

ENDNOTES

INTRODUCTION (p. 12)

- ¹ Paul Bahn, *Archaeology: A Very Short Introduction*, (Oxford: Oxford University Press, 2012), 26; Richard Leakey and Roger Lewin, *Origins Reconsidered: In Search of What Makes us Human*, (New York: Doubleday, 1992), 328; Curt Sachs, *The History of Musical Instruments*, (Mineola, New York: Dover Publications, Inc., 2006), 42; David Lewis-Williams, *The Mind in the Cave*, (London: Thames & Hudson, 2002), 224-225, 266.
- ² Jackson J. Spielvogel, *Western Civilization*, Eighth Edition (Boston: Wadsworth, 2012), 3-4; Ann Gibbons, *The First Human: The Race to Discover our Earliest Ancestors* (New York: Anchor Books, 2006); Philip Lee Ralph et al., *World Civilizations: Their History and Their Culture*, Volume I/Ninth Edition (New York and London: W.W. Norton & Company, 1997), 3-11.
- ³ Spielvogel, 3; Ralph et al., 8-9.
- ⁴ Ralph et al., 8.
- ⁵ Edward Tarr, *The Trumpet*, Trans. S.E. Plank and Edward Tarr (Portland: Amadeus Press, 1988), 156-175; Curt Sachs, *The History of Musical Instruments*, (Mineola, New York: Dover Publications, Inc., 2006), 426-434; Jeremy Montagu, *Horns and Trumpets of the World: An Illustrated Guide* (New York and Plymouth: Rowman & Littlefield, 2014), 133-149.
- ⁶ Tarr, 53-54; John Wallace and Alexander McGrattan, *The Trumpet*, The Yale Music Instrument Series, (New Haven and London: Yale University Press, 2011), 20-21, 65, 75; Sabine Katharina Klaus, *Trumpets and Other High Brass: A History Inspired By the Joe R. and Joella F. Utley Collection. Volume 1: Instruments of the Single Harmonic Series*, (Vermillion, S.D.: National Music Museum, 2012), 66-72.

UNIT I: THE FIRST TRUMPETER (p. 22)

- ¹ Nils L. Wallin, Bjorn Merker and Steve Brown, Eds. *The Origins of Music*, (Cambridge and London: The MIT Press, 2000); Bo Lawergren, "The Origins of Musical Instruments and Sounds." *Anthropos*, Bd. 83, H. 1./3. (1988), pp.31-45; John Wallace and Alexander McGrattan, *The Trumpet*, The Yale Music Instrument Series, (New Haven and London: Yale University Press, 2011); Curt Sachs, *The History of Musical Instruments*, (Mineola, New York: Dover Publications, Inc., 2006), 45-46; Pedro Espi-Sanchis and Nicholas Bannan, "Found Objects in the Musical Practices of Hunter-Gatherers: Implications for the Evolution of Instrumental Music" in Nicholas Bannan, Ed., *Music, Language and Human Evolution*, (Oxford: Oxford University Press, 2012), 180.
- ² Wallace and McGrattan, 32; Sachs, 47-52; Peter Holmes, *Horns and Trumpets of the European Iron Age*, Book I (London: ABCo Design Ltd, 2022), 25-29.
- ³ Bruno Nettl, "Response to Victor Grauer: On the Concept of Evolution in the History of Ethnomusicology," *The World of Music*, Vol. 48, No. 2, Echoes of Our Forgotten Ancestors (2006) pp. 59-72; Peter Cooke, "Response to "Echoes of Our Forgotten Ancestors"" *The World of Music* 48, No. 2, (2006): 93-100; Ian Cross, "Four Issues in the Study of Music in Evolution," *The World of Music* 48, No. 3 (2006): 55-63; Wallace and McGrattan, 33-34.
- ⁴ For a good summary of the arguments see Bannan, Ed. *Music, Language and Human Evolution*, 3-27; Wallin et al, Eds. *The Origins of Music*; Lawergren, "The Origins of Musical Instruments and Sounds," 31-45.

CHAPTER 1: HOW TO PLAY A BISON HORN (p. 26)

- ¹ Bone trumpets made of small animal bones typically only play one note due to their length. However, bone trumpets made of a human femur (thighbone) known as *rkang-gling* may play up to four notes. Sabine Katharina Klaus, *Trumpets and Other High Brass: A History Inspired By the Joe R. and Joella F. Utley Collection. Volume 1: Instruments of the Single Harmonic Series*, (Vermillion, S.D.: National Music Museum, 2012), 9-10; Jeremy Montagu, *Horns and Trumpets of the World: An Illustrated Guide* (New York and Plymouth: Rowman & Littlefield, 2014), 56-57; Anthony Baines, *Brass Instruments: Their History and Development* (New York: Charles Scribner's Sons, 1976), 48; A. R. Wright, "Tibetan Drum and Trumpet," *Folklore*, Vol. 15, No 3 (Sept. 29, 1904), 333-334.
- ² Baines, 44-48; 25-29; Klaus, Volume 1, 7-9; Montagu, *Horns and Trumpets of the World*, 62-65.

