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Several years after completing his grand Egyptian opera *Aida*, premiered in 1871, the composer Giuseppe Verdi (1813-1901) reminded his friend Opprandino Arrivabene (1805-1887) of a frustrating visit to the Egyptian museum in Florence.¹ The two had ventured there during the preparatory phase of the opera to examine an ancient flute, following the claim by the influential Belgian musicologist François-Joseph Fétis (1784-1871) that the entire system of ancient Egyptian music could be gleaned from this instrument. This ancient musical system, Verdi recalled reading in Fétis' *Histoire générale de la musique* (1869), was in every way the equal of modern music, "except for the tonality of the instrument."² Verdi visited the museum in high hopes of sophisticated musical inspiration for his Egyptian opera project, but what he found instead was a fragment of a simple "pipe with four holes, like the ones our shepherds have."³ In the letter to Arrivabene recounting this incident, Verdi repaid Fétis with some colorful invective, culminating in a sarcastic *Così si fa l'istoria!*—"This is how history is made!"

There is more to Verdi's indignant flourish than the polemical context would lead one to believe. In fact, the elusive nature of the music of Ancient Egypt can justifiably be described as the oldest problem in music history. The question of ancient Egyptian music has all but disappeared from contemporary musicological discourse, but starting in the seventeenth century it was commonplace in music-historical accounts to devote a chapter to ancient Egyptian music. What is problematic about this music is succinctly expressed in the authoritative *Oxford Encyclopedia of Ancient*

Egypt: “Clearly, musical culture was a well-developed part of society, yet the nature of the music remains obscure.”⁴ This is politely put. We simply have no idea what ancient Egyptian music sounded like. No sources of notated music survive; we do not even know whether Egyptians had a form of musical notation. While Egyptologists have made astonishing discoveries pertaining to musical culture, from a music-historical perspective many pressing questions remain unanswered: textual descriptions of music have not turned up anything particularly illuminating, the stylized tomb paintings of musicians have resisted interpretation, and surviving instruments do not reveal what kind of music Egyptians played. For any musician, especially a composer such as Verdi, the most important aspect of music, its sound, is irrecoverably lost. No wonder that music theorists such as Fétis clutch at straws—or at paltry reed flutes, for that matter.

This curious situation raises some basic questions. Why did music historians concern themselves with a repertoire for which there was no reliable evidence? Indeed, why should we? An answer to these questions must begin with some general words about the writing of music history. Musicologist Richard Taruskin recently explained the disciplinary commitment to notated sources:

Something over a thousand years ago music in the West stopped being (with negligible exceptions) an exclusively oral tradition and became a partly literate one. This was, from our perspective, an enormously important change. The beginning of music writing gives us access through actual musical documents to the repertoires of the past and suddenly raises the curtain, so to speak, on developments that had been going on for centuries.⁵

By focusing on written music, the sounding component of music history is preserved in documentary evidence, in line with the broad standards to which most academic historiography adheres. Not coincidentally, a philologically informed methodology was enshrined in the late-nineteenth century, just as musicology became institutionalized as an academic discipline.

One consequence of this concentration on written documents to overcome the evanescent nature of sound has been a firm focus on fixed works—usually identified with scores—and the composers that created them.⁶ On one level, this move was one of convenience, providing the historian with a sense of dealing with a unified object. The musical work possesses a famously slippery ontology, hovering between the composer's inaccessible mental conception and an infinity of performances.⁷ Historians have typically “pinned down” works by identifying them with the completed score, as the material image of the composer's creative will, at the moment of creation. Needless to say, these long-lived assumptions have been challenged in recent years.⁸

While this “life-and-works” approach predominated music histories throughout the twentieth century, even during its heyday the sources on which music history drew were typically more heterogeneous. Even a staunch defender of the work concept, the influential musicologist Carl Dahlhaus, concedes: “the idea that music history is exemplified in works ... is by no means self-evident.”⁹ Dahlhaus's contemporary Hans-Heinrich Eggebrecht would venture one step further: “In the history of the creation of music there are no leaps, only gaps in transmission.”¹⁰ Documentary history, Eggebrecht argues, fails to capture the underlying continuities:

“For the historian, what is documented is merely the result of musical thinking, its congealed surfaces, be it as (compositional) ‘practice’ or as ‘theory’.”¹¹ Eggebrecht’s central historiographic category—musical thinking—manifests itself variously in the generalizing statements of music theory, the logic of individual works as unearthed by music analysis, and the historicity of compositional practice. The undocumented history of music, Eggebrecht argues, happens in musical thinking—fathomable in its processual nature, but not in its concrete activity.¹²

These two positions represent the dual nature of music history, one side emphasizing scholarly responsibility in the service of a *history* of music, and the other stressing the creative and artistic dimension, reaching for the ineffable, within a history of *music*. Eggebrecht’s ideas, though somewhat idiosyncratic, serve to demonstrate a widespread yearning to get beneath the documents, the musical notation, in hopes of gaining access to the raw materials of historical change. Some music historians, notably the early-twentieth-century French musicologist Jules Combarieu, proposed a methodology that gives vivid expression to this urge to comprehend even undocumented stretches of music history (Ex.1).¹³

This urge to get beneath the musical surface was fueled by the possibility of doing so in fairly specific terms: the materials of music—scales, rhythmic patterns, harmonies, etc.—can be described in concrete, technically precise language. These are the building blocks from which music is created. Where documentary evidence is scant and does not permit the full transmission of notated compositions, discussion of the musical material often stands in. And not without reason: materials can provide at least a glimpse of what was possible within the given parameters.

From this perspective, the quest for ancient Egyptian music presents a perfect case to examine the modes of writing music history. It ponders a musical repertory about which we have no knowledge whatsoever, but whose dearth of evidence has not stopped music historians from speculating. From the seventeenth century onwards, the question of Egyptian music has played on scholars' minds. All major music-historical accounts—Burney, Forkel, Padre Martini, de Laborde in the eighteenth century; Fétis, Kiesewetter, and Ambros in the nineteenth—devote chapters to Egyptian music that we know to be entirely speculative. Writing about Egyptian music was *de rigueur*—this is in itself a circumstance worth investigating.

Different time periods gave different specific answers to the question “Why Egyptian music?” To seek a unified answer is not the point here: this exploration of “music-historical Egyptomania” over three centuries of European history spotlights the conjunction between changing images of Egypt and ideas about the nature and history of music extracted from them. As this essay focuses on efforts to recover the technical bases of Egyptian music, some other aspects of Egyptomania¹⁴—notably Hermetic traditions, Masonic symbolism, and exoticist musical representations—are only touched upon, inevitably, to the extent they relate to the main questions raised here.¹⁵

A note of caution is in order. The hypotheses concerning Egyptian music explored here may appear far-fetched, some outright wrong-headed. Whether or not they are correct is inconsequential; absent sensational new discoveries, we will likely never know. What is important, however, is that the figures that articulated them were, almost without exception, regarded as the leading lights of their generation and were

eagerly read by their peers. From this perspective, the various efforts to “reconstruct” the elusive music of ancient Egypt constitute a prism of predominant intellectual trends of each period, illuminating in turn the wider cultural place of music.

