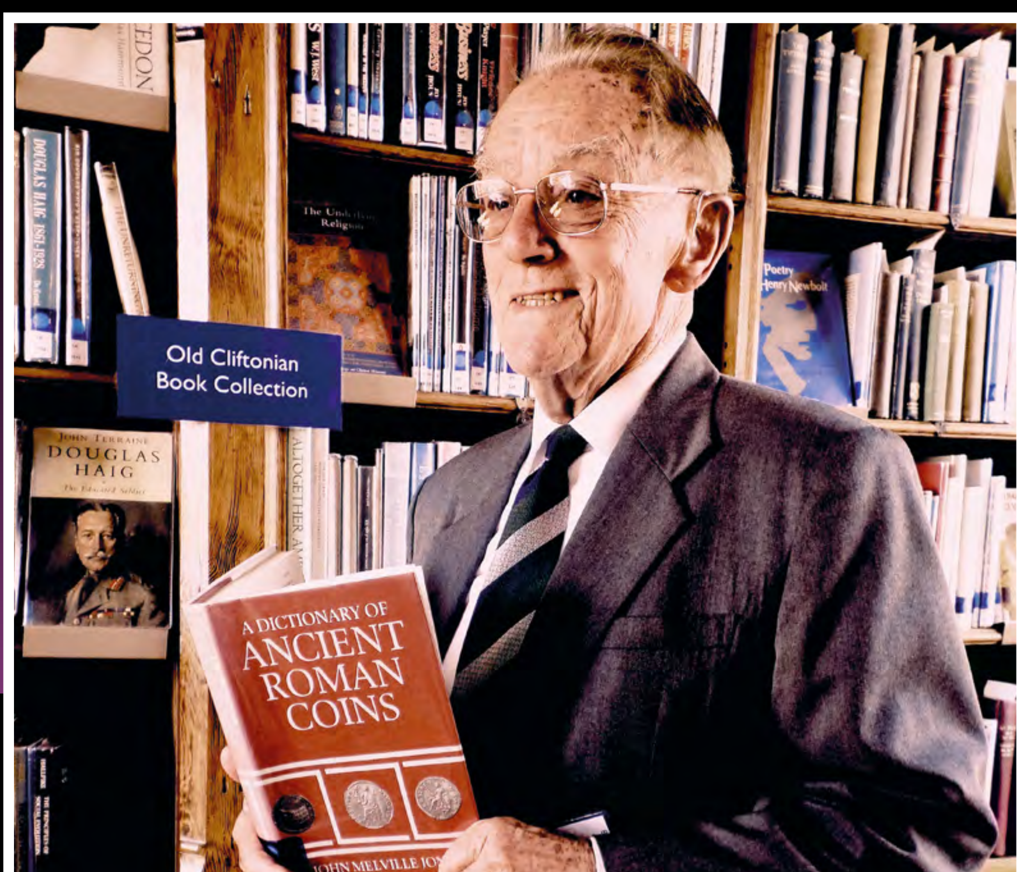
Volume 30

Journal of the Numismatic Association of Australia



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overseas, $A30 p.a. or $A275 for 10 years

ISSN: 0815-998X. The Journal of the Numismatic Association of Australia is a refereed annual publication. Views expressed by the authors in this journal are their own and do not necessarily reflect those of the editors or the NAA.

Digital preparation and layout by Openbook Howden Print & Design, St Marys, South Australia.

Front cover: Photo of Emeritus Professor John Melville-Jones AM

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President's Report

With COVID-19 in its second year, the NAA is looking to rebadge itself to adapt to the rapidly changing environment. Together with this special issue of the Journal we have already embarked on a new approach to increase our online presence; our website is in the process of being revamped and there will be a return to annual publication of the Association's journal (mainly online). We will publish the standard range of articles every even year, and every other year produce a special volume of which this is the first. We will replace the face-to-face biennial conference by online webinars in the first instance (and then progress to more conference-like activities) and hold the Annual General Meeting and Council/Executive meetings online.

I am grateful to Distinguished Professor Lee Brice of Western Illinois University for co-editing with Dr Gil Davis this special volume on numismatics in the education context. It has been a pleasure having Professor Brice working with the NAA to produce a volume of international importance. It goes to the standing of our Association and Australian numismatics that we can attract such high-profile numismatists from around the world to contribute as they have.

Our next volume will be part of the standard cycle for which we take submissions at any time, and already have some under consideration. If you have an interesting piece that you would like to see published, either new material or an original observation on existing work, then please submit your article which will then be placed into the reviewing process.

Following the AGM (held online last October) the centre of gravity of the NAA Executive has moved from Perth to Victoria, with Jonathan Cohen and Lyn Bloom stepping down as Secretary and Treasurer respectively, replaced by Darren Burgess and Philip Richards. I continue as President, Richard O'Hair as Vice President and Gil Davis as Managing Editor.

The Executive are having regular ZOOM meetings to jump-start the NAA's plunge into the new world. As an easy step towards online conferences we are looking to mount webinars mid-year with topics that should have wide appeal, one on the preservation and conservation of coins, a second on grading Australian coins both for the novice and for the more experienced collector looking to submit items to Grading Authorities.