CHAPTER 2: PRACTICE, PRACTICE, PRACTICE! (p. 30)

- ¹ Richard Leakey and Roger Lewin, *Origins Reconsidered: In Search of What Makes us Human*, (New York: Doubleday, 1992), 328; Bruno Fazenda, "Cave Acoustics in prehistory: Exploring the association of Palaeolithic visual motifs and acoustic response," *The Journal of the Acoustical Society of America*, Vol. 142 (Sept. 2017), 1332-1349. Curt Sachs, *The History of Musical Instruments*, (Mineola, New York: Dover Publications, Inc., 2006), 42; David Lewis-Williams, *The Mind in the Cave*, (London: Thames & Hudson, 2002), 224-225, 266; Pedro Espi-Sanchis and Nicholas Bannan, "Found Objects in the Musical Practices of Hunter-Gatherers: Implications for the Evolution of Instrumental Music" in Nicholas Bannan, Ed., *Music, Language and Human Evolution*, (Oxford: Oxford University Press, 2012), 180; Jeremy Montagu, "How Old is Music?" *The Galpin Society Journal*, Vol. 57 (May, 2004). pp. 171-182, 174; Lois Wingerson and LW, "Rock Music," *Archaeology*, Vol. 61, No. 5 (September/October 2008), pp. 46-50.
- ² Montagu, "How Old is Music?," 174.

- ³ John Wallace and Alexander McGrattan, *The Trumpet*, The Yale Music Instrument Series, (New Haven and London: Yale University Press, 2011); Bo Lawergren, "The Origins of Musical Instruments and Sounds." *Anthropos*, Bd. 83, H. 1./3. (1988), pp.31-45; Nicole Boivin, Adam Brumm, Helen Lewis, Dave Robinson and Ravi Korisettar, "Sensual, Material, and Technological Understanding: Exploring Prehistoric Soundscapes in South India." *The Journal of the Royal Anthropological Institute*, Vol. 13, No. 2 (Jun., 2007), pp. 267-294.
- ⁴ Edwin E. Gordon, *Space Audiation* (GIA Music: Chicago, IL, 2015).

CHAPTER 3: STUMBLING ON H2 (p. 35)

- ¹ Nicole Boivin, Adam Brumm, Helen Lewis, Dave Robinson and Ravi Korisettar, "Sensual, Material, and Technological Understanding: Exploring Prehistoric Soundscapes in South India." *The Journal of the Royal Anthropological Institute*, Vol. 13, No. 2 (Jun., 2007), pp. 267-294; Maria Ujhelyi, "Social Organization as a Factor in the Origins of Language and Music," in Nils L. Wallin, Bjorn Merker, and Steve Brown, Eds., *The Origins of Music* (Cambridge and London: The MIT Press, 2000), 125-134; Bo Lawergren. "The Origins of Musical Instruments and Sounds." *Anthropos*, Bd. 83, H. 1./3. (1988), pp.31-45; Jeremy Montagu, "How Old is Music?" *The Galpin Society Journal*, Vol.57 (May, 2004), pp. 171-182.

UNIT II: A BLAST FROM THE ANCIENT PAST (p. 42)