While the lack of sounding evidence may be an obstacle for uncovering the mysteries of Egyptian music, our awareness of the conjectural nature of these histories clears the view toward their historiographic principles. Like Fétis, much to Verdi’s annoyance, music historians had to press the scant evidence hard to get closer to the mysteries of Egypt. In this sense, studying the history of Egyptian music offers insights into the mechanisms underlying the production of musical facts and historical trajectories in ways that few other areas of music history can.

The Origins of Egyptian Music

Egyptian music has captivated the minds of scholars at least since Athanasius Kircher’s *Oedipus Aegyptiacus* (1654). The Jesuit polymath (1602?-1680), who published in virtually all areas of knowledge of the early modern world, had previously completed an authoritative work on musical thought, *Musurgia Universalis* (1650). The overlapping questions between these two books go well beyond Kircher’s general ambitions in the field of universal science, which follow in the combinatorial mold of a Lullian *Ars magna*.¹⁶ As Ulf Scharlau has shown, *Oedipus* complements and completes the conception of music set forth in *Musurgia*. Thus, the frontispiece of *Musurgia* (vol.2) bears the motto “Musica nihil aliud est, quam omnium rerum ordinem scire,” which closely parallels the chapter heading in

Oedipus, “Quod Hieroglyphica Musica nihil aliud fuerit, quam scientia ordinis rerum Vniversi.”¹⁷

As is often stressed, the convergence of disparate spheres of knowledge in Kircher’s worldview is ultimately guaranteed by the unity of God’s creation. But, beyond this theological conviction, there are several concrete connections between music and the Egyptian world. One important aspect of Kircher’s comprehensive outlook on music concerned the Pythagorean legacy, which viewed music as a manifestation of the universal truth expressed in numbers. By defining *scientia musicae* as “sounding numbers,”¹⁸ Kircher reaffirmed the role of music within the quadrivium. Indeed, the much-discussed frontispiece of *Musurgia* (Ex.2) assigns prominence to the scene of Pythagoras in the smithy that, according to legend, provided the philosopher with the key to the mathematical nature of sound. This foundation myth of music theory, now known to be an acoustical impossibility, forms the cornerstone of the Pythagorean tradition. It was widely believed that Pythagoras had gained his mathematical knowledge from the wisdom of Egypt, where he had apparently been educated.

Among Kircher’s important contributions were his efforts to decipher hieroglyphs, earning him the moniker “father of modern Egyptology.”¹⁹ No modern commentator fails to point out that Kircher’s translations bear no relation to what is now known about Egyptian languages, notably because he assumed that all hieroglyphs were ideograms. Nonetheless, it is generally agreed that Kircher’s attempts set scholars on a path that eventually led to their decipherment. In *Oedipus*, Kircher attempted to relate the word “music” both to the Egyptian *moys*, meaning

water, and to Moses's name.²⁰ Kircher's explanation referred to Egyptian wind instruments, which were made from reeds growing on the banks of the Nile. Although Kircher's etymology has been declared spurious, his watery theory was widely referenced well into the eighteenth century.²¹

In Kircher's thinking, Egyptian culture occupied a privileged position due to its status as the earliest known civilization: according to biblical authority, even in the age of Abraham, when Israel was barely a nomadic tribe in the wilderness, Egypt was already a powerful high culture.²² As we shall see, Kircher was not interested in the specificity of Egyptian music, but rather what this early stage of culture could tell us about the general nature of music.

Kircher's intellectual world occupied a complex middle ground between church doctrine and humanistic scholarship. To understand in what ways Egyptian music featured in these discourses, it is useful briefly to recapitulate the most important chapters of their respective chronologies.²³ Since biblical chronology is a minefield, the dates mainly serve to remind ourselves of the stations that are relevant to reconstructing the history of music. Adam and Eve were generally believed not to have known music. Jubal, "ancestor of all who played the lyre and pipe," was widely believed to have invented music in the seventh generation—that is, 175-280AM.²⁴ As in all early modern chronologies, the two milestones are the Deluge and the Tower of Babel. Musical knowledge was acutely endangered by the Flood, which occurred, according to broad consensus, in 1656AM.²⁵ The theological authorities offered no certainty that later music was still the same as Jubal's invention, but most scholars assumed so. Noah's offspring began to populate the world anew, and among them,

Ham is credited with settling in Africa and becoming the progenitor of the Egyptian people.²⁶ Most scholars interested in music assumed that the Tower of Babel, marking the introduction of different languages, also had a profound impact on the paths music took. There is little consensus on the chronology: most scholars dated the tower to 1757–1996AM; Athanasius favored 1931AM—275 years after the flood.²⁷

Kircher's second strand of thinking was based on an intellectual genealogy, following in the humanistic tradition, in which the Egyptians taught the Greeks, the Greeks taught the Romans, who in turn laid the foundation of the modern world.²⁸ The humanistic and the theological strands take the enigma of Egyptian music in different directions. As we shall see, one will take us toward Greek music, and the other, surprisingly perhaps, toward Chinese music.

While many of his positions on music were clearly rooted in Christian teachings, Kircher used biblical authority with noticeable freedom. He regarded music as a divine gift, given to humans at the beginning of time.²⁹ For Kircher, it was thirst for knowledge that allowed humans to understand the principles of music.

Correspondingly, Jubal becomes the inventor specifically of *instrumental* music.³⁰ As for the Deluge, early modern musical thinkers were convinced that a musician was present on Noah's Ark.³¹ Kircher countered that this does not necessarily follow: even if music were lost during a second deluge, its logical nature, based ultimately in numbers and ratios, would allow humans to reconstruct it.³²

Whereas much of Kircher's cultural and historical work attempts to bring classical scholarship in line with biblical accounts, close readings can reveal the fissures that opened up between theological teaching and scientific thinking during

Kircher's age. His famous *Turris Babel* (1679), which questions the mechanical possibility of building a tower reaching the moon, is a case in point. Similarly, while Kircher's work on Egypt is careful not to cross biblical authority, his *Oedipus* toys with the idea that Egyptian culture *predated* the Deluge, a position that was difficult to square with the totalizing claim that the flood covered the entire planet.³³ From the perspective of music, arguably a less sensitive subject, this question was fairly uncontentious, since Kircher was certain that antediluvian music sounded the same: "Thus the invention of music did not originate with the Greeks, the Egyptians, the Chaldeans, but before the flood among the first humans."³⁴ Properly speaking, the Egyptians were the first who *re-established* music after the flood.³⁵ His interest in Egyptian music, as well as in other early cultures, was ultimately in the service of gaining insights into the nature and origin of music.