We continue to enjoy sponsorship at a sustainable level, with Noble Numismatics (Gold), Coinworks and Downies (Silver), Drake Sterling, Mowbray Collectables, Sterling & Currency and Vintage Coins & Banknotes (Bronze) all contributing to ensure the Association's continued success. Membership is being maintained, and with the contribution by sponsors and members, the Association is able to function in these difficult times.

I am appreciative of the support of Council and other NAA members, and in particular our Secretary, Darren Burgess, and Treasurer, Philip Richards, who are pivotal in the running of the Association, and our Managing Editor, Gil Davis, for his ongoing work with the journal. On behalf of the NAA I thank both Jonathan Cohen and Lyn Bloom for their excellent contribution to the Association, and our auditor Mona Loo who has worked through the financial statements and associated material in forensic detail.

Professor Walter R. Bloom
President, NAA
www.numismatics.org.au
9th April 2021

About the Numismatic Association of Australia Inc

The Numismatic Association of Australia was founded in the early 1980s and incorporated in Victoria (A0024703Z) in 1992. It is the peak body for numismatics in Australia with seven sponsoring societies around Australia and New Zealand and a direct (individual) membership both national and international. The Association has four main functions:

- Promote the interests of numismatics in Australia. It brings together collectors, hobbyists and academic scholars in a shared love of anything to do with coins, banknotes, medals, tokens and numismatic paraphernalia.
- Biennial conference. This major event rotates through different States. Papers are presented by invited keynote speakers and others with sessions on ancient through to modern numismatics.
- Journal. The annual publication of the Association features a range of articles, approximately half on Australian and New Zealand topics, and the remainder from elsewhere, but especially on the ancient world. The journal has an esteemed editorial board and submissions are double-blind peer reviewed. It is published in hardcopy and online with open access and has a wide international readership. Every second year, it will be publishing a special edition on a specific topic.
- Website – https://numismatics.org.au/. This is the public forum of the Association hosting numismatic news, events, awards, conference details and the journal.

How you can help

- **Become a member**. If you are interested in numismatics in Australia and want to see it survive into the future and prosper, then support your national Association. It cannot function without members and you will be part of a community that shares your passion. The cost is only $25 per year.
- **Be involved**. The Association runs on a voluntary basis. Anything you can do to help would be greatly appreciated and there is a range of roles and tasks.
- **Make a donation**. If you really want to help secure the future of numismatics in Australia, donate to the Association; small or large, every bit helps.
- **Support the advertisers**. The advertisers do their best to help us and, in these precarious times, where would we be without them?

Interested?

Contact Darren Burgess, secretary@numismatics.org.au, for any further information.

Introduction – teaching with numismatics and celebrating one of Australia's leading numismatists, John Melville-Jones AM

Gillan Davis and Lee L. Brice

What is the future of numismatics? Will it be restricted to collecting and die studies by a shrinking number of passionate collectors and specialists, or can it offer something more? As academic historians, we see unlimited potential for coins to 'value-add' in numerous areas of research. The number of ongoing major digitising projects for public and private coin collections demonstrates that numismatists agree. The life work of Emeritus Professor John Melville-Jones AM, the honorand of this volume (Fig. 1), does much to illustrate the point.

This volume is the first in a series to be offered in alternate years covering areas of special interest in a collected set of related articles. It is devoted to the carefully chosen topic of teaching with numismatics. Note it is not teaching about numismatics, treating the coin as an artefact to be studied purely for its own interest. Instead, it reflects the fact that coins and money can be used to inform our understanding of diverse fields of inquiry including ancient history, anthropology, archaeology, architecture, art, art history, economics, material science, metallurgy, military history, museum studies, sociology, and visual culture. In addition to the diversity of topics, because coins and money exist from so many different places and through so many periods, they can also provide a way of studying and teaching about an array of cultures and networks over time.

Coins offer an extraordinary entrée into the past. Physically holding a coin creates a tremendous feeling of connection with history. It is a beautiful experience as a teacher to see the light dawn on students' faces as they realise that the objects in their hands were last used hundreds, maybe thousands of years ago by other real, live people. They cannot help but wonder what those people were like, who they were and where they lived. It all leads to questions of what the coin was worth, how did it fit in the culture, why was it lost, and what happened to it across time. This curiosity and the tactile quality of coins can be pure gold to everyone teaching students at all levels.

Coins are useful teaching tools. Their small size and portability make them easy to take to the classroom. They are examples of material culture, which means they are a primary source for the societies from which they come – unfiltered by later authorities or historical change except for the accidents of survival. As primary sources, they contain evidence about a society in their combination of types, images, attributes, and text. This makes them ideal for discussions about context, meaning, and messaging. Who was the intended audience? To what extent was the coin a vehicle of propaganda? The combinations of metals, weights and denominations carry additional economic evidence. What were the economic and monetary factors at work? Taught well, teaching with coins helps make history come alive. They stimulate inquiry, provide an avenue to acquiring valuable interpretative skills, and leave an indelible impression on the students.