- ¹ Joshua 5:13 - 6:27; Michael David Coogan, Marc Zvi Brettler, Carol A. (Carol Ann) Newsom, and Pheme Perkins, *The New Oxford Annotated Bible: With the Apocrypha*. Fully rev. 4. ed. (New York: Oxford University Press, 2010), HB 315, 323-324.
- ² "These Vintage Threads Are 30,000 Years Old." Heard on *All Things Considered*, National Public Radio, September 10, 2009. <https://www.npr.org/templates/transcript/transcript.php?storyId=112726804>
- ³ Jackson J. Spielvogel, *Western Civilization*, Eighth Edition, (Boston: Wadsworth, 2012), 4-6.
- ⁴ Jeremy Montagu, *The Shofar: Its History and Use*, (Lanham: Rowman & Littlefield, 2015), 49-59. Sol Finesinger nicely summarizes the sound of the *shofar* by observing that, "like any other sound [it] is produced primarily for its effect upon its hearers. It may be either to attract them to those producing it, or it may frighten and repel them." Sol. B. Finesinger, "The Shofar," *Hebrew Union College Annual*, Vol. 8/9 (1931-32), pp. 193-228, 193. See also Frederick Martens, "The Influence of Music in World History," *The Music Quarterly*, Vol. 11, No.2 (Apr., 1925), pp. 196-218, 203; J. Alberto Soggin, "The Conquest of Jericho Through Battle: Note on a Lost Biblical Tradition," *Eretz-Israel: Archaeological, Historical and Geographical Studies*, Harry M Orlinsky Volume, 1982, pp. 215-217; William R. Trotter, "The Music of War," *Military History* Vol. 22.3 (June 2005) pp. 58-64. Finally, it is worth noting (as students may ask) that some scientists have claimed that huge sound waves are strong enough to move walls. "Biblical Story Rerun in a Laboratory," *Current Events*, Vol. 84, 10, (Jan 22, 1999), pp. 12-13.
- ⁵ Montagu, *The Shofar*; Finesinger, "The Shofar"; David Wulstan, "The Sounding of the Shofar," *The Galpin Society Journal*, Vol. 26 (May, 1973), pp. 29-46 ; John Wallace and Alexander McGrattan, *The Trumpet*, The Yale Music Instrument Series, (New Haven and London: Yale University Press, 2011), 7.
- ⁶ Numbers 10:1-10; Coogan et al., *The New Oxford Annotated Bible*, HB 200-201. There is sometimes confusion about references in the Old Testament to horns since it is unclear whether it is referring to the *shofar* or *hassrah*. However, scholars have argued that the *hassrah* was first used primarily in rituals and peaceful marshalling, and the *shofar* used for military purposes. Later on (in the last century or so BCE) the roles were reversed, and the *shofar* became used for ceremonial purposes. See Finesinger, 212; Wulstan, "The Sounding of the Shofar," 31; Wallace and McGrattan, 7; Montagu, *The Shofar*, 53.
- ⁷ Spielvogel, 4-32.
- ⁸ *The Epic of Gilgamesh* was written in cuneiform c. 2,000 BCE. See Andrew George, Trans. *The Epic of Gilgamesh: the Babylonian Epic Poem and Other Texts in Akkadian and Sumerian*, (London: Penguin Books, 1999).
- ⁹ The Old Testament is the Hebrew Bible, written and compiled between c. 1400-450 BCE. See Michael David Coogan, *The Old Testament: A Very Short Introduction*, (Oxford; New York: Oxford University Press, 2008); John Kenneth Riches, *The Bible: A Very Short Introduction*, (Oxford; New York: Oxford University Press, 2000); Coogan et al., *The New Oxford Annotated Bible*, HB 1-1373.
- ¹⁰ The *Rig Veda* is a collection of sacred Hindu hymns, written c. 1900 BCE. See Wendy Doniger O'Flaherty, ed., *The Rig Veda: An Anthology*, Penguin Classics, (Harmondsworth: Penguin, 1981); Kim Knott, *Hinduism: A Very Short Introduction*, (Oxford: New York: Oxford University Press, 2000).
- ¹¹ Wallace and McGrattan, 5-35.
- ¹² Sabine Katharina Klaus, Mark Olencki, Barry Bauguess, and National Music Museum (U.S.). *Trumpets and Other High Brass: A History Inspired By the Joe R. and Joella F. Utley Collection*, Vol. I, (Vermillion, S.D.: National Music Museum, 2012); Jeremy Montagu, *Horns and Trumpets of the World: An Illustrated Guide*. (New York and Plymouth: Rowman & Littlefield, 2014).

CHAPTER 4: THE SHOFAR CALL (p. 46)

- ¹ Jeremy Montagu, *The Shofar: Its History and Use*, (Lanham: Rowman & Littlefield, 2015), 20-26.
- ² John Wallace and Alexander McGrattan, *The Trumpet*, The Yale Music Instrument Series, (New Haven and London: Yale University Press, 2011), 6-7.
- ³ Exodus 1- 40; Michael David Coogan, Marc Zvi Brettler, Carol A. (Carol Ann) Newsom, and Pheme Perkins, *The New Oxford Annotated Bible*:

With the Apocrypha. Fully rev. 4. ed. (New York: Oxford University Press, 2010), HB 82-141.

⁴ Montagu, *The Shofar*, 12-13, 16.

⁵ David Wulstan, "The Sounding of the Shofar," *The Galpin Society Journal*, Vol. 26 (May, 1973), pp. 29-46, 38.

⁶ Jackson J. Spielvogel, *Western Civilization*, Eighth Edition, (Boston: Wadsworth, 2012), 33-54.

⁷ Psalms 98:6; Coogan et al., *The New Oxford Annotated Bible*, HB 861. Amos 3:6; Coogan et al., *The New Oxford Annotated Bible*, HB 1307. For the most comprehensive list of Biblical, Talmudic and Post-Talmudic sources see Montagu, *The Shofar*, 121-153.

⁸ Montagu, *The Shofar*, xvii, 4.

⁹ Exodus 32; Coogan et al. *The New Oxford Annotated Bible*, HB 128-130.

CHAPTER 5: THE PHARAOH'S TRUMPETERS (p. 51)

¹ John Wallace and Alexander McGrattan, *The Trumpet*, The Yale Music Instrument Series, (New Haven and London: Yale University Press, 2011), 9-10.