But if the goal was the near-impossible task of reconstructing antediluvian culture, and if early cultures such as Egypt had to stand in as the closest substitute, there still remained the problem of understanding the enigmatic Egyptian culture and its inscrutable hieroglyphs. Kircher, famously, tackled this problem by positing a parallelism between Egypt and China: hieroglyphs, he asserted, were related to Chinese characters, and pagodas were a version of pyramids.³⁶ This connection may seem curious—to be sure, it is baseless—but against the information provided by the biblical record this conceit has a certain plausibility. If individual languages were created after the Tower of Babel with humans scattered across the earth, it is conceivable that an underlying connection may exist. In addition to being forefather of the Egyptian people, Kircher speculated, Ham was also progenitor of the Chinese.³⁷

A similar pragmatism prevails in his linguistic work: the strategy of relating hieroglyphs to a *living* language may seem a promising approach. As Umberto Eco reminds us, Egypt was a “Hermetical phantom,” while China very much a “tangible Other.”³⁸ Kircher’s idea that Chinese culture could illuminate Egypt was an influential starting point, remaining authoritative for generations to come. Over time this theory was thrown into sharper relief, as it became commonly accepted, well into the eighteenth century, that China had been a colony of Ancient Egypt.³⁹

Kircher never extended his Sino-Egyptian association specifically to music. For him, the Egyptians had a philosophical approach to music, which explored particularly its mathematical structure and had succeeded in penetrating its deep relations to nature. In musical circles, meanwhile, Kircher’s legacy endured, even where his influence was not explicitly acknowledged.⁴⁰ Thus, the Enlightenment composer Jean-Philippe Rameau (1683-1764) believed that the study of Chinese music—which generated considerable interest in eighteenth-century France—could shed light on the enigma of antediluvian and Egyptian music.⁴¹

To be sure, Rameau’s musings on chronology and the earliest music occurred in the context of the high Enlightenment and, more specifically, his ambitions vis-à-vis the *Académie des sciences*.⁴² While the theological context of Kircher’s work had faded, the underlying anthropological questions that nurtured this inquiry into the earliest high culture persisted—with the important difference that this approach was now applied specifically to the question of what the original music may have sounded like. Unlike Kircher, who had viewed music through the numerical (and ultimately quadrivial) prism of Pythagoreanism, the Enlightenment regarded music as a

substance *sui generis*.⁴³ The problem of gaining direct access to the music of ancient Egypt remained the same as in Kircher's age. But, in true Enlightenment spirit, Rameau's age was confident that the universal nature of music could be understood through Egyptian music, whose secrets could in turn be unlocked by Chinese music.

Complicated Perfection

Before we follow this intellectual double flip further into the eighteenth century, approaching Egyptian music, *qua* *Ur*-music, from the vantage point of Chinese music, we should cast a glance on the humanistic tradition, which also framed the study of Egyptian music. This tradition takes us to classical scholarship and the few remaining testimonies about Egyptian music by ancient Greek authorities, above all Herodotus, Diodorus Siculus, and Plato.

Herodotus mentioned in passing that flute playing and singing played a part in Egyptian sacrificial ceremonies.⁴⁴ Diodorus's testimony proved more troublesome, asserting that the Egyptians considered music "not only useless but even harmful."⁴⁵ Needless to say, Diodorus's awkward pronouncement was regularly dismissed or explained away.⁴⁶ Plato is the nearest approximation of an ear witness, since he was believed to have spent time in Egypt. In his *Laws* Plato reported that the music of the Egyptians had attained unrivalled perfection.⁴⁷ Like painting, music was highly regulated in Egypt: the state prescribed suitable melodies and appropriate postures for performance; nothing else was allowed. As a consequence, Egyptian art had not changed in 10,000 years—*literally*, as Plato insisted. Because the requirements of the

state and the unchanging nature of the art were so closely attuned, Plato explained, Egyptian music had reached a miraculous level of perfection.

In this passage in the *Laws*, Egypt becomes the exotic utopia onto which Plato projected his anti-democratic views, previously articulated in the *Republic*, of how music and state come together in perfect union. It was disappointing, though perhaps inevitable, given the great philosophical weight that rests on this utopian music, that Plato neglected to report anything else about these perfect melodies sanctioned by the Egyptian state: posterity was left with tantalizing descriptions of their superior quality but no knowledge whatsoever about their sound.

Plato's testimony enriches and complicates our story. On the one hand, he adds another important characteristic to the discourse on Egyptian music: not only is it close to a pure *Ur-Music*, but it also constitutes no less than the *perfect* music. On the other, we know quite well from Plato's other writings what kind of music he favored. In the absence of any indication to the contrary, we should assume that Plato heard Egyptian music as fundamentally similar to Greek music—just a superior version of it. Moreover, we also know that the structures of Greek music of Plato's time have very little to do with those of Chinese music. In other words, despite the glowing appreciation it offers, Plato's testimony introduces a wrinkle into our story that is difficult to straighten out.

It is necessary to get technical here (Ex.3). Greek music is based on tetrachords, spanning a perfect fourth, whereas Chinese music is based on a pentatonic scale. This is not just a question of one note more or less; rather, both systems follow essentially different principles of construction.⁴⁸ Crucially, Chinese pentatonicism does not

accommodate intervals smaller than the whole tone, whereas the Greek tetrachord will inescapably include smaller intervals. We need not concern ourselves here with the intricacies of these musical traditions—tuning systems, modes, genera, etc.—to conclude that they build on different, largely irreconcilable, assumptions.

The historical connection to Plato and Greek culture is a little less fantastic than to China, given that Egypt had been under Greek rule since Alexander the Great. Nonetheless, some scholars of Egyptian music, especially in the nineteenth century, were concerned that the Greeks may have brought their own musical traditions and that this line of hegemony, during the Ptolemaic period, might have sullied the purity of Egyptian music. This concern was compounded by the fact that Greek music, which was monophonic, bears little resemblance to modern music, whose essential achievement, the eighteenth century firmly believed, was the invention of harmony. For this reason, unlike the other arts of antiquity, the music of ancient Greece was widely thought to be inferior to its modern counterpart.⁴⁹ Still, at that stage few were prepared to rupture the golden chains linking modern culture with the Romans and, beyond that, Greeks and Egyptians.⁵⁰

This dual derivation, which located Egyptian music awkwardly between China and Greece, posed a particular challenge that all scholars of Egyptian music in the eighteenth and nineteenth century faced. Jean-Philippe Rameau, widely acknowledged to have put music theory on a scientific footing by providing a universal system of understanding the nature of music, found an elegant (if problematic) solution to sidestep the differences between the two systems.⁵¹ Instead of treating pentatonicism and tetrachords as separate entities, Rameau viewed these

two constructs through the lens of his concept of the “triple progression,” explained in Ex.4. In a word, the triple progression was considered the paragon of how all music works; it represented nothing less than a Newtonian law of the musical world.

Rameau had originally conceived of the triple progression to explain musical structures as were commonly found in the tonal music of the French eighteenth century. But, in the ebullient spirit of the age, the specificity of the musical structures was subsumed under Enlightenment ideas of universality. As his theories gained hold through the 1750s, Rameau began to extend the scope of the theory and sought applications to non-Western repertoires. In this spirit, Rameau argued that both Chinese pentatonicism and Greek tetrachords were ultimately but subsets of the triple progression. To make this argument, he had to ignore all cultural and musical contexts, most importantly the fact that both Chinese and Greek music are monophonic traditions that do not employ triadic harmonies. Rameau conceptualized the harmonic foundation in these emphatically non-harmonic musical traditions on the basis of his triple progression. These efforts to highlight commonalities may seem egregiously procrustean in their disregard for specificity and difference—as indeed they are—but they are born of the firm belief in the universal basis of all music, given directly by nature.⁵² In Rameau’s view, then, both pentatonicism and tetrachords are merely partial aspects of the principles that were fully brought to light by his discovery of the scientific truth about music, embodied by the triple progression.