While the benefits of teaching with numismatics are clear, sadly there is relatively little of it in practice. There are two main reasons. First, there are not many professional numismatists employed in universities and few historians and archaeologists trained in numismatic methodology. In some places, there is even an aversion to numismatics based on the misguided perception of it being an antiquarian pursuit. Therefore, it is little surprise that there are hardly any units, let alone courses, in university degrees which teach it. Second, there is inadequate published pedagogy on how to teach numismatics, especially material designed to be used by non-specialists. This volume attempts to address both problems with contributions by active numismatists and by historians using numismatics. Several of the articles draw on pedagogical theory and practice as well as the emerging field of digital humanities. Comprehensive templates are included which can be freely used in the classroom. Other articles provide examples of how numismatics enhance our examination and teaching of the past.

The articles are written by scholars from around the world. One of the foremost of these is Australia's own Professor John Melville-Jones (we claim him despite his British origin). John has made an immense contribution to numismatics. He provides in his article for this volume (chapter 2) a typically modest description of how he fell into the field as a young academic. Anyone who knows John realises that his article reads as he speaks with the characteristic flair of a born storyteller. It is replete with Herodotean detours, for instance, an entertaining and illuminating explanation into the Latin origins of the symbols for pounds, shillings and pence (£sd). John's experience provides the perfect example of how numismatics extends beyond collecting, and how well it blends with, and complements, study in other disciplines, in his case, Ancient Greek language and literature. John filled two glaring holes in the study of numismatics. His 1986 book entitled: *A Dictionary of Ancient Greek Coins* and its 1990 sequel, *A Dictionary of Ancient Roman Coins* (the latter updating Stevenson's 1889 *Dictionary of Roman Coins*) have provided an indispensable help to numismatists and non-numismatists who need information about ancient coinage. But, arguably, his most valuable contribution are his two volumes of the *Testimonia Numaria: Greek and Latin texts concerning ancient Greek coinage*. Volume 1, *Texts and translations* appeared in 1993, followed by Volume 2, *Addenda and commentary* in 2007. A final volume, *Testimonia Numaria Romana,* is now nearing completion. In addition, John has made contributions to Byzantine history, particularly the relationship between Venice and Constantinople in the fifteenth century, which have included references to coinage.

The Australasian numismatic community was delighted when John was awarded the honour of becoming a Member of the Order of Australia (AM) "for significant service to tertiary education in Greek, Roman and Byzantine history and numismatics" on Australia Day, 2021. John also holds an honorary doctorate from Macquarie University.

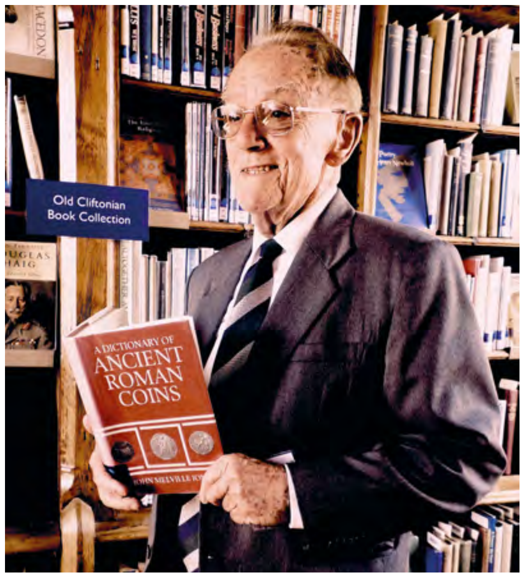

Figure 1 – Emeritus Professor John Melville-Jones AM

Three articles in this journal deal explicitly with the pedagogy of teaching with numismatics. Lee Brice and Theodora Kopestonsky deal with the important issue of the limitations of traditional history teaching being primarily focussed on texts. They demonstrate how to integrate material culture through coins to provide a "tangible encounter with the past". They provide full versions of a coin-based assignment for use in the classroom with any coins. Gwynaeth McIntyre and Jaymie Orchard also present a teaching module based on Roman coins predicated on the pedagogical concept of 'students-as-partners' in a student-run, digital humanities project. They articulate how experiential learning projects lead to deeper understanding, especially when the students have to re-contextualise what they have learned and explain it to their peers. Eliza Gettel's article introduces the often-neglected study of ancient Greek federal coinages and their resonance with many modern coinages such as the Euro and American dollar. She uses this apparent, but somewhat deceptive, accessibility to think about state formation, federalism, and coinages across time using an active learning approach. These articles go to the heart of why it is important to study numismatics and how to teach it effectively.

The next two articles provide examples of the relevance of numismatics in understanding history. Lucia Carbone explains the extraordinary synergy between the development of Latin literature and minting of coinage at Rome, both as expressions of a transformation of identity in the aftermath of Rome's victories in the Punic Wars. Khodadad Rezakhani shows how coins provide proximate evidence which acts as a corrective to traditional narratives about the Moslem conquest of the Sasanian empire. Both these examples beautifully illustrate why numismatics needs to be taught to history students.

Finally, Kenneth Sheedy provides a history of the Australian Centre for Ancient Numismatic Studies (ACANS) at Macquarie University on the twentieth anniversary of its founding and its special role in researching and teaching numismatics.

