to ministerial peripheral administrations (Bonini Bonini Baraldi 2014) and devolution of responsibilities to local authorities (Zan, Bonini Baraldi and Gordon 2007), can seriously undermine both professional and administrative control if not carefully managed. In short, research shows that while legal innovations are essential (at least in civil law countries), their effects should not be taken for granted, and their implementation should be accompanied by a serious professionalisation of local administration. This remains an issue for Turkey and many other countries which are currently experimenting with decentralising cultural heritage.

6. Concluding remarks

Archaeologists and heritage scholars have taken strong stands on urban planning in Istanbul, especially in terms of social justice (Aksoy and Robins 2011). Yet there is no parallel attention to the legal, administrative and managerial systems that determine both professional and public policy outcomes. In the Yenikapı case, for example, administering a unique site as two separate projects brought serious problems such as duplication of decisions, delays in decision-making, added organisational costs, labor conflicts and likely differences in timing, quality and level of maintenance for materials found in the same archaeological area. The HC and SCP analysis allows us to link managerial and organisational issues to multidimensional results.

Restricting our analysis to laws and institutional settings that define the relevant actors (the structure), without a careful understanding of conduct (practice), would not have allowed us to understand the strengths and weaknesses (performance) that emerged.

Though reconstructing the history of the case was difficult, the utility of a management studies approach is evident: using the Heritage Chain notion and the SCP framework allowed us to analytically structure a hyper-complex case. If the project's managers had used a similar approach, less conflict, waste, cost and ineffective solutions might have transpired. The story of Yenikapı suggests that archaeology could benefit from a more systematic application of management knowledge.

But not only: from a theoretical point of view, the careful and situationally-appropriate adaptation of an already-existing framework in management studies such as the supply chain is an interesting experiment for those interested in phenomenon-based research. The approach avoids the extremes of generalisation (ignoring institutional and historical features), and overly-specific, ad hoc investigations that ignore already-studied issues and existing analytical tools.

Moreover, the re-utilisation in innovative ways of already existing notions and frameworks – such as the SCP analysis inside each link of the Heritage Chain – provides a creative addition to phenomenon-based research, while identifying avenues for further theory development within management studies. Whether the rediscovered SCP framework could be applied more – or more consciously – to management studies, in general or in the context of the supply chain, is a question that we leave for further research. Certainly many current strategic management scholars would be surprised to find basic elements of their approach prefigured in 1930s scholarship that they remain unaware of – an issue that questions some basic mechanisms of knowledge accumulation in the field.

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Table 1. the heritage chain: major macro-activities.

Preservation	Archaeological excavation	Conservation	Research	Museum Presentation
• regulation of uses of historical finds	• on purpose excavation	• individual intervention	• categories and periods	• permanent exhibitions
• regulation of commerce of historical finds	• salvage excavation	• standard setting	• disciplinary focus	• temporary exhibitions
….	….	….		• access and presentation
• inscription of art works			…	
• inscription of architectures				
…				

Source: Zan and Bonini Baraldi (2013).

Table 2. the heritage chain and the structure/conduct/performance analysis.

	Preservation	Archaeological excavation	Conservation	Research	Museum Presentation
Structure	Actors and activities related to preservation	Actors and activities related to archaeological work	Actors and activities related to conservation	Actors and activities related to research	Actors and activities related to museum presentation
	Who does what: Division of labor, tasks, duties, and responsibility between actors in various links of the chain as defined by the legal and institutional system				
Conduct	Actual practices and actions related to preservation	Actual practices and actions related to archaeological work	Actual practices and actions related to conservation	Actual practices and actions related to research	Actual practices and actions related to museum presentation
	How? How things are done along the chain: actual practices and actions				
Performance	Efficiency and effectiveness of preservation activities	Efficiency and effectiveness of archaeological work	Efficiency and effectiveness of conservation activities	Efficiency and effectiveness of research activities	Efficiency and effectiveness of museum presentation activities
	Results: What are the professional and organizational implications o f structure and behaviors?				

Source: Zan et al. (2015).

Table 3. yenikapı excavation chronology.