In his attempt to reconcile both musical traditions, Rameau engaged in wild speculation, as he sought to underscore his argument with historical depth:

Could not even those who labored at the construction of that tower—be it a son of Noah, be it others to which this son might have transmitted it, and who would then move on to China, even to Egypt if you will—could they not have already reflected upon a similar progression? Is it not possible that the tetrachord might have been carried to other places in that way? All this is likely.⁵³

In this extraordinary passage Rameau construed the biblical patriarch as a modern Enlightenment figure: both noticeably rational and musical, Rameau's Noah "could not seriously have failed to gather everything that he would believe proper for several uses, of the sort of the triple progression, even the tetrachord,"⁵⁴ and, the way Rameau describes these concepts, one might be forgiven for thinking that they almost take on the shape of physical objects.

During these years, Rameau highlighted the scientific aspect of the triple progression: its mathematical underpinnings were such that Noah "had already drawn several benefits from the progression as far as the sciences are concerned." Understanding the principles of music, he argued in this reversal of the standard Pythagorean position, can teach us something important about the nature of arithmetic and geometry.⁵⁵ Rameau reiterated his conviction that the ancient Egyptians must have been in possession of the triple progression, since Pythagoras's education took place in Egypt.⁵⁶ In his essay "L'origine des sciences," published two years later, tracing the origins of scientific inquiry back to ancient Egypt, he would even suggest that Pythagoras' trigonometric theorem might have been inspired by the basic properties of the triple progression.⁵⁷ Against this background it becomes

understandable why Rameau would make the astonishing claim that during Noah's age understanding music would have led to many other scientific insights.

But, to continue this musical interpretation of Rameau's biblical narrative, even Rameau had to concede that after the flood subsided and the earth needed to be resettled, Noah had other things to worry about than music theory. In this situation, Rameau blithely conjectured, it seemed only natural that Noah would delegate and command "his sons to revisit the treatises that he had collected, in order to report to him on them." And as his sons set about repopulating the world, so musical knowledge would also be passed into the distant corners of the world: "Could it not be the case that the progression had fallen into the hands of one son and the tetrachord into the hands of another, and that they, unable to see the propitious time to make use of them, carried them into different parts of the world?"⁵⁸ In this process, the originally complete knowledge of music, in the form of the triple progression, would break up, and Greece was left with the tetrachord, while the progression made it to China and Egypt. As Rameau believed that China was the oldest world culture, older even than Egypt,⁵⁹ it seems the events following the Tower of Babel would only exacerbate, but not cause, the subsequent breakup of music into different systems.

The music theorist Pierre-Joseph Roussier (1716-1790?), who began his musical career as an enthusiastic follower of Rameau, took the elder musician to task for not going far enough. Rameau had concluded: "Even if the Chinese and Pythagoras follow this [triple] progression, the systems that they extracted from it have no relation to each other, no more than to the tetrachord."⁶⁰ For Roussier, however, Rameau's focus

on the broken fragments of Greek tetrachords and Chinese pentatonicism missed the larger unifying truth of music. Roussier set out, by contrast, to prove that this negative conclusion was based on a misapprehension of the profound relationship between these diverse systems.⁶¹

Roussier was an autodidact who quickly rose to the ranks of an expert in ancient musical cultures. His *Mémoire sur la musique des anciens* (1770), attempting to reconcile Chinese music with Greek and Egyptian music, must count as the boldest effort in the history of this problem. Crucially, Roussier regarded the triple progression not as a closed harmonic unit, but considered the fundamental fifth-relation on which it is based as the universal key to scale formations. Put simply, the pentatonic scale C-D-E-G-A consisted of four fifths-relations C-G-D-A-E reordered; by adding two more fifths, F-C-G-D-A-E-B, Roussier would arrive at full-blown diatonicism. This open-ended perspective allowed him to reconsider the evolutionary potential of music (Ex.5). In the exuberant spirit of Enlightenment universality, Roussier drew up a table of the musical systems of the ancient world, through which the double octave of the full Greek system gradually emerged.⁶² However, in Roussier's evolutionary chart a gap is noticeable between the Greek four- and six-note formations, which he boldly closed, undeterred by any chronological or geographic concerns, by interpolating Chinese pentatonicism.

Egyptian music stands apart from the evolution depicted in Roussier's representation (Ex.6). Of early musical systems, Roussier claimed, Egyptian music alone boasted a fully formed chromatic scale, just as is found in modern western music.⁶³ He commented coyly:

Whether the Egyptians had a system similar to the one we just saw, we cannot know for sure. However, what is certain is that they have a twelve-fold series of triple progressions, as is proven by the reunion of the Greek and Chinese systems, encapsulated in potential and as if implicitly, in the Lyre of Mercury.⁶⁴

The lyre of Mercury, with its four strings tuned at two fourths separated by a whole-tone, is Roussier's unassuming starting point for a journey from simple beginnings to complex and highly developed musical systems. Roussier's evolution, however, does not progress in strict chronological terms. The evolutionary goal, Roussier's Egyptian 41-step chromatic scale, is technically the earliest musical system considered in this book. Roussier conceded that what he ended up with was "more or less, the current system of the moderns."⁶⁵ In Roussier's view, then, the scientific principles that Rameau boasted his music theory had uncovered were merely a *re-discovery* of what had long been ancient esoteric knowledge, a carefully kept secret of the Egyptian priests.⁶⁶

Roussier's startling conclusion, in which the very oldest music theory was the same as the most recent, may raise some eyebrows. The justification of this position is ultimately a consequence of the Platonic judgment—with a twist: if Egyptian music was perfect, it surely had to be every bit as good as modern music. With this startling theory, Roussier effectively cut through the Gordian knot of the *Querelle des anciens et des modernes* that was still simmering in Enlightenment musical circles. Perhaps the most ingenious part of Roussier's daring hypothesis was that, in the absence of even a shred of musical evidence, there was no way to disprove his theory.

Music-historical Orientalism

Napoleon's Egyptian campaign of 1798-1801 may have ended in military failure, but it was a genuine boon to scholarship.⁶⁷ Unusually for a military campaign, Bonaparte had taken with him 167 scientists, engineers, and artists to ennoble his mission in the spirit of Enlightenment inquiry. The findings of these *savants*, written up in the monumental *Description de l'Egypte* (1809-1829), provided the basis of modern Egyptology, which blossomed in France and Britain as a direct consequence of the expedition. The spoils of the invasion did not stay with the French for long: the Egyptian antiquities taken by the French were claimed by the British in the 1801 capitulation, including the Rosetta stone, which found its way into the British museum.⁶⁸

Guillaume-André Villoteau (1759-1839), considered an otherwise "undistinguished"⁶⁹ musician, was the scholar in charge of music on Bonaparte's expedition. The *Description* contains two treatises by Villoteau concerning modern Arabic music, which continue to be held in high regard, whereas his contribution to ancient music disappointed many of his learned readers.⁷⁰ In this treatise, Villoteau related the music of ancient Egypt to Greek ideas, filtered through a Rosseauian lens concerning the joint origin of music and language. In the *Republic*, Villoteau argued, Plato may have found musical practice in Greece wanting, but the musical principles he absorbed there set him on a path that allowed him, in the *Laws*, to appreciate the genuine perfection of Egyptian music: "One would produce a very complete treatise of the music of the Egyptians if one were to follow Plato in all the details he goes into about the manner of teaching, learning and practicing this art"⁷¹ among the Greeks.