We trust you will be struck by the usefulness of this (proofed) set of freshly minted articles and, that you will consider using the material in your teaching.

Authors

Gillan (Gil) Davis is the Managing Editor of the Journal of the Numismatic Association of Australia. He holds a PhD from Macquarie University, Sydney, where he was formerly Director of the Program for Ancient Mediterranean Studies and taught Ancient Greek history. He has published and/or co-edited several books and numerous articles, most recently Mines, Metals and Money: Ancient World Studies in Science, Archaeology and History *with Kenneth Sheedy (2020; RNS Special Publication No. 56). Also, with Kenneth Sheedy, he is working on a new study of Archaic Athenian coinage to be published in two volumes under the title:* Money in Archaic Athens. *Volume I will cover the Peisistratids and the Wappenmünzen and volume II the 'owls'.*

Lee L. Brice is Professor of History and Distinguished Faculty at Western Illinois University. He has published seven books on ancient history including most recently New Approaches to Greek and Roman Warfare *(Wiley 2020) and* People and Institutions in the Roman Empire *(Brill 2020), as well as articles and chapters on Corinthian coinage, military history, teaching, and the Roman army on film. He is also senior editor of the monograph series* Research Perspectives in Ancient History.

Teaching with numismatics

John Melville-Jones

Abstract

This paper explains how the author drifted into the study of ancient Greek and Roman coinage in a serendipitous way. The author has made multiple contributions to numismatics during his career. The remainder of the paper describes a number of institutions in different countries and the ways in which they handle and promote the study of this subject, closing with a discussion on how one might go about systematically introducing history students to numismatics.

Keywords

[Teaching numismatics] [ancient Greek coinage] [ancient Roman coinage] [numismatic research] [numismatic collections].

The collection of articles in this volume follows another recent publication, *Numismatik lehren in Europa*, ("Teaching Numismatics in Europe"), edited by R. Wolters and M. Zeigert.[1] The title of the Australian successor indicates that it has a slightly different approach. "Teaching **with** Numismatics" implies that numismatics, which is studied in its own right in only a few places, can nevertheless be an important adjunct to the study of a great number of other subjects. Taking one example from an area of which I have some knowledge, Roman history of the middle of the third century CE, is an area that is unclear in many respects. The written sources are either lacking or unreliable, particularly the so-called *Historia Augusta*, authorship unknown, which contains many passages that can be shown to be mere inventions.[2] But thanks to the coins that were issued by the emperors during this period, we have a better chronological framework and a greater understanding of the areas that these often short-lived emperors controlled.

A numismatic journey

If I begin my contribution to this collection by describing my own experience of becoming a sort of numismatist, it is because I believe that it is one that has happened to a number of other people. I was led into this area of study in an unexpected way. In spite of the splendid work that is done in different ways in Vienna, Louvain, Stockholm, Sydney, and Oslo, and by the American Numismatic Society and a number of other institutions, numismatics will in most cases be a marginal subject, and few persons will engage in it as a primary subject of study until they have finished majoring in something

1 Wolters and Zeigert 2017.

2 The bibliography on the *Historia Augusta* is enormous; see Thomson 2012 for a recent treatment.

else. My own first university, Cambridge, did appoint one exceptional scholar, Philip Grierson, to the position of Professor of Numismatics, but when his tenure of the professorship came to an end, so did the position itself. Now the staff of the Coin Room in the Fitzwilliam Museum are always ready to assist students and other staff with inquiries into this subject, and occasionally supervise some postgraduate topics, but that is all. However, from time to time serious research in numismatics is engaged in by students there; for example, recently the degree of MPhil was awarded to Julia Trocmé-Latter who looked at the ways in which Oliver Cromwell and Napoleon Bonaparte both used Roman numismatic imagery on their coins and medals. She has subsequently established herself as a numismatist working for A.H Baldwin and Sons, a prestigious coin dealer in London.

In my case, it was only by chance that I became involved in this fascinating subject. When I was at school, and when I took my first university degree, I avoided looking at the little grey circles that appeared in the margins of the textbooks on ancient history that I was studying. I found them unattractive, and the syllabuses that we followed and the examinations that we took did not include any special mentions of coins. After this, when I was appointed to a lectureship in Classics and Ancient History at The University of Western Australia, the first lectures that I gave on historical topics did not include any references to ancient coinage.

But then things changed. When I was twenty-seven years old, I returned to Cambridge to study for a one-year Diploma in Classical Archaeology (which no longer exists), and this changed my life. One of the obligatory units in this course was ancient numismatics, and the man who taught it, the Assistant Keeper of Coins and Medals at the Fitzwilliam Museum, Graham Pollard, infected me with his enthusiasm for the subject. Although he was acting only to replace someone who was on study leave for a year, and his special subject of research was the Renaissance medal, he was able to present an inspiring account of ancient Greek and Roman coinage, and the experience of handling a number of these coins, some of them amazingly beautiful as well as being historically informative, led me to decide that I would make this a major subject of study, instead of architecture, which had been my previous plan. On my return to Australia, I was allowed to introduce a one-year unit of teaching called "Classical Art and Architecture", and ancient Greek and Roman coinage became a significant part of this subject.

