Civilizing mummies: an adventure of technicians in archaeological collections

Felipe Raglianti
Departamento de Antropología, Universidad de Chile, Santiago, Chile

ABSTRACT
In this article, I follow the work of technicians organizing a collection of mumified materials in a university of Chile. In doing this, I translate some points of laboratory studies into another context: a deposit of archaeological collections. By following how technicians sort out the collections and exploring their roles in the making of knowledges tinged by hands-on experience, I unravel with a “Whiteheadean twist” how conservation practices are a matter of concern in archaeology. Insofar the mummies are preserved as “material heritages” and witnessed in public as “carriers of civilization,” these “ambassadors of the past” are haunted in turn by their histories. But in the hands of technicians, I speculate that mumified materials become archeological objects imbued with a particular mode of existence. Through their work, they get to know the life-histories of mummies and in such stories, I focus on a sense of permanence, felt as an ideal purpose of conservation in archaeological collections. I analyze this with Whitehead’s notion of civilization to underscore how conservation processes aim at attaining everlasting things. In this sense, I develop the point that civilizations function as lures for collecting and preserving things.

Civilizando Múmias: aventuras técnicas em coleções arqueológicas

RESUMO
Neste artigo acompanho o trabalho de técnicos que organizam uma coleção de materiais mumificados em uma universidade do Chile. Ao fazer isso, traduzo alguns pontos de estudos de laboratório para outro contexto: um depósito de coleções arqueológicas. Ao acompanhar como os técnicos classificam as coleções e explorando seus papéis na construção de conhecimentos tingidos pela experiência prática, desvenco com um “toque whiteheadiano” como as práticas de conservação são uma questão de preocupação na arqueologia. Na medida em que as múmias são preservadas como “patrimônios materiais” e testemunhadas em público como “portadoras da civilização,” esses “embaixadores do passado” são assombrados por suas
Civilizando Momias: aventuras técnicas en colecciones arqueológicas

RESUMEN
En este artículo acompaño el trabajo del personal técnico encargado de la organización de una colección de materiales momificados en una universidad de Chile. Con ello traduzco algunos puntos de los estudios de laboratorio a otro contexto: un depósito de colecciones arqueológicas. Explorando cómo los técnicos clasifican las colecciones y examinando sus roles en la elaboración de conocimientos basados en la experiencia práctica, descifro con un “giro Whiteheadiano” cómo las prácticas de conservación de materiales son un asunto de interés en arqueología. En la medida en que las momias se conservan como “herencias materiales” y se muestran en público como “portadoras de civilización,” estos “embajadores del antepasado” son a su vez interpelados por su propio pasado. Pero en manos de los técnicos especulo que los materiales momificados se vuelven objetos arqueológicos imbuidos de un modo particular de existencia. En su trabajo llegan a conocer las historias de vida de las momias y en tales historias me enfoco en un sentido de permanencia, sentido como un propósito ideal de conservación en las colecciones arqueológicas. Analizo esto con la noción de civilización de Whitehead para subrayar cómo los procesos de conservación apuntan a lograr cosas eternas. En este sentido, desarrollo el punto de que las civilizaciones funcionan como señuelos para coleccionar y preservar las cosas.

1. Introduction

The relations between technicians and scientists have been explored mostly from a historical perspective (Shapin 1989; Wilson 2012; Morus 2016). Steven Shapin’s work on the invisibility of technicians in the seventeenth-century sciences suggests that the transparency of technical activities is evident until things go wrong. Taking as an example the laboratory of Robert Boyle, historical records show how technicians were valued as “muscular extensions of their master’s will” (Shapin 1989, 557). Although they were trusted with handling the laboratory materials and instruments, their tasks were deemed of no importance to the interests of scientific knowledge. Shapin warns that even today this sentiment is prevalent under the assumption of a strict difference between knowledge-making practices and hands-on experience. In contrast, this distinction becomes blurred in laboratories where there is “talk of the value of ‘good hands’ or of importance of a ‘feeling for’ organisms, data, or apparatus” (Shapin 1989, 562; cf. Myers 2008). Such
effective work of technicians was once ignored by historians and sociologists of science. For instance, according to Koyré (1968) science “owed nothing to craftsmen and technicians” (cf. Zilsel 1942; Morus 2016, 99). But an emphasis on the sociotechnical aspects of science has attracted fresh attention to the activities of technicians. For Steven Shapin, the laboratory “is now to be understood more on the model of a workshop” (1989, 563). Instead of a bifurcation of “work that is done with the head and work that is done with the hands” (Morus 2016, 98), laboratory work can be grasped ethnomethodologically as a collaborative achievement (Rawls 2008; Ziewitz and Lynch 2018). Big science actually depends on enrolling “huge armies of workers carrying out a range of routinized tasks” (Morus 2016, 107). Paying attention to technicians then would disclose the “hidden forces” of science (Wilson 2012, 17). The important functions of technical practices include assisting in the activities of scientists, supporting the production of scientific knowledge, and preparing the materials and instruments needed for experiments. And when knowledge production is informed by hands-on experience, the work of technicians spills over the pursuit of scientific ideas, while handling also in the background the general task of caring for laboratory objects, that is, for concrete rather than abstract things. Technicians usually have to craft or manage objects in the laboratory, but overall their job is to keep them safe, and to take care of them while they are in circulation, coordinating “the transit of objects between research projects, and from research to teaching labs, and, ultimately, from the lab (whether research or teaching) to the disposal skip” (Wilson 2012, 17).

That responsibility puts technicians in a position of knowing the life-histories of laboratory objects. Their stories are relevant to the study of scientific heritage (Wilson 2012; Jardine 2013). Empirical work in this subject has been also tackled by museum studies (Lourenço and Wilson 2013) showing how technicians intervene in the controversies between historians and scientists about what counts as heritage and what becomes retained and normalized as “material heritage.” Stories provided by technicians enrich the records that demonstrate how the history of sciences in this matter is controversial. Their accounts of technical work add relevant references to the contexts of those objects embedded in the social lives of the laboratory (Latour and Woolgar 1979). Also, because their work is unfolded in a context of caring for the safety of things (Mol 2008; de La Bellacasa 2011, 2012; Denis and Pontille 2014; Martin, Myers, and Viseu 2015) the care of technicians can be understood as a relational process (de la Bellacasa 2012) that foregrounds the situated character of scientific knowledge (Haraway 1988). In contrast to translating the “logic of choice” (Mol 2008) into a practice of science in which scientists enjoy alone freedom of adventure in the making of knowledges, the “logic of care starts out from the fleshiness and the fragility of life” (Mol 2008, 11). In this sense, care reminds us of the work of technicians on laboratory objects affected by decay and destruction. That is the case of techniques dedicated to the conservation of bio-materials in archaeology.

This study of technical work unpacks how the conservation of mummies is a delicate matter of concern (Latour 2004). By analyzing how technicians handle responsibly the organization of their collection, I discuss how caring for “material heritage” advances the making of knowledges in science. But this work of collection exceeds that special purpose. The mummified materials are collected also for the education of students and the interests of the public. Insofar they visit the collections to witness in the mummies
a history of the past – and do so by entertaining an ideal of permanence while behaving themselves in a “civilised” manner – this case study also aims to interpellate the notion of civilization (Robertson 2006; Thomassen 2012; Smith 2017).

There has been a long discussion of civilizations

as collectives coursing through the early phases of modern archaeology, anthropology, history, philosophy and sociology. Beginning with Emile Durkheim, Marcel Mauss, Max Weber, Oswald Spengler, Pitirim Sorokin, Karl Jaspers, Eric Voegelin and Arnold Toynbee, comparative sociologists, philosophers and world historians have produced theories and inquiries taking civilisations as the main unit of analysis. (Smith 2017, 4)

Elias ([1939] 2000) emphasized process in the study of civilizations, while Nelson (1973) coined a comparative approach to civilizational encounters. A “third generation” (Tiryakian 2004) came along with Eisenstadt (1986) and Huntington (1993). Also, such discussion has recently issued a new field of study called civilizational analysis (Arnason 2004; Arjomand and Tiryakian 2004; Mazlish 2004). But figuring mummies as a material heritage of civilizations is a slippery assumption, contested by the practices of extraction and ownership antecedent to most archaeological collections. In this study, I argue that the perception of heritage as a “rear-view mirror” of civilizations also invisibilizes technicians working with mummies.