Villoteau's starry-eyed, outdated embrace of Platonic positions was roundly rejected by other scholars.⁷² Later commentators speculated that the treatise might even have been written before the expedition.⁷³

Despite these shortcomings, the *Description* did open up a new source of information: musical instruments depicted in tomb paintings and reliefs. Before the Napoleonic campaign, only few such representations were known, notably a two-stringed lute engraved on an obelisk discovered in Rome (Ex.7). The English traveler and music writer Charles Burney (1726-1814), who included the image in his *General History of Music*, speculated about the music that could be played upon this instrument. If the strings are tuned a fourth apart, he imagined, it could play two conjunct tetrachords, whereas, tuned a fifth apart, they would produce disjunct tetrachords or a whole octave. Burney enthused: "This instrument, therefore, is not only a proof that music was cultivated by the Egyptians in the most remote antiquity, but that they had discovered the means of extending their scale, and multiplying the sounds of a few strings, by the most simple and commodious expedients."⁷⁴ Potential became quickly hypostatized into solid proof in Burney's conjecture.

The largest number of instruments found and depicted are cymbals and sistra (Ex.8). Although these unpitched noise-makers played a major part, especially in rituals, they were usually given short shrift in the literature since their information value concerning musical systems is close to zero. The *Description* included musical representations, notably several harps with varying numbers of strings (Ex.9). The German scholar Gottfried Wilhelm Fink (1783-1846) found that most harps were depicted with 9-11, 15-16, or 21 strings and concluded that the Egyptians, like the

Chinese, must have employed pentatonicism, the “oldest scale”:⁷⁵ multiples of 5 strings (10 or 15) would provide all the tones of the scale, whereas multiples of 5 plus 1 (11, 16, or 21) would additionally provide the fundamental note of the scale as its highest string.⁷⁶ Fink was comparatively tight-lipped in his explanation of how the nine-stringed instrument would fit into this scheme.

By the 1830s, associations with China were becoming increasingly outmoded.⁷⁷ Fink remained alone in his conviction that the number of harp strings proved the use of pentatonicism in ancient Egypt. But others were equally eager to find ways to read musical parameters out of the specific dimensions of the instruments and their representations.⁷⁸ The frustration with lacking concrete musical knowledge was thrown into relief by the successes in other areas of the study of Egyptian culture, notably the decipherment of the trilingual Rosetta stone, inscribed with texts in Demotic, Greek, and hieroglyphs.⁷⁹ Just how grave this frustration was, and how fiercely scholars were searching for an answer, can be gleaned in the extent to which they were prepared to speculate wildly.

The Belgian musicologist François-Joseph Fétis, whom we encountered initially, was convinced that he had found the key to solving the mystery of Egyptian music.⁸⁰ After noting that “nothing is more difficult than to form a fair idea of a music whose elements are absolutely different from those that form the basis of the music one has heard for one’s whole life,”⁸¹ Fétis argued:

All these instruments have mounted a large number of strings; these indicate the habitual use of an extended musical scale, and likely also of intervals smaller than those that divide the European scale. This trait is characteristic in the music of the

Orient, particularly in that of the Egyptians and Arabs, but it is only by induction that we can arrive at an approximate understanding of the ancient state of that music.⁸²

Where Fink had interpreted the large number of harp strings as an indication of wide tonal range, up to four octaves, Fétis countered that they suggested the use of microtones, intervals smaller than a semitone. His conflation of Egyptian with Arabic music under the catch-all term of “Oriental” is telling: Arabic music, to be sure, uses smaller intervals than European music, but the inclusion of ancient Egyptian music is questionable.

Fétis’s argument was far-reaching: he believed to have found the long-lost notation of ancient Egypt. The key to Egyptian music, he believed, lay in the musical notation of the Coptic Church, Egyptian orthodox Christians. Their liturgy continued to use the Coptic language, an idiom related to Late Egyptian (which was written in hieroglyphs), which was commonly spoken until the seventeenth century. “If the original people of Egypt,” Fétis asked hypothetically, “have preserved their original language after so many centuries, despite the mixture of foreign peoples in the country and their long dominance, is it not presumable that the same people had also retained the same ancient musical system?”⁸³

Fétis explained that the music of the Orient—by which he meant Arabic singers, Greek Christian monks, Coptic Church, and Jewish synagogues—was marked by an extraordinary number of embellishments. Their singing style, “overburdened with ornaments, comprises an extended scale and moves with great speed from low to

high and from high to low.”⁸⁴ These features, Fétis argued, lend a distinctive character to Oriental music, which sounds “rather strange” to the European ear.

The progressive use of this “excessively ornate singing,”⁸⁵ Fétis continued, necessitated a fundamentally different notation. Rather than notating each tone in its own right, as does western notation, the rapid movement of this ornamented Oriental music called for a notation capturing groups of sounds and phrases. The notation specifically suited to these demands, Fétis argued, was ultimately derived from Demotic script—not coincidentally, perhaps, one of the scripts included on the Rosetta stone.⁸⁶ While the notation of Eastern chant is normally ascribed to the seventh-century Saint John of Damascus, Fétis made an impassioned case that this notation was actually much older and dated back to ancient Egyptian times: “Since it cannot possibly be applied except to music overladen with embellishment, and requiring great flexibility of voice, it follows necessarily that the present music we find in the Greek church and among some African nations gives us an exact idea of the music of ancient Egypt.”⁸⁷

Let us review the various stages of Fétis’s complex argument. Based on his interpretation of the large number of strings found in harps depicted in tomb paintings, Fétis started with the assumption that ancient Egyptian music was microtonal, using smaller intervals than European diatonic scales. From there, he pivoted to grouping together various Eastern chant traditions, asserting by extension that Egyptian music must have sounded similar. He then identified the notation of orthodox Byzantine chant as derived from Demotic. The traits of this script appeared to him as the visual equivalent of the overly ornate style that for him characterized

this conglomerate of Eastern chants. Since the script, apparently the only adequate form of notation for this music, related to an Egyptian language, Fétis concluded, it must be the long-lost notation of the ancient Egyptians.

Fétis's extravagant argument begs the question: his idea of the excessively ornate Egyptian singing is both precondition and consequence of his identification of the elusive notation in Demotic script. Nonetheless, we can glean certain important features from this argument. First of all, Fétis had great faith in the power of notation. His argument, based on cursory knowledge of the craze surrounding the decipherment of hieroglyphs during the 1820s, held that if the Copts preserved elements of ancient Egyptian languages, their script, Demotic, would hold clues as to Egyptian notation. Fétis was certain that, along with this system of notation, the Copts must have simultaneously imported wholesale the traits of the earlier Egyptian music. We only need to decipher the notation to get "an exact idea" of ancient Egyptian music. If that is the case, by the same token, we should be able to deduce an exact idea of the nature of, say, a Bach fugue from a score of a Beatles song. Second, Fétis's argument was clearly carried by the persuasive power of Orientalism.⁸⁸ Gone are the speculative connections to China of the previous generation. Instead, the sweeping assumptions underlying Fétis' argumentative structure, equating Arabs with ancient Egyptians, and beyond that with Jewish and Greek orthodox traditions, only make sense against the background of this motley conglomerate as establishing an "Other" that differs from and mirrors certain important traits about the European tradition.