² Plutarch, *Moralia, Volume II: The Dinner of the Seven Wise Men*, Translated by Frank Cole Babbitt, Loeb Classical Library 222 (Cambridge, MA: Harvard University Press, 1928), 373.

³ Hans Hickman, *La Trompette dans L'Égypte Ancienne*, 1946; facsimile reprint (Nashville, Tenn.: The Brass Press, 1976), 30-31; Percival R. Kirby, "The Trumpets of Tut-Ankh-Amen and their Successors," *The Journal of the Anthropological Institute of Great Britain and Ireland*, Vol. 77, No. 1 (1947), 35; Jeremy Montagu, *Horns and Trumpets of the World: An Illustrated Guide* (New York and Plymouth: Rowman & Littlefield, 2014), 71-4.

⁴ The original BBC Broadcast can be heard on YouTube.

⁵ Lisa Manniche, *Musical Instruments from the Tomb of Tut'unckhamên* (Oxford: Griffith Institute, 1976), 7-9.

⁶ Peter Holmes, "An Iron-age Band or a Roman Folly?" *Liranimus I*, Proceedings of the Portuguese National Association for Musical Instruments, Conference 2012, Vol. 1, 67-109.

⁷ Altenberg acknowledged that the invention of the trumpet has also been attributed to others, including the Etruscans and the goddess Minerva. Johann Ernst Altenberg, *Essay on an Introduction to the Heroic and Musical Trumpeters' and Kettledrummers' Art: For the Sake of a Wider Acceptance on the Same, Described Historically, Theoretically, and Practically and Illustrated with Examples*, 1795, Reprint, Translated by Edward H. Tarr (Nashville: Brass Press, 1974), 3.

⁸ Lisa Manniche, *Music and Musicians in Ancient Egypt*, (London: British Museum Press, 1991), 57-58.

⁹ Curt Sachs, *The History of Musical Instruments* (New York: Dover Publications, 2006), 100. Sachs was later cited by Wallace and McGrattan (2011). Sachs did not provide the original citation from Eustathius, other than to say that it was in Eustathius's translation of *The Iliad*.

¹⁰ Gwyn Griffiths, "Osiris," in Donald B. Redford ed., *The Oxford Encyclopedia of Ancient Egypt*, 3 vols (Oxford: Oxford University Press, 2001), vol. 2, 617-19.

SPECIAL FEATURE: THE FIRST WRITTEN MUSIC (p. 57)

¹ Sam Mirelman, "New Developments in the Social History of Music and Musicians in Ancient Iraq, Syria and Turkey," *Yearbook for Traditional Music*, Vol. 41 (2009), 12-22; Marcelle Duchesne-Guillemin, "Music in Ancient Mesopotamia and Egypt," *World Archaeology* 12, no. 3 (1981): 287-97. For an opposing analysis see Richard Dumbrill, *The Truth About Babylonian Music*, (archaeomusicology@iconea.org, 2017).

² The Schøyen Collection, MS 2340, "Earliest Known Music & Instruments Record," c. 2600 BCE. <https://www.schoyencollection.com/music-notation/sumerian-music/earliest-music-record-ms-2340>. See also Miguel Civil, "The Lexical Texts in the Schøyen Collection," Cornell University Studies in Assyriology and Sumerology, vol. 12, *Manuscripts in the Schøyen Collection*, Cuneiform texts V (CDL Press, Bethesda, MD, 2010), text 6.3.1, 203-214.; The Schøyen Collection, MS 5105, "Oldest Known Music Notation," c. 2000 -1700 BCE. <https://www.schoyencollection.com/music-notation/old-babylonia-cuneiform-notation/oldest-known-music-notation-ms-5105>

³ David Wulstan, "The Earliest Music Notation," *Music & Letters*, Vol. 52, No.4 (Oct., 1971), 365-382. See also M.L. West, "The Babylonian Music Notation and the Hurrian Melodic Texts," *Music & Letters*, Vol. 75, No.2 (May, 1994), 161-179. See also Dumbrill.

⁴ The Schøyen Collection, MS 2951, "About Music Lesson Arrangements," c. 1900-1700 BCE. <https://www.schoyencollection.com/music-notation/sumerian-music/music-lesson-arrangements-ms-2951>

CHAPTER 6: RAGNAR'S TRUMPET TREASURE HUNT (p. 58)

¹ The name "Silk Road" was coined by German traveller and geographer Ferdinand Freiherr von Richthofen in 1877. James A. Millward, *The Silk Road: A Very Short Introduction* (Oxford: Oxford University Press, 2013), 4.