Building on science and technology studies of materialities (Callon 1984; Johnson 1988; Law and Lin 2017) and relations of matter and meaning (Haraway 1997; Law 2004; Barad 2007; Savransky 2016) I unfold a material-semiotic account of technicians handling the conservation of mummmified materials. I tell one story of a collection of mummies at the Faculty of Social Science from a university in Chile. I focus on how mummmified materials are processed to conform to the standards of the Faculty and how the technicians working with material heritage transform the mummies into archaeological objects. To that extent I follow how they “sort things out” (Bowker and Star 2000). I analyze their strategies of organization and discuss how the notion of civilization can be reconsidered to understand them. I speculate how a social order involved in these strategies can be grasped with Whitehead’s concept of civilization (1939), and I unpack from the preparation, packaging, and deposit of archaeological objects an “adventure of ideas” luring a mode of ordering the collections.

My interest in conservation grew from a postdoctoral project where I was focusing on science “in the making,” that is, crafted creatively in Chile. My initial research project had a strong focus on studying laboratories, but slowly I became interested in practices articulated in the “back stage” (Goffman 1959) of scientific activities. Though I work at the same university where I developed my fieldwork, it was actually by chance I had the first opportunity to visit the collections in September of 2019. This was my first ethnographic encounter with archaeological conservation, which at the time struck me as a practice articulated in the “background” of archaeological research. Due to the controversial nature of this topic, the research was developed while strictly adhering to ethical criteria of confidentiality and anonymity, and the participants sharing their perspectives understood the ethnographic nature of my work. The fieldwork lasted six months, with regular visits once a week. During this time I made participant observations of the conservation process and also interviewed the person in charge of the collections (Vanesa), her assistants, and interns. Two in-depth interviews were conducted with Vanesa at the
beginning and the end of the fieldwork, as well as eight interviews with her collaborators. I registered in more than 300 images of the organization of the conservation process of different archaeological materials. The focus on mumified materials was sorted out with Vanesa during my first visit. When I began doing fieldwork she had just decided to start working on a project called Tarapacá 40. In addition to observing the work of technicians, many laboratories of archaeology in the university were visited. Access was facilitated by having a teaching position at this institution.

The mummies of Tarapacá 40 are human remains that exhibit the preservation of non-bony tissue. The site is a cemetery located between the northern slope of the quebrada and a river that runs towards the Pampa del Tamarugal, almost 1300m above the sea. The graves in the cemetery were dug in the sand, the dead were covered with funeral bundles and their bodies were flexed with them, arranged in a spiral position and wrapped with blankets and pieces of leather (Uribe et al. 2015). Their archaeological examination determined that some of the skulls were intentionally deformed in three different ways, which would reflect the “individual and social diversity within the site” (Uribe et al. 2015, 68). Some bodies were buried with offerings, such as miniatures of pottery, weaving and basketry, Vicuña fleeces, carob pods, corn (and popcorn), beans, quinoa, meat, fish, octopus, and dried shellfish, among others (Nuñez 1982). The mumification of the bodies is due to the arid climate of the Atacama desert. In the absence of water, dry conditions interrupt the degradation of the body and allow the partial preservation of soft tissues. According to Lynnerup (2007) “there is really no exact boundary line between a skeleton with some preserved soft tissue (skin remnants, ligaments, etc) and a mummy” (162). This ontological fluidity permeates archaeology when “natural” mummies are contrasted to “artificial” ones, which have been mumified through “cultural” techniques typical of funeral rites. But, even in archaeology, the difference must not be exaggerated since “many cultures practiced burial rites, which to some degree involved both natural and artificial mumification” (Lynnerup 2007, 162). To that extent, the figure of the mummy seems to bridge that great modern divide between nature and culture (Latour 1993).

Mummification effectively blocks enzymatic decomposition and prevents the proliferation of bacteria in the corpse. The degree of mumification of the body depends on the desiccation of its parts. It is more pronounced where the greatest amount of water can evaporate, as in the fingers and toes, due to a greater superficial proportion of skin in relation to body volume. The word mummy derives from the Persian expression “mumeia” or “mum” and from the Arabic “mumiya” which refers to the bitumen extracted from embalmed bodies. During the “egyptomania of the western world” in the eighteenth and nineteenth centuries, this viscous material was highly sought after as a medicinal cure-all. In this period the international circulation of mumified material became popular, to such an extent that some bodies even ended up being used as firewood (Lynnerup 2007, 165). But most mummies excavated and sold were bought by museums and collectors, which later favored their examination by natural scientists. On the other hand, the oldest mummies – some dating as far back as 7800BC (Aufderheide, Muñoz, and Arriaza 1993) – are associated with the Chinchorro culture in South America. These bodies show mumification techniques as complex as those of Egyptian mummies. “Internal organs were removed and replaced with straw, and after defleshing or decay of limb musculature these were reaflxed to the trunk, and then covered in black...
mud, which finally could be painted with, eg, the facial details” (Lynnerup 2007, 165). In the sixteenth century, mummies related particularly to the Inca culture suffered from the arrival of the Spanish conquerors who “extirpated idolatry from the new world.” But some survived and crossed the sea. They were rescued as objects of “material culture” and later joined other mummies as objects of scientific study. “Mummy studies” grew in complexity towards the end of the nineteenth century (Dong Hoon Shin and Bianucci 2021). The disposition of the scientific study of mummies has changed since then, from a more clinical approach – “in a certain sense seeing the body as any other unidentified body that must be properly examined in a forensic way” (Lynnerup 2007, 163) – towards an understanding of mummified bodies as belonging to historical and political subjects. Mummified materials retain their status as “human” in death and need to be accorded at least the same respect as living humans, or the recently dead. In fact, some might argue that mummies should be treated with even greater care than living humans, since any damage caused to a mummy is irreparable, while living humans generally heal. (Shin and Bianucci 2021, 59)

Mummies kept their humanity but their bodies became more-than-human artifacts.

2. Classifications, civilizations, and its discontents

Attending to how things are sorted out in the collections by technicians offers us a fortunate “guidance on the selection, documentation, conservation, and display of scientific heritage materials” (Jardine 2013, 736). That is particularly important for technicians in archaeology since their work also includes conserving archaeological materials. This is generally organized with protocols standardizing work routines in excavations sites, conservation deposits, and laboratories. When something enters an archaeological collection, its processing is predicated by canons of selection, documentation, conservation, and display. If admitted, things become reconfigured materially and semiotically under the guise of “archaeological heritage.” Once added to the collections things are deposited in an environment of preservation handled by technicians. But this conservation process is permeated by political and practical issues:

the lack of allocated space (especially when departments move site), the vulnerability of collections “orphaned” by shifts in research priorities, and the many problems arising from lack of coordination between collections and of relevant expertise for selection, documentation, digital archiving, and display. (Jardine 2013, 736)

Much of the coordination work involved in sorting out the collections is done by technicians and organized in routines. Following John Law, an “organization is better understood as a process or a “movement that no longer works when it stops” (2001, 1). Such organization in collections would associate heterogeneous entities in the process of arranging and ordering things. According to Law, this practice “may be understood as strategy: not, to be sure, necessarily (or indeed often) an explicit strategy but rather as an implicit strategy or as a mode of ordering” (2001, 1). Modes of ordering “material heritage” in archaeological collections are predicated by technical protocols. The agency or lure of such devices is like a “Foucauldian mini-discourse” (Law 2001, 1) articulated to coordinate the admission of materials into the collections. In other words, the protocols and the practice are entangled materially and symbolically (Bowker and Star 2000) when a
technician unfolds her strategies to collect things, thus the outcome of her planning becomes situated in contingent activities (Suchman 2007). The modes of ordering hold the collections together (cf. Law 1994). Organizing “is about complex relations between the different modes of ordering. Nothing simple. Sometimes these may undermine one another. Sometimes, by contrast, they prop each other up” (Law 2001, 2). The latter seems to be the case in the collections, layers of organization prop each other up, but troubles creep in.

One such layer is those standards used for classifying things in the collections. Standards have been used to grasp culture in anthropology (Bowker and Star 2000) and they can also be used to understand objects in archaeology. A standard adds coherence to a collection if the codes used are mutually exclusive and integrated into a unified system. But sorting things out in a collection can be a muddle. Mess grows in the archaeological collection when multiple classification standards are used to arrange objects. The very purpose of archaeological collections of being useful for different communities of practice allows the proliferation of schemes. But not every standard is “coherent” (Law 2004) and translatable to the reality of each community. Because there is more than one way to classify things an eye must be kept on multiplicity while following a standard. Moreover, the “work-arounds involved in the practical use of standards frequently entail the use of ad hoc nonstandard categories” (Bowker and Star 2000, 15). These are informed by a technician’s own tacit knowledge of those protocols that predicate the collection process.