Date	Ship-wrecks	Event
1999		yenikapı chosen as site for two subway stations
november 2004		archaeological excavation begins at Metro and Marmaray
april 2005	1	first shipwreck found
august 2005	2	Second shipwreck found; C. Pulak invited to help with conservation
January 2006	8	Conservation tender won by Istanbul + texas a&M universities, Major proposes an on-site station museum
May 2006	8	Church and Constantine Walls discovered, declared conservation areas
april 2007	19	Move to 24-h work schedule
June 2007	24	Istanbul 8000 years exhibition opens at IaM
December 2007	30	Istanbul 8000 years exhibition closes
July 2008	32	Discovery of neolithic village
June 2009	34	Marmaray excavations conclude
2009–2011		Shipwreck lifting and excavation continues in Metro area
June 2011		IMM launches architectural competition for yenikapı Museum
february 2012		neolithic footprints discovered
april 2012		finalists in museum competition announced
June 2012		final shipwreck lifted; Metro excavation concludes
2013	37	three additional shipwrecks are foound

Source: authors' elaboration from various newspaper articles and documents.

Table 4. actors involved at yenikapi.

Acronyms	Name	Role in Yenikapi
Mot	Ministry of transportation	• responsible for the Marmaray project (CP) • Contracts avrasya consult for the Marmaray project (CP) • Is financially responsible of conservation (with IMM) (C) • Is entrusted by IaM to hire temporary staff for archaeological and conservation work at Marmaray (ae & C) • Contracts tGn to hire temporary staff for archaeological and conservation work at Marmaray (ae & C) • outsources shipwreck conservation to Istanbul university in Marmaray area (C)
	Japanese and european Development banks	• finance the Marmaray project (CP)
	avrasya Consult	• Wins the competition for the enjeneering project of Marmaray issued by Mot (CP) • Subcontracts the construction for the Marmaray project to tGn (CP)
tGn	taisei-Gama-nurol	• Is contracted by avrasya Consult for the construction of the Marmaray project (CP) • Subcontracts Polat Sa for construction at Marmaray (CP) • Is Contracted by Mot to hire temporary staff for archaeological and conservation work at Marmaray (ae & C) • Subcontracts Polat aŞ to hire temporary staff for archaeological and conservation work at Marmaray (ae & C)
IMM	Istanbul Metropolitan Municipality	• responsible for the Metro extension (CP) • Contracts PyP for the Metro extension (CP) • Is financially responsible for conservation (with Mot) (C) • Is entrusted by IaM to hire of temporary staff for archaeological and conservation work at Metro (ae & C) • outsources shipwreck conservation to a joint venture of Istanbul and texas a&M university in Metro area (C) • Contracts PyP for hiring of temporary staff for archaeological and conservation work at Marmaray (ae & C) • takes initiative for the architectural competition for the museum construction (Pa) • outsources the architectural competition to Istanbul 2010 agency (Pa), then re-takes responsibility (Pa) • Manages media policies (Pa)
PyP	Partnership let by yüksel Proje a.Ş.	• Is contracted by IMM for the Metro extension (CP) • Subcontracts Karkin aŞ for constructing the metro extension (CP) • Is contracted by IMM to hire temporary staff for archaeological and conservation work at Metro (ae & C) • Subcontracts Karkin aŞ to hire temporary staff for archaeological and conservation work at Metro (ae & C)
MoCt	Ministry of Culture and tourism	• Decentralizes authority for the Museum to IMM (CP)
rCC	regional Conservation Council	• takes protection decisions until 2012, in absence of an approved Conservation Zoning Plan (P) • requires test excavation in the construction area in 1999 (P) • asks for full excavation in 2003 (P & ae)

Table 4. (*Continued*).