² For example, archaeological and historical remains found in Asia include European genetic markers, and vice versa. Similarly, plants and animals native to certain regions have been found hundreds of miles away. Luce Boulnois, *Silk Road: Monks, Warriors and Merchants* (Odyssey: Geneva, 2012), 115, 207; Mayne Wagner et al, "The ornamental trousers from Sampula (Xinjiang, China): their origins and biography," *Antiquity*, Dec. 2009, Vol. 83, 322, pp. 1065-1075; Sumita Chakravorty, *Instruments in Hindustani Classical Music: Role and Performance* (Kanisha Publishers: New Delhi, 2012), 11; Alan R. Thrasher, *Chinese Musical Instruments, Images of Asia* (Oxford: Oxford University Press, 2000), 38-39.

- ³ The decorated pair of trousers were excavated from a well-preserved tomb in the Tarim Basin in China. According to Wagner, the trousers started life in the third/second century BCE as an ornamental wall hanging in a palace in Bactria. The palace was raided by nomads, one of whom worked a piece of the tapestry into a pair of trousers. Most significantly, the tapestry showed a centaur blowing a Greek trumpet, the salpinx, and a nearly life-size warrior of the steppe region of Asia with his spear. Mayne Wagner et al, "The ornamental trousers from Sampula (Xinjiang, China): their origins and biography" *Antiquity*, Dec. 2009, Vol. 83, 322, pp. 1065-1075.
- ⁴ John Wallace and Alexander McGrattan, *The Trumpet*. The Yale Music Instrument Series. (New Haven and London: Yale University Press, 2011), 33-34.
- ⁵ Marcelle Duchesne-Guillemin, "Music in Ancient Mesopotamia and Egypt," *World Archaeology*, Vol. 12, No.3, Archaeology and Musical Instruments (Feb., 1981), pp. 287, 291; Perry Stuart and Peache Handcock, *Mesopotamian Archaeology: An Introduction to the Archaeology of Babylonia and Assyria*, (New York: G.P. Putnam's Sons, 1912), 222.
- ⁶ Cajsja Lund, "The Bronze Lurs. Magnificent Craftsmanship, Enigmatic Sound Instruments," *Music and Sounds in Ancient Europe*, (European Music Archeology Project, 2018), 64-65.
- ⁷ Bo Lawergren, "The Acoustic Context of Oxus Trumpets," *Proceedings of the International Symposium on Musical Acoustics*, March 31st to April 3rd 2004 (ISMA 2004), Nara, Japan, 124.
- ⁸ Marina Micozzi, "Introducing the Authority. Cornua and litui in Etruria," *Music and Sounds in Ancient Europe*, (European Music Archeology Project, 2018), 68-69.
- ⁹ Peter Holmes, "Lituus," in *The Cambridge Encyclopedia of Brass Instruments*, edited by Trevor Herbert, Arnold Myers, and John Wallace (Cambridge: Cambridge University Press, 2019), 246-247, hereafter known as *CEBI*; Wallace and McGrattan, 17.
- ¹⁰ Raquel Jiménez Pasalodos, "Carnyx Meets Clay. Pottery Trumpets of the Iberian Peninsula," *Music and Sounds in Ancient Europe*, (European Music Archeology Project, 2018), 82.
- ¹¹ Ibid.
- ¹² Peter Downey, "Lip-Blown Instruments of Ireland Before the Norman Invasion," *Historic Brass Society Journal*, vol.5 (1993), 90.
- ¹³ Wallace and McGrattan, 25; Don L. Smithers, "A New Look at the Historical, Linguistic and Taxonomic Bases for the Evolution of Lip-blown Instruments from Classical Antiquity until the end of the Middle Ages," *Historic Brass Society Journal* 1, 31-32, 1989; Jeremy Montagu, "Side-Blown Horns," from a paper given at an ANIMUSIC Conference in Evora in 2013 and subsequently published with illustrations in *Liranimus*, 3.
- ¹⁴ Peter Holmes, "Irish horn," in *CEBI*, 223-224.
- ¹⁵ A late nineteenth century study of the instruments describes them as Irish war trumpets, suggesting that spikes found on many of the horns could have rendered them effective as both a trumpet and a war club. Peter Holmes points to the fact that the horns were often discovered in pairs, one end blown and the other side blown, possibly representing male and female, and that they could have been played together for fertility rites. Robert Day, "Irish Bronze War Trumpets," *The Journal of the Royal Historical and Archeological Association of Ireland*, Vol. 3, No. 22 (Apr., 1875), 429-430; Peter Holmes, "Irish horn," in *CEBI*, 223-224.
- ¹⁶ Cajsja Lund, "The Bronze Lurs. Magnificent Craftsmanship, Enigmatic Sound Instruments," *Music and Sounds in Ancient Europe*, (European Music Archeology Project, 2018), 64.
- ¹⁷ They were produced in several sections, and due to the conicity of the tube, had to be made with a high level of precision to fit together properly. Peter Holmes, "Lur (bronze)," in *CEBI*, 248-249.
- ¹⁸ Cajsja Lund, "The Archaeomusicology of Scandinavia," *World Archaeology*, Vol. 12, No. 3, Archaeology and Musical Instruments (Feb., 1981), 260-261.
- ¹⁹ The mouthpiece, which was not removable, developed over time into something with characteristics of a modern trombone mouthpiece. Jeremy Montagu, *Horns and Trumpets of the World: An Illustrated Guide* (New York and Plymouth: Rowman & Littlefield, 2014), 74-76; Cajsja Lund, "The Bronze Lurs. Magnificent Craftsmanship, Enigmatic Sound Instruments," *Music and Sounds in Ancient Europe*, (European Music Archeology Project, 2018), 65.
- ²⁰ Jeremy Montagu, *Horns and Trumpets of the World*, 74-76; Peter Holmes, "Lur (bronze)," in *CEBI*, 248-249.
- ²¹ The major archeological sites of the Oxus civilizations are located at the Margiana and Bactria oases along the Amu Darya (Oxus river), referred to as the Bactria-Margiana Archaeological Complex (BMAC). Bo Lawergren, "Oxus trumpets, ca. 2200-1800 BCE; material overview, usage, societal role, and catalog," *Iranica Antiqua*, 38 (2003), 41-118.
- ²² One was carved out of alabaster- a translucent form of gypsum. Ibid.
- ²³ The mouthpiece appears to be made to sit inside the lips rather than on the outer surface of the embouchure, and the resulting sound is very high-pitched (around 1 khz / C above the staff) and relatively soft. Bo Lawergren, "The Acoustic Context of Oxus Trumpets," *Proceedings of the International Symposium on Musical Acoustics*, March 31 - April 3 2004, 124.
- ²⁴ The large number of instruments discovered show a high degree of consistency in production, and the length of the instrument and shape of the mouthpiece cooperate well to create a high pitch vibration, very similar to that of a fallow deer, which could be used to attract male deer. As deer are prevalent in that region, the elite who controlled the land could have used these trumpets to hunt deer and/or other animals. Ibid.
- ²⁵ Bo Lawergren, "Oxus trumpets, ca. 2200-1800 BCE; material overview, usage, societal role, and catalog," *Iranica Antiqua*, 38 (2003), pp. 41-118; Bo Lawergren, "The Acoustic Context of Oxus Trumpets," *Proceedings of the International Symposium on Musical Acoustics*, March 31 - April 3 2004, 124; Wallace, and McGrattan, 10-12.