The effects of classifications go beyond the objectification of things. They add a spatial segmentation (Bowker and Star 2000) of many objects in one collection. This division is also temporal as spaces are reserved for objects awaiting processing. These empty places for things to come signal a vital aspect of classification. A system or classification scheme “is a set of boxes (metaphorical or literal) into which things can be put to then do some kind of work – bureaucratic or knowledge production” (Bowker and Star 2000, 10). In this sense, the collection of mummies is actually an enactment of a classification scheme that literally puts them in boxes in order to handle their preservation for activities such as knowledge production. This scheme will slowly lose its power to code knowledges if the empty spaces are filled with things that do not challenge their assigned places in the collections. But when they do break with their classification scheme, they entertain a certain “adventure of ideas” (Whitehead 1939) in the making of archaeological knowledge. A knowledge thus informed by ideas underlying a classification scheme or system has two aspects. One refers to the systematization of classified objects and the other refers to the assemblage of new codes derived from materials that break with their classification scheme. The latter involves changing underlying assumptions of the old codes of classification by introducing new ideas. For instance the concept of “material heritage” is tied to certain ideas of culture and sociality and changes introduced in such ideas may alter how things are classified in the archaeological collections.

Perhaps one of the most debated ideas that informed how bodies and things have been taken as archaeological material heritage is the notion of civilization. In the case of Tarapacá 40, materials extracted from this place are perceived as remains of a transitional epoch, from hunter and gatherer societies to more complex social formations (Uribe et al. 2015). This matters for the mummies. Tarapacá 40 is understood as a part of a “formative period” in America which is a controversial topic of debate, particularly
when compared to the neolithic period in Europe. For instance, the Faculty of Social Science from a university of Chile, reviewing this epoch of Tarapacá 40 in its webpage, urges us to overcome a naïve perspective of conceiving the altiplanic people from this period as “carriers of civilisation” (FACSO 2003). For Mazlish (2004), the idea of civilization “appears in the eighteenth century at a critical juncture point when Western reflexivity became obsessed with its secular perfectibility” (in Arjomand and Tiryakian 2004, 1). This mentality sorted out people into two categories: “non-civilized” and “civilized.” In the nineteenth and twentieth centuries “it was a sort of evolutionary benchmark of modernity that could be used to evaluate the distance traveled in the inexorable march of progress of mankind” (Tiryakian 2004, 30). Critics of this evolutionary perspective such as Franz Boas began using the term society as a synonym of civilization in an attempt to evade in the latter the stigma of barbarism. Also, the meaning of the word culture was less stigmatized than the term civilization, but it was still equated with the “connotation of ‘higher goals of moral cultivation’ [and] civilisation with ‘mere good behavior’” (Arjomand and Tiryakian 2004, 3). This contrast in the notion of civilization was appealing, it suggested thinking about it as processes involving, among other socio-cultural patterns, trends of “individuation” (Elias [1939] 2000). “It became commonplace to assume that there was a Melanesian, an Inuit, and a Western civilisation” (Thomassen 2012, 168). Another strong persuasion was the massive scale of the idea. Durkheim and Mauss’ sense of culture was nested in an idea of civilization as “a sort of moral milieu in which are found a number of nations and in which every national culture is only a particular form” (Durkheim and Mauss 1969, 453; cited in Arjomand and Tiryakian 2004, 2). Temporally and spatially, such idea of civilization entails a large unit of analysis. “The advantage of focusing on civilizations is that the scope of analysis expands to formations that are larger and older than nation states and empires while at the same time incorporating them” (Smith 2017, 4). Rethinking civilizations in the plural helped to decouple them from the sense of barbarism, adding in its scope diverse formations and trajectories. Elias’ work, for instance, tried “to replace the incomplete or reductionistic models of classical sociology with a more adequate universal paradigm of long-term processes” (Arnason 2004, 104). In spite of the lures of its scale and diversity, the notion of civilization remained stubbornly eurocentric, having trouble to shake its colonial overtone. Critics argue that civilizational analyses “have failed to achieve the non-Eurocentric comparative sociology they strive for” (Smith 2017, 9).

Following Bruno Latour (1993, 2010), the eurocentric character of such modern ideas of civilization can be traced by attending to the making of facts and fetishes in the admission of the mummiﬁed materials into the collections. On the one hand, by unpacking this process the making of facts could be accounted for by following how they are constructed from factors in the composition of materials. One lesson of studying laboratories (Latour and Woolgar 1979; Knorr-Cetina 1995) is that facts point us to the “external truths” of things when conceived as objects and “ﬁgured out” with inscriptions of the kind required by the classiﬁcation schemes of archaeological collections. On the other hand, the making of fetishes could be accounted for by showing how they are constructed in stories about such composition of materials. Fetishes refer to the “internal truths” of things when perceived as subjects and shaped by notions of the kind required by archaeological collections. The process nevertheless entangles the inside and outside of the product. Facts are puriﬁed from fetishes in a process of hybridization of subjects and objects. “Within
the depths of their Latin roots, both [fact and fetish] conceal the intense work of construction that allows for both the truth of facts and the truth of minds” (Latour 2010, 21). In this sense, Latour suggests that when we take both the “work of purification and hybridization” into account we “stop being wholly modern” (1993, 11).

Another way of thinking about the issue is to grasp how civilizations are patterns that enter into the making of actual entities. One may assume that they are complex in scale and diversity, but the required analysis is not morphological anymore. It is not about showing how things conform to a pattern, it is about grasping how a social order enters into the characters of things. This kind of genetic analysis unpacks the “black bloxes” of modern objects by studying how things are put into such boxes. The focus on the object resonates with the attention given by Elias to the civilization of things such as forks, but the purpose is to keep our attention on the object without reducing our focus to the civilization of behavior. Perhaps the idea of civilization of Alfred North Whitehead (1939, 1938 1968) can be more helpful for this task. A process thinker, ignored in civilizational analysis, his sense of civilization may enrich our grasp of a transformation of mumified materials into archaeological objects. In this sense, the case developed below aims to show how civilizing mummies can be considered as a material purification unfolding a hybridization of objects. But the Whiteheadian twist (cf. Stengers 2011) of the argument is to avoid what he calls “the fallacy of misplaced concreteness.” This fallacy “consists in neglecting the degree of abstraction involved when an actual entity is considered merely so far as it exemplifies certain categories of thought” (Whitehead 1978, 7). In other words, instead of thinking that mummies are merely categorical examples, the aim is to grasp how the ideas involved in his notion of a civilization are materialized through the strategies of organizing a collection. The task is to grasp how a sense of civilization transforms mumified materials into archaeological objects.

Whitehead’s work is a unique approach to philosophy, as immortalized in some of his most famous passages – particularly his “safest” definition of European philosophy as consisting of “a series of footnotes to Plato” (1978, 39). In adopting his philosophy of organism to think about technical work, what I find most useful is his speculative scheme, an “endeavor to frame a coherent, logical, necessary system of general ideas in terms of which every element of our experience can be interpreted” (Whitehead 1978, 3). An expression of Whitehead that I find very handy to grasp the general lessons of his cosmology is that an atom, just like everything else, “is a system of all things” (1978, 36). Whitehead considers “the advance into novelty,” what he calls creativity, to be “the universal of universals characterizing ultimate matter of fact” (1978, 21). By appealing to words such as creativity, one, and many, Whitehead translates into an organic vocabulary of “becoming” the “substance metaphysics” found in key notions of European philosophies, such as being, thing, and entity, at the turn of the twentieth century. A brief formula to picture the role assigned to the notion of becoming is: “the many become one, and are increased by one” (Whitehead 1978, 21). The focus is on actuality, as arising from the past and transitioning into the future. This is how Whitehead thinks cosmologically about historical events in his sociological meditations on civilizations. In the “concrescence” or becoming of an actual occasion, in a historic route of a civilized event, the real antecedent world, given for that occasion, contributes the “datum” received in the initial phase of its advance into novelty. This antecedent is the objective content of the physical pole of an actual entity arising in that occasion. Then comes an intermediate
phase of “self-formation,” a “ferment of qualitative valuation” (Whitehead 1939, 269). This amounts to the subjective contents of the mental pole, logical or aesthetical. And here we find the difference between Reality and Appearance, that is, between the antecedent world from which a creative advance into novelty begins, and “the effect of the activity of the mental pole, whereby the qualities and co-ordinations of the given physical world undergo transformation” (Whitehead 1939, 270), resulting in a fusion of the ideal and the actual. In terms of perception, there is the causal feeling of the past, the presentational immediacy of the present, and their integration in symbolic references. Then the occasion reaches satisfaction, culminating in the birth of a fully determined fact, constituting an antecedent for another occasion. The subject of the occasion is born in the immediacy of its privacy, immediately passing away and obtaining public life as an object. This is the subject-object structure of Whitehead’s sense of experience, discussed in relation to his theory of time. In short, actual entities “perpetually perish subjectively, but are immortal objectively” (Whitehead 1978, 29). This metaphysic constructed first in Whitehead’s books on Religion (1926) and Symbolism ([1927] 1958) and then fully developed in Process and Reality ([1929] 1978), serves as a general scheme for interpreting civilization in Adventures of Ideas (1939). In this sense, factors belonging to the real internal constitution of a civilization are elements of adjustment of the physical and mental poles of actual entities, whose subjective aim is lured in some occasions by that mode of existence.