However, this does not mean that I became a traditional numismatist. When it came to academic research, I realised that Western Australia was not a suitable place to investigate the sort of topic that professional numismatists would normally choose – studying the products of an ancient mint that had not been sufficiently studied before, deciding how many dies had been used to strike a given series of coins, or analysing a coin hoard and trying to extract as much numismatic and historical information from it as possible. I chose a different approach: I would use my knowledge of ancient Greek and Latin to do what no one had done before, and collect all the written sources for this subject, literary, epigraphic and papyrological. This meant that I would be creating the sort of publication that might have been written by some German scholar in the nineteenth century (like Friedrich Hultsch's *Metrologicorum Scriptorum Reliquiae*,[3] but adding translations of the ancient sources into English, and some explanatory notes). The sources relating to ancient Greek coinage have now been published under the title *Testimonia Numaria* (the second word being spelt with one 'm' because this was more common in early Latin, and as a homage to Barclay V. Head's monumental *Historia Numorum*). The first volume contains texts and translations, the second a commentary, some additional texts and an index of topics.[4] The final volume, *Testimonia Numaria Romana*, will deal in a similar way with Roman coinage.

I had at one time thought of working on a similar collection of texts relating to Byzantine coinage, but I have abandoned this idea, not only because of the extra knowledge that I would have to acquire, but because some of the relevant material is not yet available in print and exists only in Byzantine manuscripts that can be difficult to access, and sometimes difficult to read.

In addition, I decided to write two books that would help non-numismatists to understand the terminology that was used by numismatists. These have already appeared: *A Dictionary of Ancient Greek Coins* in 1986, and *A Dictionary of Ancient Roman Coins* in 1990.[5] I find with age these books are especially useful because they remind me of many things I have forgotten since I wrote them. While I have taught only a few students directly about ancient numismatics, I have been a teacher of another kind, helping collectors or students of ancient coinage to navigate the terminology and the ancient written sources when they exist.

ACANS

Later I became involved with the Australian Centre for Ancient Numismatic Studies (ACANS), which was set up in 1999 as a part of the Department of Ancient History at Macquarie University in Sydney with the help of a generous donation by Bill and Janet Gale, and is unique in the southern hemisphere. It has not only helped numismatists in Australia, both ancient and modern, to improve their work and meet one another, but it has also provided important assistance to students of ancient history in this area, which is sometimes neglected.[6]

3 Hultsch 1864-66.
4 Melville-Jones 1993; 2007.
5 Melville-Jones 1986 and 1990.
6 See their website at Australian Centre for Ancient Numismatic Studies. Discussed at greater length in Ken Sheedy's contribution to this volume.

The Centre has, in the two decades of its existence, been very successful in attracting students of ancient history to study Greek and Roman numismatics (six of whom are at the moment pursuing postgraduate studies in subjects that have a numismatic content), and it has combined this with a strong research profile. Its Director, Associate Professor Kenneth Sheedy has published extensively on coinage, notably of the Cyclades and worked closely with ANSTO on metallurgical analysis of coins. He has been joined by Dr Gil Davis, the Director of the university's Program for Ancient Mediterranean Studies, who, in addition to a number of significant publications on Greek history, archaeometallurgy and coinage, has worked with Director Sheedy in creating a die-linked corpus of Athenian coinage before 479 BCE which forms the heart of a forthcoming two-volume work on the ancient Athenian *Wappenmünzen* and Owl coinages. Dr Davis and Macquarie's Professor Damian Gore have studied the chemical composition of early Attic coinage and they have published a new way of using surface chemical analyses to 'see through' the patina that accrues on the surface of coins over time. Furthermore, research which has been conducted by Dr Davis as part of a major ERC (European Research Council) grant into the sources of ancient silver based under PI Professor Francis Albarède at the ENS de Lyon (École normale supérieure de Lyon) has successfully sourced, geolocated, and isotopically identified many of the most significant mining regions in antiquity as well as devising a new methodology for lead isotope analysis and a completely new method of silver isotope analysis. The Centre has a Junior Fellowship program, which arranges for two advanced students each year to engage for three to four months in seminars with the Director, to research a topic on their own and to participate in the Centre's other activities (Fig. 1). They also have regular contact with the annual Gale lecturer. Six of these former Fellows now have established careers in academia for themselves.

Fig. 1. ACANS seminar room. From left to right: John Melville-Jones, Nikola Carsule (2012 ACANS Senior Fellow), the late Matthew Trundle (2012 Gale lecturer), Danielle Steyn (2012 ACANS Junior Fellow), Kate da Costa (ACANS Project Officer) and Clare Rowan (2005 ACANS junior fellow). Photo by K. Sheedy. Used with permission.

Now, having written more than 1600 words, what can I say about the topic on which this volume of the *Journal of the Numismatic Association of Australia* is focused? In the first place, we live in a world in which electronic communication has added to, and in some cases replaced, traditional methods. So, although handling ancient coins is an experience which really brings the subject to life for the fortunate students who can do this, just as the best way of training physicians, and particularly surgeons, is by dissecting cadavers, much can be learned and enjoyed by studying photographs and electronic images, and coinage can be studied anywhere, provided that adequate guidance is given.