A marked rift becomes discernible during this time between French and German scholarship. Egyptophilia was still prevalent in France, with many scholars eager to build on the imagined cultural links to ancient Greece, a much better-known ancient culture, while German scholars increasingly cast doubt on the insights Greek music could provide, and indeed whether Egyptian music was all that it was cracked up to be. German critics, always eager to introduce finer historical differentiation, pointed out that, despite Egypt's pervasive image as a never-changing culture, there were in fact distinctive periods.⁸⁹ The Greek conquest of Egypt and the subsequent Ptolemaic rule suggested strongly that Egyptian culture did not remain free from foreign influence. Raphael Georg Kiesewetter, Fétis's chief adversary, argued that Fétis's faith in the Egyptian Christians was misplaced because it ignored the complexities of the political and historical forces involved in any process of cultural transfer:

One would search in vain among the Copts for the music of the ancient Egyptians. Language, it is true, is transplanted from parents to children under any circumstance in family life, and only the complete integration with new inhabitants can cause a complete loss. Inherited music, however, is gradually quietened under the pressures of tyranny, of poverty, and of misery, with the regression into barbarism. Even if an original form of music were to be found among the Copts (which is doubtful), who would be able to say it was still the same as that of their forefathers?⁹⁰

Despite Fétis's adventurous Orientalist efforts, and despite the renewed hope the Egyptian campaign had instilled in the researchers of solving Egypt's long-standing mysteries, certainty about its elusive music was simply not forthcoming.

Interpreting Gestures

While the Napoleonic era added a large number of sources to the study of Egyptian music, the primary group of scholars to interpret them were musicians, who viewed the evidence through the lens of organology, the study of musical instruments, but often lacked tools to interpret the wider context in which music-making happened. The professionalization of archaeology, around the turn of the twentieth century, ushered in a new era in the systematic study of tomb paintings.

Musicologists and Egyptologists began examining larger musical scenes on tomb paintings, including instrumentalists and dancers. These musical scenes typically depict sizeable ensembles of musicians, including wind players and harpists (Ex.10). Efforts to reconstruct ancient instruments by measuring images and building exact replicas were thwarted by the high level of stylization characteristic of Egyptian painting. Instead, scholars took to more holistic interpretations of musical scenes and deduced from the presence of instrumental ensembles that Egyptian music was likely not monophonic.⁹¹ This refueled the intriguing prospect that the Egyptians might already have known the secret of harmony. Even a skeptic as Kiesewetter was swept up by this tantalizing possibility. Noting that a harpist is depicted as plucking more than one string at a time, he suggested that Egyptian music must have been multi-voiced, and hence harmonic.⁹²

As before, caution must be urged in the interpretation of visual sources. The non-instrumentalists in these images have continuously puzzled modern interpreters. Music historian August Wilhelm Ambros (1816-1876), for one, thought they must

have been singers.⁹³ But their position—each facing an instrumentalist and not each other, as one would expect in musical ensembles—indicates that more is going on. Modern-day Egyptologists have suggested that this image should be read as cheironomic, that is, as indicating music with gestures: the non-instrumentalists seem to indicate in the first place that music is being played and heard.⁹⁴

Hans Hickmann (1908-1968) went further than others when he asserted that these figures constitute no less than the elusive musical notation of Egyptian music. We see each of these figures kneeling in a similar position, with one hand resting on the knee, with index finger and thumb bent toward each other to form a circle. (This would also explain why the harp, plucking two strings, is assigned two figures.) Hickmann identified two distinct hand gestures—the circle shape or a flat open palm. He explained that these hand positions represent the fundamental and the fifth, the dominant, whereas the angle of the forearm specifies the precise interval relative to the hand.⁹⁵

If true, this would be sensational because it would finally provide the long sought-after evidence that the Egyptians in fact possessed a form of harmony, or simultaneous voices moving at different pitches—something that is noticeably absent from both Greek and Chinese music (Ex.11.) The biggest problem of this hypothesis, however, is the fact that this notation has no temporal dimension. All we see in the images is a pictorial representation of a snapshot of sound. The kind of music that can be captured with this notation would necessarily be static: it can contain drones or long held-out pitches and harmonies, but not even the simplest rhythms or melodies. Notating music with anything resembling a melody would

require a comic strip of such images, and no archaeologist has so far found such a musical storyboard.

If we were to follow Hickmann's interpretation, the great mystery of Egyptian music would be sadly deflated: the music could indeed be multi-voiced, as had been hoped over many generations, but it would also be much less sophisticated than the collective scholarly imagination had led us to believe. And imagination—or “learned reveries,” as Kiesewetter put it in the 1830s⁹⁶—is the key word: for the last two millennia the dream of the lost perfection of Egyptian music has provided fertile ground for all kinds of music-theoretical projections. One can easily empathize with Ambros's sigh: “If only we could *hear* for half a minute what we so often *see* in old monuments.”⁹⁷

But, to return to Verdi and the Egyptian flute, the starting point of our exploration, while the lack of sounding evidence may be frustrating from one perspective, from another it is a rare affordance. The pressing desire to reconstruct this repertory of which virtually no musical trace remains shows all the more clearly the underlying historiographic principles. Conceived as an early or indeed the first musical culture, Egypt occupies a privileged position in a musical thinking that attributes special significance to points of origins and outlines historical trajectories of music actualizing itself over long periods of time. The speculative thought that carries much of this discourse lays bare the assumed underlying principles of music and the ways in which the unfolding of music history is imagined.

The example of the elusive Egyptian music provides a sharp reminder that theorizing, in the service of “musical thinking,” goes far beyond the mere analysis of

musical structures, and actually establishes a complex relationship between the repertory and the intellectual foundation of the theoretical edifice. It is for this reason that theorizing even a repertory from which we know no music is not worthless. On the contrary, music historians and theorists cannot help but put their cards on the table—when they imagine Egyptian music as the perfect balance of music and political culture, as a surprisingly advanced stage in a universally emerging music, or an orientalist fantasy. Paradoxically, the less actual music there is, the clearer a view we gain of what happens when music is being theorized.