Another insight that I find helpful for thinking about mummies is Whitehead’s ontological principle. He writes: “the ontological principle can be summarized as: no actual entity, then no reason” (1978, 19) and “it could also be termed the ‘principle of efficient, and final, causation’. This ontological principle means that actual entities are the only reasons; so that to search for a reason is to search for one or more actual entities” (1978, 24). This helps to question the representation of archaeological objects as rear-view mirrors of civilizations. If archaeologists, using a morphological mode of abstraction, look at mummified materials and imagine civilizations as principles of the “efficient causation” of their appearance, technicians working in archaeological collections regard mummies as having their own cause of importance. The civilizations which are the logical subjects of the theories of archaeologists efficiently participate in the conservation of mummified materials, as propositions formulating the protocols that predicate the practices of technicians. To look for civilizations as a reason to interpret their activities is to entertain a genetic mode of abstraction, in which the civilizations envisioned by archaeologists and anthropologists are understood as propositions, contributing to the work of technicians some element of adjustment of the aim of conservation in the internal constitution of archaeological collections. If controversies regarding the notion of civilization become a factor in an actual civilization of mummies, then to look for a civilization as a reason for understanding technical work is to attend to the element of adjustment contributed by this activity. For this reason, I think that it might be an unguarded abstraction to discuss the possible relevance of this notion for technicians working in archaeology by focusing on the physical or mental violence done in the name of civilization, as an imperialist project of western colonization. This intellectual and political discussion has a massive importance for the circulation of archaeological objects, but in this ethnographic study of technicians the relevance of the stories that haunt such objects is limited to a vague influence from a wider environment. This influence is exerted by protocols
introduced during the initial phase of the conservation process, transmitting the importance of archaeological theories for luring the work of technicians, and it is combined with the relevance of more elements of adjustment of the process in later phases.

For Whitehead, civilization is an adventure of ideas (1939), that is, of the lures for the feelings patterning the thoughts, emotions, and actions of actual entities (cf. 1978). He recognizes “two levels of ideas which are required for successful civilisation, namely, particularized ideas of low generality, and philosophic ideas of high generality” (Whitehead 1939, ix). Whitehead’s study surveys the effects of those general ideas, such as the human soul or the humanitarian ideal, that would have shaped Western civilization. This mapping of civilization is eurocentric, he is interested in the sociological, the cosmological, and the philosophical sides of such kinds of ideas. He concludes with a generalization of the ideals that would have stitched the patterns of Western civilization: Truth, Beauty, Art, Adventure, and Peace. According to Whitehead, this set of philosophical ideas is required to “guide the adventure toward novelty, and to secure the immediate realization of the worth of such ideal aim” (1939, ix). This aspect of the analysis is morphological, it is about showing how a civilization is a pattern composed of actual entities. But Whitehead’s book considers as well how particularized ideas of low generality are necessary for a civilization. This aspect of the analysis is genetical, it is about showing how Truth, Beauty, Art, Adventure, and Peace, must be conjoined in the civilization of actual entities. These ideas become elements of adjustment in the composition of a mode of existence, introducing a social order that actualizes a pattern of entities reaping “the fruit of the type of civilisation immediately attained” (Whitehead 1939, ix). So his notion of civilization is twofold, one aspect points to the changes that refresh it, and the other to the actions that harvest it.

Ideas of low generality are generative for the creative advance of a civilization, particularly when embedded in routines informed by them, “extending the number of important operations which we can perform without thinking about them” (Whitehead 1911, 61). Ideas of low generality in a collection of mummies can be found in the protocols that inform the routines of selection, documentation, conservation, and display. The protocols instruct modes of arranging and ordering how a technician deploys her strategies to transmute materials into objects. These strategies are lured by more general ideas of Truth, Beauty, Art, Adventure, and Peace, embedded in the actual practice. Below I unpack the work of technicians to account for how they harvest an archaeological collection of mummies by keeping our focus on them through four layers of organization. The admission of mummies into the collection can be followed through a first phase where there is an epistemic mode of ordering, a second phase where there is an aesthetical mode of ordering, a third phase where there is an infrastructural mode ordering, and a fourth phase where there is a civilized mode of ordering. Such layers prop up each other and hold the process together. But they can also depart from each other, making the conservation of mummies a fragile success, entertained by the ideal of a more permanent duration amid the ongoingness of things. Their material everlastingness in turn is subject to their preparation, packaging, and deposit as objects in a requisite environment of preservation.

3. Tarapacá 40: the creative advance of an archaeological collection

The collections are nested in a history of international standards adapted to local conditions. Their guidelines follow the “principles for behavior, decision making, and mutually
agreed ethical approaches to the question of archaeological (and other scientific) interest in the mortal remains of the dead” of the Vermillion Accord created in the World Archaeological Congress of 1989. Demands in Chile related to the handling of indigenous remains in excavations sites (Paillalef 1998) and museums (Sepúlveda and Ayala 2008) have been gaining traction since then. While only the Chilean State has authority over who can claim and excavate human remains, in the absence of a public policy the technical professionalization of the practice of handling archaeological materials (Abarca et al. 2018) involved the publication of deontological guidelines (SOCHIAB 2014) and of propositions made by experts for the conservation and restauration of materials (Lemp and Bonnin 2015); also seminars of diagnosis of human remains in museums and universities (Montalva and Martínez 2015; Sanhueza, Abarca, and Herrera 2017) and workshops organized by the National Service of Cultural Heritage (SNPC 2018). The actual legislation that is associated with the protection of human remains that gives the Chilean State ownership over the bodies, is the Law N°17.288 of National Monuments from 1970; archaeological materials are also protected by the Environmental Law N°19.300 from 1994 regarding excavations and the Law N°19.253 from 1993 which created the National Corporation of Indigenous Development (Abarca et al. 2018). In the collections, those protocols that instruct the handling of bodies conform to this normative background. There are many protocols, depending on the type and origin of the materials. Also, there are protocols for visitors soliciting access, protocols for organizing the materials, and protocols for taking samples from them. Two protocols inform how things enter the collections. One is a set of basic rules for the ingression of new collections of objects into the deposit and the other one provides more specific instructions to standardize the classification system. The collections that I visited are embedded in this normative background for their adequate conservation of material heritage. Their organization of the objects deploys a scientific classification system built in the infrastructure of the collections. But visitors and particularly researchers may sort out and label materials with their own codes. While the proliferation of classification schemes is driven by the very purposes of a collection, the main function and expectation deposited in this case are to foster an organization for the communities it serves. It should be wide enough to allocate the activities of many people with divergent motives.

The collected objects have two origins. One is the material derived from previous research in archaeology. This goes back to the time when archaeologists in Chile were trained as undergrads in history, since the discipline as such did not exist before the 1960s. The materials stored from that epoch are distributed in different places today. One of them is a warehouse that I visited a dozen times, located in the basement of the Faculty of Social Science. This deposit is the main repository of many excavation sites. A second origin of the materials comes after the degree on archaeology was created in this institution. Because of this mixed birth the collections grew alongside the discipline and materials that were given more interest in the past, such as lithics, share the spotlight today with other objects. This change signals a creative advance from the epoch where the aim of archaeology and physical anthropology was to understand the so-called footprint of humanity. So, objects collected are processed now by more specialized research objectives. For instance, botanical materials and bio-archaeological remains have attracted fresh interest in non-humans. Also, more-than-human fields of study like zoo-archaeology have matured. This expanded the importance of materials...
in the collections beyond the human. Space was made for collecting soil (sediments), stones (lithics), seeds, plant and animal fibers (hairs), textiles, and fragments (ceramics).

Focusing on the mummies, I analyze the collection process phase by phase. I take it as a verb rather than as a noun. In the first phase, I talk about the past of the collections and how the mummies were recovered. In the second phase, I talk about the boxes where the mummies are packaged and how the tricks of technicians add an aesthetic to the process. In the third phase, I talk about the storage of the mummies and how a collection system is annexed to the infrastructure of the deposit. In the final phase, I talk about the purposes of collection and how the conservation of mummies is attempted as a civilized ideal of caring for “material heritage.”