Secondly, it is unlikely that numismatics will ever be a major part of undergraduate study at most universities, and it will only be rarely that it will be a major part of postgraduate work, because a postgraduate student needs a supervisor who has an adequate knowledge of this subject. This means that in most cases it will be a fringe subject, or even ignored.

Numismatic education outside Australia

There are, however, some exceptions. The most outstanding example is the University of Vienna, which honours the memory of the world's greatest numismatist, Joseph Eckhel, and can benefit from the nearby Münzkabinett. This university offers a wide variety of short courses on elements of this subject at undergraduate and graduate level.

Fig. 2. Joseph Eckhel. Public Domain.

Eckhel was a Jesuit priest. In 1773 Pope Clement XIV issued a Papal Brief beginning with the benign words *Dominus ac Redemptor Noster*, 'Our Lord and Saviour', ordering that the Society of Jesus and its name should be suppressed in Western Europe and the colonies in which he had power over his church (the Society was revived by Pius VII in 1814). The reasons for the suppression are many and varied, but it may be suggested that in general the problem for the Jesuits was that they were too smart, and therefore too ready to question the established order.

Eckhel was then promptly appointed by Maria Theresa of Austria, the empress whose silver thaler is still used as a trade coin in some parts of the world, to the position of Professor of Antiquities and Numismatics at the University of Vienna, which he held until a year before his death in 1798. During that time he was continuously active, and his major publication, the *Doctrina Veterum Numorum*, "The Science of Ancient Coins" in eight volumes, published in 1792-1798, remains as a magnificent study of the subject, still occasionally useful for modern researchers, and one that no single modern scholar will ever be able to replicate. I am very pleased that four copies of this work are held in Australian libraries, one of them most appropriately in Macquarie University's ACANS.

At the University of Vienna, numismatics is taught by a number of staff for whom this subject is their primary, or at least a major, subject of teaching and research. The Department is the only autonomous university department teaching this subject in Europe (or perhaps in the world).[7]

7 Institut für Numismatik und Geldgeschichte, "Home page."

Fig. 3. Some of the staff and postgraduates of the Department of Numismatics and Monetary History, University of Vienna.
From the left: Marc Wahl, Agnes Aspetsberger , Martin Bär, David Weidgenannt, Elmar Fröschl, Petra Vonmetz, Professor Dr Reinhard Wolters (Head of Department), Kana Tosuka, Hubert Emmerig (back), Nikolaus Aue (front), Jan Hendrik Giering. Source: Institut für Numismatik und Geldgeschichte, "Home page." Used with permission.

It begins with a compulsory module as part of an Ancient History bachelor degree, in which there are two units, "Identifying and describing numismatic objects (Antiquity)" and "Ancient Numismatics and monetary history". These introductory units lead to more specialised ones at the Master's or Diploma level, where a wide range of subjects is offered, including, as an example, the following in one semester:

Archaic and Classical Greek coinage – methods and matter
Coins and history: Nerva, Trajan and Hadrian
The mint of Vienna within the scope of Austria's monetary history
Mediaeval and modern numismatic objects, excluding coins
Excursion: coin finds in the collections of Lower Austria
Coin Finds and Coin Circulation in Pompeii
Identifying and describing Numismatic Objects: Antiquity
(Compulsory) Numismatic Practice and Cataloguing

Numismatics is of course taught actively and successfully at many European universities as a small part of the curriculum, particularly in the case of ancient Greek and Roman numismatics. The program at Vienna provides an exceptional example of what continues to be a vibrant academic community of numismatic specialists, There are too many strong programs elsewhere to give due attention to each one.

On the other hand, at the other end of the spectrum, many short courses (sometimes called seminars) are offered by universities and other organisations. We might contrast the summer seminars that are offered by the American Numismatic Society with the much more varied short seminars that are offered by the American Numismatic Association,[8] primarily focused on American coinage, and on grading coins and detecting counterfeits.

The 2017 ANS Graduate Seminar (left to right): Alireza Khounani, Tara Sewell-Lasater, Thomas Faucher, Kevin Feeney, Fae Amiro, Gregory Callaghan, Richard Teverson, Jesse Kraft, Layah Ziall-Bigdeli. Image Courtesy of the American Numismatic Society, used with permission.

The summer seminars consist of eight weeks of full-time teaching with students also writing research papers while in New York. ANS staff and guest lecturers introduce students, mostly junior faculty members or PhD students, to the history of the discipline and its methods.[9]

By contrast, an unusual eight-week class in numismatics, occupying two hours each week on Saturday mornings, was offered at Adelphi University in New York for a few years from 1978. It was not a regular unit in any of the university's programs, but rather one for which the university provided a venue, and students who were deemed to have

8 American Numismatic Association "Summer Seminar."
9 American Numismatic Society, "Eric P. Newman Graduate seminar in Numismatics."

passed were issued with a certificate by the organisers, recognising them as "Certified Numismatic Advisors".[10] It was hoped that it would be taken over by the university, but after a few years it died. This shows that the focus of the course was on training collectors and dealers, not on what might be called numismatic research.