- ²⁶ According to Stein, archaeological evidence suggests that humans have inhabited the Indian subcontinent for 500,000 years. Burton Stein, *A History of India*, (Oxford: Blackwell Publishing, 1998), 45.
- ²⁷ This took place around 1500-600 BCE. The River Indus flows through modern-day Pakistan, though the so-called Indus Valley Civilization spread over into north-west India. Scholars diverge on whether the roots of Hinduism came from migrants to this area (so-called Aryans) or whether it developed among the indigenous peoples living in the two biggest cities, Harappa and Mohenjo-daro. Kim Knott, *Hinduism: A Very Short Introduction*, Indian Edition (New Delhi, Oxford, and New York: Oxford University Press, 1998), 5-7; Stein, 45-46; Ainslie T. Embree, ed., *Sources of Indian Tradition: Volume One, From the Beginning to 1800*, Second Edition (New York: Columbia University Press, 1988), 3-5.
- ²⁸ Swamini Vimalananda Radhika Krishnakumar, "Why do we blow the conch?" 19 Sept. 2006; Accessed 27 July 2020. <https://www.nhsf.org.uk/2006/09/why-do-we-blow-the-conch/>;
- ²⁹ Alan R. Thrasher, "Niujiiao hao." *Grove Music Online*. 28 May 2015; Accessed 1 Aug. 2020. <https://www-oxfordmusiconline-com.turing.library.northwestern.edu/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-4002281572>; Alan R. Thrasher, "Changhao." *Grove Music Online*. 28 May 2015; Accessed 1 Aug. 2020. <https://www-oxfordmusiconline-com.turing.library.northwestern.edu/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-4002280974>.
- ³⁰ A. R. (Alan Robert) Thrasher, *Chinese Musical Instruments* (Oxford: Oxford University Press, 2000), 41-42; Wallace and McGrattan, 28.
- ³¹ The first travels along the trade routes -later known as the Silk Road- took place in 138 BCE during the Han dynasty. Zhang Qian was sent on a mission by Han Emperor Wu to make contact with tribes to the west. Christopher I Beckwith, *Empires of the Silk Road: A History of Central Eurasia from the Bronze Age to the Present*, (Princeton; Oxford: Princeton University Press, 2009), 78-92; S.A. M. Adshead, "Dragon and Eagle: A Comparison of the Roman and Chinese Empires." *Journal of Southeast Asian History* 2, no. 3 (1961): 11-22.
- ³² Alice M. Moyle, "The Australian Didjeridu: A Late Musical Intrusion," *World Archaeology*, Vol. 12, No.3, *Archaeology and Musical Instruments* (Feb., 1981), pp. 321-331; Wallace and McGrattan, 33-35.
- ³³ John W. Rick, "The Nature of Ritual Space at Chavín de Huántar," *Rituals of the Past: Prehispanic and Colonial Case Studies in Andean Archeology*. University Press of Colorado (2017), 41-42.
- ³⁴ Ibid. 34; Miriam A. Kolar, "Acoustics, Architecture, and Instruments in Ancient Chavín de Huántar, Perú: An Integrative, Anthropological Approach to Archaeoacoustics and Music Archaeology," *Music & Ritual: Bridging Material and Living Cultures*. Publications of the ICTM Study Group on Music Archaeology, Vol. 1, 153-155.
- ³⁵ Additionally, people who have played the *pututus* inside Chavín's passageways and galleries "have reported an experience of having their instruments' tones "guided" or "pulled" into tune with the dominant spatial resonances of particular locations. In an ancient ritual context, the recognition and understanding of such a sensory component would relate to a particular worldview beyond the reach of present-day investigators." Kolar, 148-158.
- ³⁶ Ritual material such as bone and fragments of pottery have been discovered at small internal access points to the canals. Additionally, the positioning of the ducts in some cases would have made high velocity/pressure possible, creating fountain-like drops or even springs. Rick suggests that the temple complex could have been designed around the need for water-related ritualism since water was central to Chavín's agrarian society. Rick, 40-45.
- ³⁷ Michael Brooks, "An Almighty Racket.," *New Scientist* Vol. 199, 2672 (Sep. 6 - Sep. 12, 2008), 37-39.