3.1. First phase: preparing the materials

Vanesa, an art historian trained in conservation and restoration of objects, taught me what I know about the mummies of Tarapacá 40. She is responsible for all the deposits of the collections in the Department of Anthropology. She worked before in the collections from the Museum of Natural History in Chile, which was her first experience with the conservation and restoration of scientific objects. For her, the mentality that governed the collections in her previous workplaces comes from the nineteenth-century arts. The main logic was tinged by iconographic representations. So when she began working with the mummies it was truly brutal for her to see for the first time the containers where the archaeological collections of the Faculty were stored back then. The boxes with the materials were piled up and the crooked columns reached the ceiling of the containers. The material was in bad shape. Dust was everywhere, rat droppings were scattered around, some boxes were half opened. The collections had suffered much from the historical and economic changes of the University of Chile in the last decades. The view was frightening for Vanesa. She had never worked with human remains before. In the past, she had felt nausea when handling textiles infused with the odor of mummies, but now she felt more ready. The musty smell was still challenging though. That impressed me too the first time I met them in the underground warehouse, where the archaeological collections are stored today.

Vanesa’s current responsibilities are administrative and technical. She is not an academic. In the warehouse, she mostly collaborates with volunteers. Many of them are doing their professional practices or researching for their undergrad degrees. A group of them helped to move the mummies, which was a physically demanding job. Examining the boxes of each container, grasping the confusing terms in which they were partially ordered, and transporting each box to the new storage facilities, was a group effort. Vanesa had the help of four other undergrad women. The whole task required lots of physical and emotional strength – and guts to sort out the materials. The containers were a nebula of uncertainty. Nobody knew exactly where the boxes belonging to which project were stored. Also, some of the boxes were not labeled with the number and registration of the objects inside them. The materials at the bottom of the piles risked being crushed. Everything was slowly decaying and the insects were drilling the bones to live in them. A better way of taking care of things and of managing the collections was urgently needed. Protocols had to be put to work.
The resources to improve the collections came from a public funding assigned to the university in 2010 through a long-term program that celebrates the bicentenary of Chile. At the beginning, Vanesa had to improvise quite a lot and managed to work by using just what was available. It was fortunate that everything worked at this initial stage, in the absence of a long-term plan to manage the collections. By testing and repeating adapted schemes Vanesa slowly created a systematic way of working. Improvisation *in situ* passed into regular order.

Once the boxes of the Tarapacá 40 collection were moved to the warehouse there was first a general task of association to correlate the different pieces of skeletal material to particular human profiles.

They sorted half of the collection in two months and this lead to new requests for processing more materials. The current standards to handle mummified materials came from projects of more than a decade ago. They have been moderately updated, as rules of thumb and institutional norms have been introduced into the protocols. New administrative guidelines have been created where there were none before. Because the collections are not public yet their regulations are less conventional than in similar places. They must secure their own funding. Anyone who wants to access the collections must make a formal request but the decision is handled by faculty members who act as gatekeepers, especially for people external to the university.

The protocols for sorting out the mummies instruct first to catalogue a collection by the origin of the material (donation, rescue by the university, designated by the National Council of Monuments) and according to its specific type and condition: skeletal remains in good condition, complete or semi-complete; incomplete skeletal remains, in poor condition and/or of high diagnostic value; mummified remains and burial bundles; bioarchaeological rescue and salvage blocks. And to classify the materials further entails recording the data written on the box that is to be discarded; ordering the material according to site, recuperation unit, and excavation level; assigning a number to the new box following the classification protocols; matching a place for the box in the deposit; and writing the content and location of the box in a spreadsheet. There are particular protocols for such labeling of the materials and for the definitive admission of the mummies into the collections – whose boxes must comply with standardized sizes for each kind of material, types of cardboard, external labels, interior bags, and documentation. The strategies have a normative basis, grounded in an adoption of international standards. But overall the purpose is to conserve the identities of the mummies and to preserve for the production of knowledge of what is known about them. Because of this organization a mummy reappears in a new collection as one object with one enduring individuality. Also, when the inscriptions are lost in translation those skeletal remains become labeled as “lost bones.” Because the study of skulls dominated the interests of bioarchaeological researchers in Chile a few decades ago, there are some human remains whose heads were severed from their bodies. The collection brings them together when possible. Bodies are usually not complete due to events both recent and from the more distant past.

Strategies in this first phase unfold an epistemic mode of ordering the collection. When regarded as an object, the construction of facts or “external truths” about the identity of a mummy becomes inseparable from the life-histories or “internal truths” that translate its different factors as composing a subject. The mummies truly become “factishes” (Latour
Following Whitehead, this qualification of Truth would be apparent: “Truth is a qualification which applies to Appearance alone. Reality is just itself, and it is nonsense to ask whether it be true or false. Truth is the conformation of Appearance to Reality” (1939, 309). We will examine in later phases how the appearances of the objects in the unified system of the collections conform to the realities of their deposit in the warehouse. But Truth, as a factor functioning as an element of adjustment in the composition of a mummy, might still be generalized by comparing the composition of objects without referring to their subjective forms, leaving out of the abstraction their life-histories. Such definition is relevant to understand how objects conform to a pattern of truth-relations among them. Here conformation means the acquisition of that relation. But civilization is not only about Truth, it also includes elements of adjustment such as the beauty that the mummy will acquire in the next phase. A more detailed outlook of an archaeological collection is required to grasp how civilizing mummies involve the making of a social order, entering into their characters “by its own inherent persuasiveness as embodying the nobler alternative” (Whitehead 1939, 105).

3.2. Second phase: packaging the object

For Vanesa, the box is a mobile package system. It is an immediate environment built for the conservation of the objects and inscribed with symbolic references to the taxonomy exhibited by the whole collection. Insofar relocating the mummies from the containers to the warehouse entailed unifying into one system the organization of previous collections, the warehouse itself now partakes in the infrastructure of the collection, and the racks where the boxes are put further contribute to unify the system. The boxes are proportional to the shape of special mobile shelves that run on rails – called “full spaces.” They facilitate and maximize storage capacity. In the late 1990s efforts were made to take more meticulous care of the stored material, valued as unique and irreplaceable. Since then they began to speculate about the types of boxes best suited for the archaeological collections. At one point, the box was customized for each collected object, but Vanesa quickly realized that accurate measurements took a big effort. The boxes’ design was very time-consuming.

The standardization of the assemblage of the boxes depends on each institution. It can be more or less efficient, but one never starts from scratch when a protocol regulates the process. It predicates the assemblage of the box, how things should be put together, how the materials should be arranged within, how the boxes should be inscribed on the outside, and how they should be classified and registered in the system. Such standards are limited for instance by the size of the “full spaces.” Fortunately, it is sufficient even for storing a complete skeleton. Ideally, such conditions are well integrated by design into the protocol for optimizing storage capacity. The cardboard of the boxes is purchased with predetermined folds for later assembly (a large reserve of boxes was requested with Bicentennial resources). The cardboard is double corrugated and the sizes of the boxes have simple standards (little and big). Sometimes technicians, mostly volunteers, build partitions inside the boxes for a greater support of big objects such as skeletized materials. The box is easy to build and its construction can be learned quickly. The work does not require special manual skills. For Vanesa, this kind of box is a solution to the problems posed by the professional conservation of materials that justifies both
the work and the cost involved. There are better designs but they are more complicated and expensive. She says that this logic of working with what is available permeates her ideas.

Vanesa has various standards of boxes. Some are smaller and irregular as they come from an older standard of two decades ago. Others are taller and square as they were inherited from a museum project and then adapted for use in the current deposit. The boxes used in research collections tend to be small because they have to hold more fragments, compared to the boxes used in museums that are larger because they usually store complete objects. The boxes that Vanesa designed for the mummies were adapted from cardboard scraps left over from a previous project. They were so large that they had to be cut and adapted but have worked perfectly for the mumified material. Some of these adaptations come from creative exchanges between Vanesa’s home and the deposit’s workshop. For example, a special padding material was created to protect the storage of mumified infants in the boxes. Vanesa came up with the design of this crib from her own experience as a mother. Also, she found it more loving to keep them that way. She had received training before in working with mummies, but her designs were not adapted to process large quantities of materials. She had previously considered but not yet realized the design of the crib, which is a model adapted from an online video. The crib is a trick of the trade derived from craftwork. Its features are designed for a living being; the padding envelops the body so the constricted space should calm the baby, allowing safe transport as the body remains fixed. For Vanesa, this design is loaded with morals of what counts as a good mother. She recognizes that in her design there is a sense of a subversive transmutation of her maternal gesture towards a mumified subject.