If we leave Europe and the USA, and investigate Asia, it is clear that the study of this subject in the People's Republic of China has received a boost in recent years, because in 1992 a Numismatic Museum, administered by the People's Bank of China, was founded in Beijing, with visits by school and university students being encouraged.[11] Of course, the principal focus of the exhibits is on Chinese coinage, but the museum does display coinage of over a hundred other civilisations in its Foreign Collections. For instance, its website displays some Byzantine coins (described correctly as Eastern Roman), *tremisses* of Heraclius, Theodosius II and Constantine IX.

A recent development has been the establishment of a summer school at Northeast Normal University, Changchun, Manchuria ("Normal" teaching institutions were once so called because they were focused on teaching high school graduates the norms of pedagogy and the subjects that they would be teaching). The theme of the 2019 Summer School that was organised for its Institute for the History of Ancient Civilisations by Professor Sven Günther was "Representations of Power on and with Ancient Coins". Shanghai's University of Finance and Economics also has a Museum of Modern Coins, but numismatics does not officially form a part of its teaching program.

However, this is not matched in India, where there was, at the time of submission, no university that has a member of staff employed to teach numismatics, though in recent years there has been an increase in the number of people who wish to study coinage, usually the coinage of the Indian states.[12] When (or if) an opportunity arises to study the large number of gold coins issued from many mints from the period of the Roman Empire and later, that have been discovered in the vaults of the Padmanabhaswamy temple in Thiruvananthapuraman, India, with other priceless articles of gold and jewellery, there will be plenty of experts and students seeking to extract as much information as possible from this material.[13]

There are many missed opportunities where the teaching of numismatics could easily happen, but the situation has improved. The University of Leeds provides an example of a recent highly positive development. The university starting with a small collection of Roman coins assembled by the Department of Latin over time, acquired more coins from various sources, many of them coming from the collections of wealthy and generous

10 Adelphi University 1978.
11 Chinese Numismatic Museum, "Homepage."
12 Sircar 2008, 37-47.
13 Das 2016.

donors, and now has more than twenty thousand coins, tokens and medals, both ancient and modern. At the end of the last century, after the Chair of the university's Coin Committee retired, the collection was neglected for almost a generation, but recently a numismatics project has been developed under the control of Dr Simon Glenn, with the aim of making it more generally acceptable, and finding ways of integrating it into teaching and research projects – teaching *with* numismatics, in the sense that this collection of essays is examining.[14]

In addition to the Leeds collection there are two new summer programs that have emerged recently in Athens. The British School at Athens (BSA) has in the recent past offered a biennial two-week short course. The program has been directed most recently by Professor K. Rutter and Dr. M. Loy and is intended as a post-graduate course.[15] A second numismatic summer course was initiated in 2017 by the Section of Greek and Roman Antiquity (formerly KEPA) of the National Hellenic Research Foundation. The "Summer School on Greek and Roman Numismatics" is an intensive ten-day course taught annually by Numismatists in KEPA and colleagues from other research institutes in Athens.[16] Each course has a different special theme and invites foreign scholars to participate. Like the BSA program, it was cancelled for 2020 and 2021. These new Athenian courses illustrate growth in opportunities for students and teachers.

Introducing numismatics to students

What should be done when someone wishes to introduce this subject to students whose main area of study does not include it? Here are some suggestions, limited to Greek and Roman and Byzantine coinage, which those with interests in other areas can adapt as required.

First, a basic bibliography should be provided, restricted to writings that are easily accessible to students, with written notes explaining the topic that will be addressed in what is bound to be a limited number of classes. Second, it will be necessary to discuss a certain number of coins, providing the students with actual specimens, rather than images of one kind or another, so that they can have the experience of handling them.

My basic choice of ancient coins would be as follows. In the first place, an electrum coin of the sort first issued in Lydia and other places in that area would be a good starting point, particularly if a non-invasive analysis of its metal could be used to stimulate discussion of the question of whether it had been issued at a value that matched the value of the metal. Next would come a silver stater of the island of Aegina, which would lead to a discussion of where the silver came from (possibly from Siphnos, although

14 Sayers 2018; Glenn 2020.

15 British School at Athens 2018.

16 National Hellenic Research Foundation 2018.

modern analyses are suggesting that this might not be the case), the possible significance of the obverse type of a turtle being replaced by that of a tortoise, and the evidence from hoards of the extent to which these coins were exported to places outside the Greek world. An 'owl' of Athens would follow, and a stater of Corinth, and the use of these currencies could be contrasted with the fact that it was a long time before the Spartans began to strike a few coins from the end of the fourth century onwards, after studiously avoiding this practice for many years. A Persian Daric might also be included. Students could be told the story that is related in Plutarch's *Life* of the Spartan king Agesilaus (16.6) about the way in which a Persian satrap managed to force this king to leave his territory and return to Greece in 395 BCE by sending ten thousand of these valuable pure gold coins to different persons in Greece as bribes, to encourage them to engage in anti-Spartan activities. This explains the reported statement of Agesilaus that he had been vanquished by "ten thousand archers", because the obverse type of these coins shows a figure, probably representing the king of Persia, running while holding a bow and lance. Although many of these coins were issued, they are quite rare nowadays (perhaps because they were melted down because Greek recipients might not have wanted to show that they had received them), so they fetch high prices if they are in good condition, which is not uncommon because their high value meant they were likely to have been hoarded rather than used for everyday purposes.