UNIT II WRAP UP: STORMY WEATHER (p. 68)

¹ Jeremy Montagu, *The Shofar: Its History and Use*, (Lanham: Rowman & Littlefield, 2015), 20-26.

UNIT III: "GREEKS! ROMANS! BARBARIANS! LEND ME YOUR TRUMPETS!" (p. 70)

- ¹ "Friends" speech by Mark Antony is Act 3, Scene 2 of *Julius Caesar* by William Shakespeare (c. 1599). David Bevington, *The Necessary Shakespeare*, Second Edition, (New York and London: Pearson Longman, 2005), 510-545;
- ² "Mediterranean" comes from Latin "medius" (middle) "terra" (land), meaning "middle of the earth." For peoples of the ancient world, this meant "in the middle of the known world."
- ³ Jackson J. Spielvogel, *Western Civilization, Eighth Edition*, (Boston: Wadsworth, 2012), 82; Anne Pearson, *Eyewitness Ancient Greece*, (London and New York: Dorling Kindersley, 2014), 54-55; Paul Cartledge, *Ancient Greece: A Very Short Introduction*, (Oxford: Oxford University Press, 2011), 71;
- ⁴ Nikos, Xanthoulis, "The Salpinx in Greek Antiquity," *International Trumpet Guild [ITG] Journal* (Oct. 2006), p..
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- ¹² Anne Pearson, *Eyewitness Ancient Greece*, (London and New York: Dorling Kindersley, 2014), 20-27; Paul Veyne, *Did the Greeks Believe in their Myths?*, Trans. Paula Wissing, (Chicago and London: University of Chicago Press, 1988).

¹³ For Special project #3

CHAPTER 7: SALPINX SCHOOL (p. 74)

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CHAPTER 8: TRUMPET OLYMPICS (p. 80)

- ¹ Jackson J. Spielvogel, *Western Civilization, Eighth Edition*, (Boston: Wadsworth, 2012), 82; Paul Cartledge, *Ancient Greece: A Very Short Introduction*, (Oxford: Oxford University Press, 2011), 28.
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- ⁴ *Ibid.*, 247.
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- ⁶ Nikos Xanthoulis, "The Salpinx in Greek Antiquity," *International Trumpet Guild [ITG] Journal* (Oct. 2006), 40; <http://musicgames.wikidot.com/source:elson-curiosities-of-music/noredirect/true/>
- ⁷ John R. Hale, "Salpinx and salpinktes: trumpet and trumpeter in Ancient Greece," in *Literature, Art, History: Studies on Classical Antiquity and Tradition in Honour of W. J. Henderson*, ed. A. F. Basson and W. J. Dominik (Frankfurt and New York: Peter Lang, 2003), 272.
- ⁸ Bowyer, 197, 198.
- ⁹ Holmes, Peter, *Salpinx and Tuba: Sounds of the Ancient Olympics*. (London: ABCo Design Ltd 2024), 6.
- ¹⁰ Bowyer, 191-194.
- ¹¹ *Ibid.*, 189.

CHAPTER 9: WHEN IN ROME... (p. 87)

- ¹ An excellent primary source on the establishment of Christianity is Bede's *The Ecclesiastical History of the English People*, written in CE 731 (Oxford: Oxford University Press, 2008). See also Jackson J. Spielvogel, *Western Civilization, Eighth Edition*, (Boston: Wadsworth, 2012), 170-201; Linda Woodhead, *Christianity: A Very Short Introduction* (Oxford: Oxford University Press, 2004), 48-58.