Another important trick derived from her training in a laboratory of archaeology is the ventilation of the boxes. Adequate ventilation is key for the exchange of gases or mixtures of vapors required for the conservation of the material inside. The windows cut into the box are a sign that it constitutes an environment for the mummy. The windows are covered with a special fabric to facilitate ventilation. Vanesa adapted a lower cost material for this purpose; for conservation reasons, the window’s fabric should be white, which also adds a certain aesthetic. For Vanesa, things do not have to just work, they also have to be beautiful, so rather than using one layer of a fabric called muslin, which is expensive, they use a double layer of a material called “veil of the bride,” which is similar. In this trick there is a certain beauty that Vanesa derives from her undergrad training in theater design and then adapts in her work of conservation and restoration. For Whitehead, Beauty is “the mutual adaptation of the several factors in an occasion of experience” (1939, 324). Beauty is in the composition of the details, it is about harmoniously adjusting elements in the making of actual entities. My own favorite trick are the laces that Vanesa uses to create a way of opening the front side of the box, so that one may peep into its content without having to take it out of the rack. That is quite useful when the boxes are stacked. Following Whitehead, this beauty is the absence of mutual inhibitions in the “prehensions” or the relations that make up these boxes. When they are assembled, the
This aim is secured, there is the minor form of Beauty, the absence of painful clash, the absence of vulgarity. (Whitehead 1939, 324)

This conformation is not standard. Objects become beautiful when Vanesa works with ad hoc nonstandard categories of taste.

Strategies in this second phase unfold an aesthetical mode of ordering the collection. The art of maintenance and revision of a unified system of collection is at stake here. The practice is tainted by the gradual introduction of adaptations by Vanesa and the beauty involved in introducing them harmoniously. Moreover, the introduction of “new contrasts of objective content with objective content” (Whitehead 1939, 324), allows the ingestion of new details that may add a mayor form of Beauty to the process, by collecting from the wealth of what is available the massiveness of an intense feeling, that is proper to the strength of this expanded beauty. But this contrast or purification of the details entails the adaptation or hybridization of Truth and Beauty, entering into the characters of the mummies. For Whitehead, “Truth and Beauty are the great regulative properties in virtue of which Appearance justifies itself to the immediate decision of the experient subject” (1939, 309). These elements of adjustment contribute to regulate the collection process by adapting the protocols to local conditions. Truth and Beauty are relevant factors for Art which, according to Whitehead, is the “purposeful adaptation of Appearance to Reality” (1939, 344). In this sense, on the one hand, the art of maintaining the collections is the purposeful adaptation of the appearance of the mummy in the label (and later in the search system) to the reality of the mummy in the box (and later in the deposit). On the other hand, the art of revising the collections is the relentless hunt for errors that are caught causing discord in the process and “aesthetic destruction” (Whitehead 1939, 330) to the objects. This “contribution to Beauty which can be supplied by Discord – in itself destructive and evil – is the positive feeling of a quick shift of aim from the tameness of outworn perfection to some other ideal with its freshness still upon it” (Whitehead 1939, 330). The freshness of adventure in the collections springs from the merits of its imperfections.

3.3. Third phase: depositing the box

The boxes are assembled in parallel to the restoration of the mummified materials. Before packaging them, dust and mud are cleaned from the bones, dead insects and their eggs are removed. This is done mostly by students doing their professional apprenticeships. The work is carried out under a magnifying lens, it demands diligent precision. Once ready the mummy is placed carefully inside the box. Special paper covers the floor, padding materials may be added to cushion the objects. If there is more than one object stored inside, it is useful to divide its storage capacity with layers of cardboard. Bags holding fragments may be included. Masking tape is used to cover the edges of the box, up to the rim of the lid. A label with storage information is sticked on it. Once closed the box can be regarded as a boundary object (Star 2010), useful for the different communities of practice that make use of the collections. Also, the mummified materials, now transmuted into an archaeological object, bifurcate. There is the object in the box, and there is the abstraction of the object in the label. This is an event in the life-history of the mummies. They become technical (Simondon [1958] 2017) and epistemic objects (Knorr-Cetina 2001).
Vanesa tells me that they still do not have a room available for the mummies in the “full space” section of the deposit. For now, the boxes are deposited in the racks of the warehouse. Spaces allotted in this mechano structure are labeled with the purpose of forming a matrix of coordinated references. Such template is integrated into the order of the collection, allowing to search for an object in the system and then to find it in the warehouse. This situated order has to be fabricated for each entry. When there is a new box a suitable place is found on the shelves. Each space has been marked with the codes of the collection’s order. The codes connect the order of the deposit with the order of its registration in the search system. When this connection is lost the collection becomes disordered. The organization of a collection requires the conformation of the objects in the system to those in the deposit.

Navigating the collections is an experience that passes from the use of the search system to the objects deposited in the warehouse. This repository is lodged in the basement of the Faculty, and the search system is an Excel spreadsheet with tabs for each collection. The spreadsheet is an information nexus, each element of the record is an entity that can refer to another and this set of symbolic references generates a syntax to propose a search. The result of these propositions is a conformal feeling of orientation in the system and in the deposit. Each result proposes a path to a box stored in the collections. The passage is “true” if it leads to the selected objects, otherwise there is an invalid relationship between the reality of the deposit and its appearance in the system. That error falsifies their relation, but the lack of conformation can still be repaired by updating the system.

The reality of the deposit and its appearance in the system must exhibit a certain unison of immediacy to mediate the access to the materials in the collections. The storage and the records need to match. Accessing the collections is the germ of a perspective that unifies a disjunction of entities, e.g. mummies, boxes, shelves, data, users. In the collections, “the many become one, and are increased by one” (Whitehead 1978, 21). The unified system conjugates four areas of the deposit: the largest deposit for archaeological material (material culture), the deposit enabled for “full spaces” available for the General Cemetery collection, the deposit for the bio-archaeological material (next to the workshop), and the last smaller deposit for the mumified materials. The distribution is sorted by inventory number. For Vanesa, this arrangement is better than the previous schemes where the boxes were organized demographically. Now things ordered by inventory number facilitate the location of the boxes that have not yet been entered into the search system. Then the order of the system must be consistent with the order of the deposit, and thus the things appearing in the search system must be really stored in the boxes, so that grasping the appearance of the objects actually leads to the reality of the materials.

The most relevant storage information is the object’s location. This corresponds to four pieces of data: the deposit, the module, the shelf, and the box number. If there is more than one object in a box, that identification is also added. In the case of bio-archaeological materials, the origin of the objects is identified by the box number, inventory number, geographic area, and project data. The location of the object is specified by site, section, and grave. Also included are the contextual grid and level information. These references are useful for research and not only for administrative purposes, though the available information is different for each object. Visitors can produce their own
records, apart from the collection’s register, but this multiplication of schemes may not be fortunate. If visitors catalog objects for their own purposes their classification standards may deviate from those codes used by the collections. Then integrating into one system a multiplicity of records that correspond to many possible codings of a collection is tricky. This complexity hardly allows anyone to assume that the registration of a processed collection is finished once added to the system, as it is always possible to find new objects associated to an already processed site, which in turn may alter and expand the understanding of that collection. Vanesa refers to the materials found as objects that were left behind. Inadequate records are dramatic elements in a collection’s life-history, its order could lack functionality, thus losing its purpose.

Reading errors in the creation of new records can happen by not paying attention to the correct location of the materials, and writing errors usually happen when the labeling of the objects is not done carefully. Mistakes can be made by experts identifying the materials. Those errors lie in the reference between materials and boxes and between labels and records. In case of doubt Vanesa takes advice from faculty members. For Vanesa, the entry process in archaeology is slower than in physical anthropology, because in the former the collections tend to include more bags with fragments. Also, the satisfaction of completing the latter collection is bigger. Besides errors, some materials are lost in translation or in the abstractions by which the objects are classified. But there is another source of discord – the requested materials can be poorly stored after their use. This may even destroy the object, as the reality in the deposit is modified but its appearance in the system is not. Note that this quietly forks the creative advance of the collection as it loses its unified system. Correctly handling and returning the materials to their boxes and shelving the objects in the corresponding deposits are gestures that reassemble this organization. Visitors of the collections are urged to avoid the damages caused by not following the protocols. There are gestures of bad faith and there are involuntary accidents of clumsy people. Vanesa works with the latter in mind.

Strategies in this third phase unfold an infrastructural mode of ordering the collection. In virtue of this phase, the objects are useful for various groups of people (researchers, students, and the public). Following Bowker and Star (2000), if the box is a “boundary object,” then the deposit is a “boundary infrastructure.” On the one hand, the box is “plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites” (Bowker and Star 2000, 297). On the other hand, the deposit is a working infrastructure that serves “multiple communities of practice” (Bowker and Star 2000, 313) and “deals in regimes and networks of boundary objects (and not of unitary, well-defined objects)” (Bowker and Star 2000, 313). The infrastructure’s design must keep an eye on multiplicity, taking into account that what causes discord in one community of practice may be an impulse for another activity. The mistake in the analysis of the researcher may be the lesson in the education of the student. So, the organization of the unified system of collection should take into account the many realities involved in such activities. This precisely works because it allocates non-coherence. “An organisation which is gripped by a single version of reality – like a polity which suffers the same indignity – is not very long for this world. The real world is messy” (Law 2001, 2). Even those empty spaces in the deposit partake in the adventure. They are deposits of expectation and dreams of things to come. “Indeed all physical
adventure which is entered upon of set purpose involves an adventure of thought regarding things as yet unrealized” (Whitehead 1939, 359).