Acronyms	Name	Role in Yenikapi
IaM	Istanbul archaeological Museum (the local Museum Directorate of the ministry of Culture and tourism – MoCt)	• Is consulted in choosing the construction zone by Mot (P) • legally responsible for yenikapı excavation (ae) • outsources to IMM (for Metro) and Mot (for Marmaray) the hiring of temporary staff for archaeological and conservation work (ae & C) • Is responsible of freelance archaeologists from the scientific point of view during excavation work (ae) • Is responsible for cataloguing and preserving movable heritage (C) • entrusts IMM and Mot with shipwreck conservation (C) • Is responsible for research (r) • recruits turkish and international universities for specialised studies (r) • organises temporary exhibitions (Pa)
	Karkin aŞ	• Is subcontracted by PyP for construction of Metro extension (CP) • Constructs the yenikapı Metro station (CP) • Is subcontracted by PyP to hire freelance archaeologists and workmen and is administratively and financially responsible for the metro archaeological excavation (ae) • organise field conservation laboratories, hiring freelance conservators (C)
	Polat aŞ	• Is subcontracted by tGn for construction at Marmaray (CP) • Constructs the yanikapı Marmaray station (CP) • Is subcontracted by tGn to hire freelance archaeologist and workmen, and is administratively and financially responsible for the Marmaray archaeological excavation (ae) • organise field conservation laboratories, hiring freelance conservators (C)
	Istanbul university	• Is contracted by IMM to perform shipwreck conservation on Metro area (in joint venture with texas a&M university) (C) • Is contracted by Mot to perform shipwreck conservation in Marmaray area (C)
	texas a&M university	• Performs shipwreck conservation on Metro area (in joint venture with Istanbul university) (C)
	Istanbul 2010 agency	• Is contracted by IMM to design an architectural competition for the museum (Pa)

notes: CP – construction project; P – preservation; ae – archaeological excavation; C – Conservation; r – research; Pa – Public access.

Table 5. HC and SCP analysis at yenikapı.

	Protection	Archaeological excavation	Conservation	Research	Museum Presentation
Structure	• RCC registers urban archaeological sites and approves CZP • IMM Planning directorate decides on approved CZP • No law for preventive archaeology • Rescue archaeology can be initiated by RCC, Museum Directorate or MOCT	• 2003: MoCT gives IAM responsibility for rescue excavation at 5 train stations (including Yenikapı) • 2011 Circular specifies museum directorates will conduct rescue excavation with MOCT permission • Rescue excavations are carried out within existing museum structure and resources (no specific structures/ resources for urban archaeology)	• Law 2863 gives museums responsibility for artifact cataloguing and preservation • Excavation director can be supported by external experts on specific scientific matters	• Law 2863 grants publication rights to the excavation director, who can grant it to other experts on specific scientific issues	• State Museums are managed by the Central Ministry through Museum Directorates • 2004: new laws open the possibility of a new role for Municipalities in the Museum and heritage system • Proactive role of IMM • Initial agreement (2005) between IAM and IMM to build an onsite museum
Conduct	• Underestimation of potential finds (by archaeologists also) • Delays in the approval of the CZP • RCC instead of IMM decides on protection	• Ad hoc solution for Yenikapı excavation: freelance archaeologists and other specialists are hired by construction firms • "Per cubic meter payment" at Marmaray • Double hierarchy: Split between professional and logistical-organizational responsibility (Marmaray/Metro)	• Artifacts: The museum is supported by a on-site laboratory crew of freelancers and workmen • Shipwrecks: Lack of skills within the museum leads the director to ask Texas A&M university and Istanbul University experts for advice and cooperation	• Open approach of the excavation director who gives publication rights to various professionals involved in the project	• 2008: IMM Urban Desing group works on architectural tender • 2009: involvement of Istanbul 2010 Agency – change plan into "transefer point and archeo park" • 2010: museum project returns to IMM • 2012 Design competition
Performances	• In 1999 Yenikapı is selected as Marmaray and Metro transfer point without preventive excavation before the location decision • the deposit is destroyed and the transport hub is created • RCC intervention saves only 2 small parts of the site (church and wall)	• Overload of work for the excavation director and museum staff as a whole • Conflicts between scientific values and incentives of construction firms • 24-hour work leads to quality and control problems in the excavation • Strike of archaeologists and workmen leads to delays in excavation in Marmaray • Though site is successfully managed as a single scientific project the two double hierarchies (Marmaray and Metro) lead to coordination problems • Conflicts between RCC and IAM over excavation techniques	• Artifact conservation is successfully included within Museum routines • Shipwrecks: ○ Good cooperation and transfer of knowledge between universities ○ Additional layer of organizational complexity ○ Conflicts between professional values and contractors (to find resources) ○ Logistical problems to excavate and conserve the ships contemporaneously ○ What about conservation in the long term?	• Very rapid publication even before excavation ends	• Important media coverage • 3 temporary exhibitions on Yenikapı + 2 on architectural projects • Museum: Yenikapı ○ delays and ambiguity in the overall in the process ○ no museum has been built or budgeted to date

Source: authors' elaboration.