- ² Simon James, *Eyewitness Ancient Rome*, DK in Association with the British Museum, (New York and London: Penguin Random House, 2015).
- ³ James, 28-29;
- ⁴ John Wallace and Alexander McGrattan, *The Trumpet*, The Yale Music Instrument Series, (New Haven and London: Yale University Press, 2011), 20.
- ⁵ Peter Holmes, Salpinx and Tuba: Sounds of the Ancient Olympics. (London: ABCo Design Ltd 2024), 185-202; Sabine Katharina Klaus, Mark Olencki, Barry Bauguess, and National Music Museum (U.S.). *Trumpets and Other High Brass: A History Inspired By the Joe R. and Joella F. Utley Collection*. Vol. I of Instruments of the Single Harmonic Series. (Vermillion, S.D.: National Music Museum, 2012), 41-42.
- ⁶ Ibid. 42.
- ⁷ Murray Campbell, Joël Gilbert, and Arnold Myers. *The Science of Brass Instruments: Modern Acoustics and Signal Processing*. (Switzerland: Springer Nature Switzerland, 2021), 147-150, 392.
- ⁸ Klaus, 40.
- ⁹ Cristina-Georgeta Alexandrescu, "The Iconography of Wind Instruments in Ancient Rome: Cornu, Bucina, Tuba, and Lituus." *Music in Art*, Spring—Fall 2007, Vol. 32, No. 1/2, *Music in Art: Iconography as Source for Music History Volume III* (Spring—Fall 2007), 33-46; Peter Holmes, *Horns and Trumpets of the European Iron Age, Book 1: The Horns and Trumpets of the European Iron Age*, (London ABSO Design Ltd, 2022), 79, 80, 86, 87.
- ¹⁰ John Ziolkowski, "The Roman bucina: a distinct musical instrument?," *Historic Brass Society Journal*, Vol. 14 (2002), 51-52; Wallace, 20.
- ¹¹ Wallace, 20-21; Alexandrescu, 37, 39.
- ¹² Additionally, sound waves travel more than four times faster in water than in air. Baleen whales, such as the Blue Whale, create the lowest bass notes (as low as 14 Hz) in the animal kingdom, which in water can travel over 10,000 miles. <https://www.bbcearth.com/news/the-loudest-voice-in-the-animal-kingdom>

CHAPTER 10: AT THE EDGE OF EMPIRE (p. 95)

- ¹ See also Key Point No. 7, TE p. 92
- ² Two Roman trumpet mouthpieces have been found along Hadrian's Wall. One is housed at the Vindolanda Museum in northern England, and the other at the British Museum in London. One discovered at the Antonine Wall, along with fragments of a Roman tuba, appear to have been lost.
- ³ Jackson J. Spielvogel, *Western Civilization*, Eighth Edition, (Boston: Wadsworth, 2012), 183.
- ⁴ Paul Wagner, *Pictish Warrior: AD 297-841*, Illust. Wayne Reynolds, (Oxford: Osprey Publishing, 2002), 31.
- ⁵ Simon James, *Exploring the World of The Celts* (London: Thames & Hudson, 2005).
- ⁶ Many Roman depictions of carnyces on stone carvings and coins show scenes of Roman military triumphs (Tropeia), revealing collections of items acquired in battle. The fact that carnyces appear regularly in these scenes points to their prevalence in the military context. The cauldron referred to here, the Gundestrup Cauldron, was discovered in a peat bog in Denmark. It exhibits many fascinating images that may shed light on the beliefs and rituals of Celtic peoples, as well as the ceremonial use of the carnyc. Peter Holmes, *Horns and Trumpets of the European Iron Age, Book 1: The Horns and Trumpets of the European Iron Age*, (London ABSO Design Ltd, 2022), 130-133.
- ⁷ Ibid., 94-96
- ⁸ Zoomorphic refers to something that has the shape, form, or characteristics of an animal.
- ⁹ Holmes, p. 100, 101
- ¹⁰ Murray Campbell, Michael Newton, John Kenny, John Chick, Amaya Lopez-Carronero, Joel Gilbert. "The Tintignac Carnyx: an acoustical study of an early brasswind instrument." *Acoustical Society of America*, 170th Meeting (2015), slides 17-18.
- ¹¹ James, 74-83.
- ¹² Polybius, *The Rise of the Roman Empire*, cited in Wallace and McGrattan, 15.
- ¹³ Spielvogel, 183-186.

UNIT III WRAP UP: IT'S A LONG WAY HOME (p. 100)

- ¹ Bruno David, *Cave Art* (London: Thames & Hudson Ltd., 2017), 27-32.
- ² Jackson J. Spielvogel, *Western Civilization*, Eighth Edition, (Boston: Wadsworth, 2012), 3-4.