3.4. Last phase: civilizing mummies

When new materials enter the collections one record per object is generated though there may be more than one entry corresponding to the different fragments of the same object. The system combines on the same page the continuous accumulation and extension of the records. For example, the archaeology database currently has forty thousand records. For now, access to the data is for internal use and there are no plans to make it public. Vanesa has never considered it. This apprehension is not exclusive to the university; it is an institutional standard in many places. The difference between an archaeological collection and say a library collection is that the latter deals with things which are intended to be handled differently by the public. Strict conservation might be an issue only for certain special objects. In the case of an archaeological collection, its system processes materials that may be presupposed as public, but access is very restricted – granted just to specialists. Archaeological objects are deemed as irreplaceable originals whereas most libraries hold copies. This exceptional and controversial character distinguishes mumified materials as heritages of civilizations. The objects are stored for the future as ambassadors of the past. In this sense of civilizations, such collections civilize their creatures: they aim to preserve the past, with the values of the present, to experience them in the future. Their purpose is not only about encountering the materials of an earlier civilization but also about civilizing the objects for a later experience.

The deterioration suffered by the materials and the lack of harmony in the records do not necessarily generate irreparable damage to the objects. The discord of material decay and information loss may be repaired, refreshing the adventures in the maintenance of their character. According to Whitehead, “no static maintenance of perfection is possible. This axiom is rooted in the nature of things. Advance or Decadence are the only choices” (Whitehead 1939, 354); in this case for conserving the materials and systematizing the records. Indeed there is no static maintenance of the conservation of mummies. If the creative impulse of the collections stops their enduring individuality is lost. The errors in the deposit can be discordant but they are also inseparable from the multiplication of records in the addition of materials. In other words, there is plasticity in the progress of the process as its movement is “founded upon the experience of discordant feelings. The social value of liberty lies in its production of discords” (Whitehead 1939, 330). A free adventure of materials is the issue of the process that must be revised to serve the purposes of the communities of practice that visit the collections. It is in this sense that it should be wide enough to allocate the activities of people with divergent motives.

It is not possible to monitor all consequences of accessing the collections. Access implies a trustworthy exchange of expectations. The visitors put their trust in the good management of the collections, and the technicians put their trust in the good handling of the materials. Mutual confidence is the mediating factor between the protocols of access to the collections and an actual experience with the object. Neither authority nor disinterest can stimulate the sweeping feeling of peace that calms the turbulences of the encounter. The persuasion of a non-destructive agency that fosters a civilized encounter with the mummies issues from an experience with the objects that keeps
present the past decision to retain the materials for future occasions. Following Whitehead, this peace “is primarily a trust in the efficacy of Beauty” (1939, 367). This feeling is beyond the safeguards of normative purpose. It appeals to the removal of inhibitions and must come as a gift. “The deliberate aim at Peace very easily passes into its bastard substitute, Anesthesia. In other words, in the place of a quality of ‘life and motion’, there is substituted their destruction” (Whitehead 1939, 368). Objects in collections cannot be simply left in peace. They risk decay in their boxes, while being forgotten in the blind spot of the process. The peace sought is “the understanding of tragedy, and at the same time its preservation” (Whitehead 1939, 368). Discord is integral to the impulse of collection when Peace intervenes to harmonize the tragedies of the decay with the freshness of the adventure. Peace “is the intuition of permanence. It keeps vivid the sensitiveness to the tragedy; and it sees the tragedy as a living agent persuading the world to aim at fineness beyond the faded level of surrounding fact” (Whitehead 1939, 369). In this sense, we passed in this account from the tragedy of material decay in the containers to the persuasion of aiming beyond this level of surrounding fact.

Institutions such as the universities in Chile guard and stamp on their collections their own personal character, as authors of their conservation and restoration. But there is never an end to these processes, they can only aspire to be partially completed. Conservation cannot take a vacation. The interruption of the maintenance and revision of a unified system is incompatible with the conservation of the objects. The obligation of constructing an environment of preservation for them lingers in these linked occasions: in the preparation of the materials, in the packaging of the object, and in the deposit of the box. Also, beyond the warehouse the wider public environment of the collections puts pressure on the fulfillment of their purposes. Voices and actions of laymen and experts critique the collections and their antecedent processes of extraction and ownership of materials. Possession of certain objects is highly disputed. Then publishing the records and opening the collections is a sensible matter of concern. Extra pressure comes from framing the objects as public properties; the researchers, responsible for the objects, have an initial two-year legal liability over the materials, and this promotes restricted access and private use. While the decision over the ownership of the objects still belongs to the state of Chile, for now the many appetites for these materials are not enough to stress the collections to the point of requiring more regulation for the admission of mummies than the actual strategies unfolding the organization of the process.

Strategies in this final phase unfold a civilized mode of ordering the collection. The organization has to resolve one final tension in the collections, between the preservation of the past of the objects and an experience of their truthful beauty in the future. Fulfilling this latter purpose cannot be postponed indefinitely. The materials are maintained and restored for their own sake, but they are meant to be preserved as objects for a novel experience, in which opening the boxes is not necessarily inconsistent with the purposes of their collection. Nevertheless, this occasion must be conformal with the preservation of the enduring individuality of the mummies. They endure, however imperfectly, when they pass from one of such occasions of experience to the next. “There is the Reality from which the occasion of experience springs – a Reality of inescapable, stubborn fact; and there is the Appearance with which the occasion attains its final individuality” (Whitehead 1939, 337). Following Whitehead, the enduring individuality of the mummies in the collections depends on the conformation of their appearance in the system to their reality in
the deposit. To attain that unison of becoming the layers of organization must grapple with a “foreground of enduring individuals carrying with them a force of subjective tone, and with a background providing the requisite connection” (Whitehead 1939, 363). In other words, the ongoingness (Haraway 2016) of the mummies is bounded to the preservation of their requisite environment. In this sense the hope deposited in the conservation process is the expectation that the impulse of the collections does not destroy the past of the materials for a future occasion. In attaining this permanence the process aims to achieve the “reconciliation of permanence and flux when it has reached its final term which is everlastingness” (Whitehead 1978, 348). Insofar such everlastingness of the object is subject to the preparation, packaging, and deposit of materials in an environment of preservation, its conservation is lured by the persuasion of a pattern of civilized social order, preserving its character in virtue of the feeling that “high aims are worth while” (Whitehead 1939, 371).

4. Conclusion: an ontology of conservation in archaeology

Some objects of the collections – like textiles and pottery – have enjoyed so far some public life beyond their conservation in boxes. In addition to educational tours, there are plans to exhibit some collections following a museological aim. But decay and destruction will continue then to haunt the materials, and to that extent, the care of technicians remains important to maintain and restore the objects. I referred to the conservation of mummies as a “matter of concern” to keep in mind how the “matters of fact” derived from them are entangled to their controversial life-histories. But the matter that troubles most technicians is the material wellbeing of things, a kind of care that requires due attention to directly work on things (Denis and Pontille 2011). The stories that may be told of the conservation of mumified materials do not suggest to me a “materiality-as-stability approach,” but rather to focus on the strategies of technicians in order to account for their “exploratory and improvised maintenance work that consists in constantly taking care of things and being aware of their material multiplicity” (Denis and Pontille 2011, 1). In this sense, the notion of civilization can be helpful to tell one of such stories, by suggesting an approach to highlight a sense of permanence in the life-histories of archaeological objects. Conserving materials aims at attaining an everlasting preservation of things. But this purpose involves discords which are integral to the beauty conserved in archaeological objects; multiplicity, non-coherence, and mess which are integral to the arts of maintaining and revising their collection; mistakes which are integral to the freshness of their conservation; and decay and destruction which are integral to their endurance under permanent change.

The transformations in the attitude of archaeologists towards materiality echo the perspectives supplemented by changes in the dominant paradigms of archaeology, in connection with physical and social anthropology. New archaeological interpretations of the andean past in South America have emerged (eg. Isbell 1997) in tandem with epistemological and ontological shifts in the archaeological analysis of “material culture.” One example is the transition from processualist narratives of cultural evolutionism – founded by Lewis Binford under the assumption that “culture is the means by which humans adapt to natural and social environments” (Isbell 1997, 5) – towards post-processualist perspectives where the “archaeological record does not speak for itself; it speaks
with voices given it by archaeologists” (Isbell 1997, 9). This position promotes a reformed interpretation of archaeological objects, integrating sources of information such as historical records of cultural activity and theories of the nature of culture (Isbell 1997, 5). Another example of a paradigm shift (Kuhn 1970) attuned to the “natureculture” (Haraway 1997) of mummies, is the ontological turn in archaeology and anthropology marked by a “return to things” (e.g. Shanks and Tilley 1987; Rathje and Murphy 1992; Tilley 1994; Ingold 2000; Olivier 2004; Domanska 2005; Webmoor and Witmore 2008; Olsen 2010; Harrison 2011; Olsen et al. 2012).