Moreover, in an extreme case as here, where musical repertory, performance traditions, even musical notation are lacking, another question suddenly moves center stage: how is such music transmitted? This question is often all but ignored, even though its answer can be extremely complex. Thinking about Egyptian music forces us to think through the media by which music is communicated and to extract any potential information from them. When Fétis tried to extract the essence of Egyptian music from Demotic script, which he believed to be the basis of its non-extant notation, this may have seemed like a particularly ill-fated effort, all too easy to dismiss. But, up to a point, as anyone working with non-standard repertoires knows, that is precisely what music historians do most of the time. The notation before us provides the parameters and limitations within which music is normally considered. Likewise, the attempts by Fink and others to squeeze any musically useful information out of the physical appearance of Egyptian instruments may appear similarly fanciful. However, the use of instruments as “epistemic things”⁹⁸—objects that actively contribute to knowledge acquisition—is a practice widely

discussed in the history of science and deemed not only legitimate but rather inescapable. Verdi's snarl notwithstanding, *Così si fa l'istoria* hits home. It is because of, not despite, its extremity that the story of ancient Egyptian music presents an important lesson about the mechanisms involved in the creation of musical thinking.

NOTES

¹ A preliminary version of this article in German, “Die ägyptische Spieldose,” was given as a keynote to the conference *Konstruktivität von Musikgeschichtsschreibung* (Göttingen, 2012). Letter 8 February 1878, in Annibale Alberti, ed., *Verdi intimo: cattedrio di Giuseppe Verdi con il conte Opprandino Arrivabene* ([Milan]: Mondadori, 1931), 209. See also Gabriela Cruz, “Aida’s Flutes,” *Cambridge Opera Journal* 14 1/2 (2002), 177-200.

² Alberti, *Verdi*, 209. Verdi’s ambiguous and polemical phrase differs somewhat from Fétis’s explanation. François-Joseph Fétis, *Histoire générale de la musique* (Paris: Firmin Didot, 1869), i:223.

³ Alberti, *Verdi*, 209.

⁴ Bo Lawergren, “Music,” in *Oxford Encyclopedia of Ancient Egypt*, ed. Donald B. Redford (New York: Oxford University Press, 2001), ii:450-454.

⁵ Richard Taruskin, *Oxford History of Western Music* (Oxford: Oxford University Press, 2005), 1.

⁶ See Carl Dahlhaus, *Foundations of Music History* (Cambridge: Cambridge University Press, 1983).

⁷ Roman Ingarden, *The Work of Music and the Problem of Its Identity* (Berkeley: University of California Press, 1986).

⁸ See Susan McClary. *Feminine Endings: Music, Gender, and Sexuality* (Minneapolis: University of Minneapolis Press, 1991).

⁹ Dahlhaus, *Esthetics of Music* (Cambridge: Cambridge University Press, 1982), 10.

¹⁰ Hans-Heinrich Eggebrecht, "Musikalisches und musiktheoretisches Denken" in *Geschichte der Musiktheorie*, ed. Frieder Zaminer (Darmstadt: Wissenschaftliche Buchgesellschaft, 1985), i:58.

¹¹ Eggebrecht, *Musikalisches Denken* (Wilhelmshafen: Heinrichshofen, 1977), 137.

¹² *Ibid.*

¹³ Jules Combarieu, *La musique et la magie* (Paris: Alphonse Picard, 1909), 24.

¹⁴ See Jean-Marcel Humbert, Michael Pantazzi and Christiane Ziegler, eds., *Egyptomania: Egypt in Western Art 1730-1930* (Ottawa: National Gallery of Canada, 1994); Humbert, *L'Égyptomanie dans l'art occidental* (Paris: ACR Édition, 1989), and James Stevens Curl, *The Egyptian Revival: Ancient Egypt as the Inspiration for Design Motifs in the West* (New York: Routledge, 2005).

¹⁵ See Joscelyn Godwin, *Music and the Occult: French Music Philosophies 1750-1950* (Rochester: University of Rochester Press, 1995), Jean-Pierre Bartoli, "À la recherche d'une représentation sonore de l'Égypte antique en France de Rossini à Debussy," in Humbert, ed., *L'Égyptomanie à l'épreuve de l'archéologie* (Paris: Gram, 1996), 479-506, and Jan Assmann, *Die Zauberflöte: Oper und Mysterium* (Munich: Hanser, 2005).

¹⁶ See Thomas Leinkauf, *Mundus combinatus: Studien zur Struktur der barocken Universalwissenschaft am Beispiel Athansius Kirchers (1602-1680)* (Berlin: Akademie-Verlag, 1993); Godwin, *Athanasius Kircher's Theater of the World: The Life and Work of the Last Man to Search for Universal Knowledge* (Rochester: InnerTraditions, 2009), and John McKay, "Universal Music-Making: Athanasius Kircher and Musical Thought in the Seventeenth Century" (PhD, Harvard 2012).

¹⁷ Ulf Scharlau, *Athanasius Kircher als Musikschriftsteller* (Marburg: Görich & Weiershäuser, 1969), 67-68. Kircher, *Oedipus Aegyptiacus* (Rome: Vitalis Mascardi, 1654), ii.2:119-138.

¹⁸ Kircher, *Musurgia universalis* (Rome: Francisco Corbeletti, 1650), i: 566. See Scharlau, *Musikschriftsteller*, 77.

¹⁹ For instance, Erik Iversen, "The Hieroglyphic Tradition," in John R. Harris, ed., *The Legacy of Egypt* (Oxford: Clarendon Press, 1971), 170-96.

²⁰ Kircher, *Prodromus Coptus sive Ægyptiacus*, (Rome: S Cong de Propaganda Fide, 1636), 138-39, *Oedipus*, ii.2:120-123 and *Musurgia*, i.1:44. See Scharlau, *Musikschriftsteller*, 293.

²¹ Scharlau, *Musikschriftsteller*, 293, contains an extensive list.

²² Subsequent generations, less steeped in theological certainties, had to spell out this rationale. See Johann Nikolaus Forkel, *Allgemeine Geschichte der Musik* (Leipzig: Schwickert, 1788), i:72; Heinrich Christoph Koch, "Kurzer Abriß der Geschichte der Tonkunst," *Journal der Tonkunst* 2 (1795), ii:217.

²³ See Anthony Grafton, "The Chronology of the Flood," in *Sintflut und Gedächtnis: Erinnern und Vergessen des Ursprungs*, ed. Martin Mulsow and Jan Assmann (Munich: Wilhelm Fink, 2006), 65-82, and "Kircher's Chronology," in *Athanasius Kircher: The Last Man Who Knew Everything*, ed. Paula Findlen (New York: Routledge, 2004), 165-179.

²⁴ *Gen.* 4:19-22.

²⁵ *Gen.* 7:10-24 and 8:1-14. On the intricacies of chronology, see Grafton, "Chronology" 65-82.

²⁶ Ps. 78:51, 105:23 and 27, 106:22.

²⁷ See Grafton, "Kircher's Chronology," 174.

²⁸ See Forkel, *Geschichte*, i:74, and Koch, "Abriß," ii:215-16.

²⁹ *Oedipus* ii.2:121, and *Musurgia* i.1:44. See Scharlau, *Musikschriftsteller* 289.

³⁰ *Oedipus*, ii.2:121.

³¹ See Warren Dwight Allen, *Philosophies of Music History* (New York: Dover, 1962), 50-58.

³² *Musurgia* i.1:44. See also Thomas Leinkauf, "Kirchers Musikverständnis," in *Ars magna musices: Athanasius Kircher und die Universalität der Musik*, ed. Marcus Engelman and Michael Heinemann (Laaber: Laaber, 2007), 15.