Following Olsen et al. (2012) archaeology could be aptly interpreted with Isabelle Stengers’ notion of an “ecology of practices” (2005). In this sense, archaeology can be figured as a heterogeneous habitat or network of excavations sites, tools, people, scientific objects, papers, research agendas, laboratories, museum rooms, universities, conference dinners, hotel bars, etc. This fragile complexity of elements is stabilized through centers of calculation (Latour 1987), such as excavations sites and museums, “where things and inscriptions could be gathered and combined, making new knowledge possible” (Olsen et al. 2012, 41). Archaeological collections then play the role of subsidiary centers of coordination (Suchman 1997) in charge of the (in)mutability and (in)mobility of archaeological objects (cf. Law and Singleton 2005). Archaeological conservation can be understood as attempting to control the permanence and change of things in space and in time. To borrow an expression from Tarkovsky (1989) conservation aims to sculpt things in spacetime.

Recent work in ontology of archaeology has borrowed from the influence of “new materialism” and “new ontological realism” (e.g. Harman 2002; DeLanda 2006; Barad 2007; Bennett 2010; Latour 2013). This perspective covers new topics that Alberti (2016) has associated with a new metaphysical archaeology (e.g. Olsen 2010; Olsen et al. 2012; Olsen and Witmore 2015). One characteristic of this new tendency is to think against the conception of objects as mere proxies for observing cultures, species, and societies beyond them. This epistemic gesture constitutes an “expressive fallacy” (Olsen et al. 2012) of archaeology, that results from interpreting records under the assumption that “material culture and landscapes are sites of ‘inscription’, metaphorical ‘stand-ins’ that always represent something else” (Olsen 2010, 3).

This assumption also invisibilizes the work of technicians, locating it as an operational background of the research activities involved in employing theoretical statements. Technicians are concerned from this point of view with the management of materials and information flow (with keeping records up to date). But archaeology can lose or misplace the concreteness of technical work, when it is imagined solely as a back stage of scientific activity. All that is social, cultural, and civilized in the organization of an archaeological collection is lost in abstraction. But such point of view can be turned around to reconsider technicians by paying attention to how scientific activities conform the background of technical practices. Ontological matters are then reversed, insofar the scientific theories involving the social, cultural, and civilizational aspects of the things handled in archaeological collections, are kept in the background of the technicians. In this sense, what becomes foregrounded through their technical work is how they ontologize things.

For Alberti (2016) two lines of ontological analysis have emerged in archaeology and anthropology, respectively following the work of Bruno Latour and Eduardo Viveiros de
Castro. Ontology is no trivial matter; according to Alberti, ontological questions were fore-shadowed by the influence of phenomenology in archaeology (2016, 164). There is a difference between equating ontology with people’s beliefs about reality and understanding it as people’s reality, “their actual ontological commitments” (Alberti 2016, 164). Allied to Latour’s analysis of the moderns, De Castro (2015) argued for the latter definition of ontology in archaeology (otherwise things run de risk of becoming “deontologized”). So, when considering indigenous knowledge, he proposed to avoid translating ontological matters merely in terms of epistemological issues, and to that extent what “unites anthropology and archaeology is the recognition that alterity or Otherness exists in things” (Alberti 2016, 173). In thinking with mummies I have taken seriously people’s reality to understand their technical practices, lured by a civil good sense derived from modern rather than indigenous knowledges. In this sense, an ontological principle is relevant for understanding the civilization of technical activities in archaeological collections. If technicians ontologize materials, they can be recognized as moderns introducing a kind of alterity through their practices in the processing of objects. That Otherness lurks in the details of the conservation of mummies. But if they are taken as representatives of civilization the ontological work of technicians is lost in abstraction. Consequently, I located “archaeological [and anthropological] knowledge in the interplay between materiality, objects, and humans” (Caraher 2016, 327).

Another insight of the ontological turn, that resonates with technical work in collections, is that what has been proposed ontologically in archaeology regarding practices of excavation can be extended to conservation. For instance, Harrison has argued that the modernist trope of archaeology-as-excavation no longer served the discipline well. Instead, Harrison (2011) suggested that we invest in the trope of “archaeology-as-surface-survey” (cf. Simonetti 2015; Caraher 2016, 325). In a similar way, Ingold (2014) invites us to “walk through and with” the materials we encounter (cited in Alberti 2016, 163). Such metaphors helped me to frame technical processes as an operative background of scientific research, and in turn to grasp the research of scientific objects as conforming the back stage of the materials that technicians handle – in an ecology of practices called archaeology. In this sense, there is a general coordination between scientists and technicians: the conservation of beauty is an aim of archaeology, supported by technical work as among its modes of attainment. Apart from these interlocked purposes, technical work can be valued for its own sake, through its “particular kind of care, obligation, and loyalty to things” (Olsen et al. 2012, 1). This “surplus value” comes from paying attention to details in the compositions of things, it “cannot be reduced to means to secure their new identity as scientific objects” (Olsen et al. 2012, 66). But when technicians work with materials “they also participate in their destruction” (Olsen et al. 2012, 78), and for this reason, the beauty that they add or subtract from them can be aesthetical or moral. For Whitehead, life in its interplay with the environment takes the form of “food robbery” (1978, 105); similarly in archaeology, materials excavated from their environments can be figured as “food for thought.” So, apart from empirical verification, archaeologists require moral justification for excavating things. But if archaeology is robbery, then the careful conservation of archaeological objects is one of its vindications – a way of “getting on with things” (Olsen et al. 2012, 205).

The result of this framing of archaeology is an ethnography of the ontological work of technicians considered as moderns. Taking the conservation of mummies as a case study,
I touched on the ontological and ethical controversies involved in the archaeological research of mummiﬁed materials, insofar they were relevant for the collection of archaeological objects, making a difference as propositions that ingress into the conservation process through protocols prehended by technicians. In this “ethnography of the moderns” (Latour 1993, 2013) at work in archaeological collections, I followed a puriﬁcation and hybridization of facts and fetishes in the material and semiotic ﬁguration of mummies, acquiring a mode of existence by lures of that “ultimate good sense we term civilisation” (Whitehead [1938] 1968, 174). In this account, the indigenous knowledge and work that goes into the burial and mummiﬁcation of bodies – as well as their ontological interpretations expressed in archaeological and anthropological theories – became factors in the initial phase of the process of conservation handled by technicians. In proposing an ontological understanding of this process I took a risk in mobilizing the notion of civilization with Whitehead’s help, to consider technicians in archaeology ethnographically as modern workers and to propose with this notion that the work of technicians is enticed by a good sense, expressed in their attention to materials in the assemblage of objects. I sought the abstraction of that civilization in their objectivation of details.

Process is a key term in archaeology, in its historical and theoretical development. The early adoption of the notion has gifted archaeology with the traditions of processual and post-processual interpretation of archaeological records. Now a new perspective, called process archaeology, has noted recently how taking process seriously means that “an older archaeology of periods and types becomes unsustainable” (Malafouris, Gosden, and Bogaard 2021, 2). Furthermore, process archaeology suggests a Whiteheadean reinterpretation of excavation practices as “digging up ‘concrescences’” (Gallagher 2021). Likewise, I suggest that technicians in archaeology collect and preserve concrescences. This proposition is accompanied by a “genuine archaeological feel for process”; an adventurous sense of conservation practices “beyond simple conceptions of the past, present and future”; and an intuition of things, materials, artifacts, and objects as “occurrences” that are felt with an “affective and aesthetic signiﬁcance” (Gosden and Malafouris 2015; Malafouris and Gosden 2020; Malafouris, Gosden, and Bogaard 2021).

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Notes on contributor

Felipe Raglianti is a member of the Faculty of Social Science at the University of Chile. He completed a PhD in Science Studies at Lancaster University under the supervision of Dr. Lucy Suchman and Dr. Adrian MacKenzie. Felipe held a position as Postdoc in the Center for Climate and Resilience Research (CR2) and in a program for Associative Research in Social Science on Contemporary Science in Chile (SOC180039). Felipe’s work explores the cultural lives of technoscience...
with an interest on ethnomethodological approaches to science and technology studies and focusing on issues of creativity, acceleration, and the future of technoscience in Latin America.

**ORCID**

Felipe Raglianti [http://orcid.org/0000-0003-1504-6573](http://orcid.org/0000-0003-1504-6573)

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