³³ *Oedipus*, i:65-82. See Grafton, "Chronology," 80.

³⁴ *Musurgia* i.1:44, and *Oedipus* ii.2:120.

³⁵ *Oedipus* ii.2:121.

³⁶ Kircher, *China monumentis* (Amsterdam: Johann Jansson, 1667), 166-167.

³⁷ Kircher, *Arca Noe* (Amsterdam: Johann Jansson, 1675), 210.

³⁸ Umberto Eco, *The Search for the Perfect Language* (Oxford: Blackwell, 1995), 161.

³⁹ Joseph de Guignes, *Mémoire dans lequel on prouve que les Chinois sont une colonie égyptienne* (Paris: Desaint et Saillant, 1759). Don Cameron Allen reviews the history of scholarship in "The Predecessors of Champollion," *Proceedings of the American Philosophical Society* 104/5 (1960), 527-547.

⁴⁰ See Gottfried Wilhelm Fink, *Erste Wanderung der ältesten Tonkunst* (Essen: Baedeker, 1831), 53.

⁴¹ See n. 53.

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- ⁴² See Thomas Christensen, *Rameau and Musical Thought in the Enlightenment* (Cambridge: Cambridge University Press, 1993).
- ⁴³ See Brian Hyer, "Before Rameau and After," *Music Analysis* 15 (1996): 75-100.
- ⁴⁴ Herodotus, 2.48.2.
- ⁴⁵ Diodorus, *Bibliotheca historica*, 1.81.7.
- ⁴⁶ See Forkel, *Geschichte*, 74-76; Koch, "Abriß," ii:217-19; Charles Burney, *A General History of Music* (London: T. Becket, 1776), i:200-203.
- ⁴⁷ *Laws* 656-7.
- ⁴⁸ See De Pauw, *Philosophical Dissertations on the Egyptians and Chinese* (London: T. Chapman, 1795), i:221.
- ⁴⁹ Koch, "Abriß," ii:205-210 and 226.
- ⁵⁰ The nineteenth century was less squeamish: see Raphael Georg Kiesewetter, *Über die Musik der neueren Griechen, nebst freien Gedanken über altegyptische und altgriechische Musik* (Leipzig: Breitkopf und Härtel, 1838), 61.
- ⁵¹ See Christensen, *Rameau*, esp. 295-298.
- ⁵² See David E. Cohen, "The 'Gift of Nature': Musical 'Instinct' and Musical Cognition in Rameau," in *Music Theory and Natural Order from the Renaissance to the Early Twentieth Century*, ed. Suzannah Clark and Alexander Rehding (Cambridge: Cambridge University Press, 2001), 68-93.
- ⁵³ Rameau, *Nouvelles réflexions sur le principe sonore*, 225.
- ⁵⁴ *Ibid.*
- ⁵⁵ *Ibid.*, 228-237.
- ⁵⁶ *Ibid.*, 234.

⁵⁷ Rameau, *L'Origine des Sciences*, (Paris: S. Jorry, 1762), préface, 3-4.

⁵⁸ Rameau, *Nouvelles réflexions*, 226.

⁵⁹ *Ibid.*, préface, 3.

⁶⁰ *Ibid.*, 224.

⁶¹ Pierre-Joseph Roussier, *Mémoire sur la musique des anciens* (Paris : Lacombe, 1770), 114. Roussier is discussed in Godwin, *Occult*, 31-46.

⁶² *Ibid.*, 24.

⁶³ *Ibid.*, 64.

⁶⁴ *Ibid.*, 65.

⁶⁵ *Ibid.*, 69.

⁶⁶ *Ibid.*, xvj-xvij and 70.

⁶⁷ Modern considerations start with J. Christopher Herold, *Bonaparte in Egypt* (London: Hamish Hamilton, 1963). The last decade has seen resurgent interest, see among others, Irene Bierman, ed., *Napoleon in Egypt* (Reading: Ithaca Press, 2003); Paul Strathern, *Napoleon in Egypt* (New York: Bantam, 2009).

⁶⁸ Nina Burleigh, *Mirage: Napoleon's Scientists and the Unveiling of Egypt* (New York: Harper 2008), 209-218.

⁶⁹ Herold, *Bonaparte*, 30. Fétis includes Villoteau in his *Biographie universelle des musiciens et bibliographie générale de la musique* (Brussels: Leroux, 1844), viii:459-464.

⁷⁰ Guillaume-André Villoteau, "Dissertation sur la musique des anciens égyptiens," in *Déscription de l'Egypte* (Paris: Imprimerie impériale, 1809), ii.1:357-426.

⁷¹ *Ibid.*, 394.

⁷² Besides the ever-cantankerous Kiesewetter, see Fink, *Wanderung*, 12

⁷³ Kiesewetter, *Musik*, 42.

⁷⁴ Burney, *History*, 205-06.

⁷⁵ Fink, *Wanderung*, 53.

⁷⁶ *Ibid.*, 236-37.

⁷⁷ As philologists turned their attention to Sanskrit as the presumptive *Ur-language*, hypotheses on the evolution of music were increasingly filtered through Indian music. This paradigm shift is epitomized in Adrien de la Fage's (unfinished) *Histoire générale de la musique et de la danse* (Paris: Imprimeurs unis, 1844), which treats Egyptian music after extensive discussion of China and India.

⁷⁸ Reproductions of such paintings were notoriously unreliable. See Carl Engel, *The Music of the Most Ancient Nations* (London: J. Murray, 1870), 185.

⁷⁹ See Francis Griffith, "The Decipherment of the Hieroglyphs," *Journal of Egyptian Archaeology* 37 (1951), 38-46.

⁸⁰ Fétis's early theory, reviewed here, was significantly bolder than his 1869 *History of Music*, which Verdi read.

⁸¹ Fétis, "Résumé philosophique de l'histoire de la musique," *Biographie universelle*, i:xl.

⁸² *Ibid.*, i:lxvii.

⁸³ Fétis, *Biographie*, i: lxviii.

⁸⁴ *Ibid.*

⁸⁵ *Ibid.* lxix.

⁸⁶ *Ibid.* lxx-lxxi.

⁸⁷ *Ibid*, lxxi.

⁸⁸ See, of course, Edward Said, *Orientalism* (New York: Vintage, 1978).

⁸⁹ See Fink, *Wanderung*, 12.

⁹⁰ Kieseewetter, *Musik*, 35.

⁹¹ August Wilhelm Ambros, *Geschichte der Musik* (Leipzig: Breitkopf und Härtel, 1859), i:157.

⁹² Kieseewetter, *Musik*, 46.

⁹³ Ambros, *Geschichte*, i:143.

⁹⁴ Lise Manniche, *Music and Musicians in Ancient Egypt* (London: British Museum Press, 1991).

⁹⁵ Hans Hickmann, *Musicologie pharaonique* (Kehl: Librairie Heitz, 1958).

⁹⁶ Kieseewetter, *Musik*, 41.

⁹⁷ Ambros, *Geschichte*, i:157.

⁹⁸ Hans-Jörg Rheinberger, *Toward a History of Epistemic Things: Synthesizing Proteins in the Test Tube* (Stanford: Stanford University Press, 1997).