Although a few more coins from the large number of separate Greek mints that issued coins before the mid-fourth century BCE might be shown to illustrate the great variety of coin types, it would be more important to show the students some silver and gold coins of Philip II and Alexander the Great, to discuss the types that were chosen to be placed on them, their significance, and explain how modern scholarship has made it possible with almost complete confidence to establish when and where they were minted. A coin of a Hellenistic king could then be used to show how as time went on the idealised ruler portrait became normal.

Since well-preserved specimens of some of these coins will be expensive, the use of copies might be considered. Some of these can be purchased inexpensively, but their quality is inconsistent so that it might be better to rely on illustrations in books, unless there is some easily accessible collection that can be visited. I have seen a few copies that were produced by the British Museum for educational purposes, using the electrotype process, made by Robert Ready, and later by his sons, between 1859 and 1931. After that the museum stopped producing them. The copies had Robert Ready's initials impressed into their edges, and even if these had not been erased, people would wander in and show them, believing that they were genuine and valuable. Also, some uniface specimens were produced, but it was possible to join them together and try to hide the join.

The electrotype process involved making a mould to copy each side of a coin or medal, then placing the moulds in an electrolytic solution until a layer of copper was deposited on the surface. The two electrotypes would then be attached in a sandwich to the sides of a base metal plate of the right thickness, and the whole would then be coated with a layer of the right metal. It would then be quite difficult to determine whether a coin was genuine without invasive investigations. The process has now been replaced by more modern ways of creating copies, an activity in which in relatively recent times forgers have excelled. I remember that more than thirty years ago someone brought to me what appeared to be a gold stater of the Hellenistic Greek ruler Antiochus VI. When I checked, I realised that no gold coins were known to have been issued for this king during his short reign, so this was either an exciting discovery – or perhaps not. Seeking advice, I consulted my friend Dr Martin Price of the British Museum's Department of Coins and Medals, and he responded with good humour, saying that he had once been in the Lebanon and had come across a similar coin. When he showed it to a local dealer of good standing, the dealer slid a drawer open, extracted a similar coin, and said, "Here you are, if you want a pair of cuff links". I decided that I had not made a remarkable discovery.

Returning to the question of teaching students about ancient Greek coins, a billon tetradrachm of Alexandria might be shown (worth in fact only about the same as the much lighter Roman *denarius* because of the low proportion of silver that it now contained, and, if it was exchanged for Roman currency, being valued at an even lower rate), and one of the bronze coins issued by a Greek city under Roman rule, the coins that used to be called "Greek Imperials", but are now usually referred to as "Roman provincial coinage". Altogether we could show the students about a dozen Greek coins, preferably in two 45-minute classes. Then around the same number of Roman coins could be used to compare and contrast the different systems of coinage.

The beginning of Roman coinage would be harder to illustrate, because of the nature of it and the rarity of some of the earliest specimens. All Roman coinage was originally in bronze (the Latin word *aes* which the Romans used to describe this currency sometimes, because of the context in which it is found, clearly means copper, but more often it seems to mean bronze). And before the Romans issued any coins, they seem to have made payments of stored up wealth in shapeless crude lumps of cast bronze (which we call *aes rude*), or cast bronze bars with representations of animals, birds or other objects. We are accustomed to describe these ingots as *aes signatum*, or "*aes* marked with a sign", because of a statement by the Elder Pliny in his *Natural History* (33.13.43) that has been considered reliable, even though this author often recycled incorrect information: *Servius rex primus signavit aes. Antea rudi usos Romae Timaeus tradit. Signatum est nota pecudum, unde et pecunia appellata* ("King Servius was the first to put a mark on *aes*. Previously they used crude [*aes*] at Rome, as Timaeus reports. It was marked with a design of domestic animals [*pecus*], for which reason it is called *pecunia*").

We then move to the first real Roman coins, circular cast ones. The Romans used an expression *aes grave*, "heavy bronze, or bronze by weight", and in some contexts this phrase appears in ancient texts to describe fines that were imposed before any coins were issued, when payments would have had to be paid in the weight of metal that had been decreed. However, modern numismatists have become accustomed to use this expression to describe the earliest Roman cast coinage before its weight and size were decreased and the coins began to be struck. Some also use the phrase *aes formatum* (*aes* that has been given a form) to describe some early lumps of bronze that have been given a shape, such as that of a shell, but this name is not found in any ancient source. As with the later term *antoninianus*, which will be mentioned shortly, these inaccurate terms have become embedded in numismatic literature, and it is probably impossible not to use them in the way in which they have now established themselves.

In order to instruct students briefly in early Roman coinage, since there are so many more later coins to show them, we might start with an early bronze coin with a weight that showed it to be on the *libral* standard (based on an *as* that weighed one Roman pound or *libra*), following this with a silver coin from the middle of the third century BCE, bearing the legend ROMANO, or a *quadrigatus*, showing a four-horse chariot on the reverse, and then an early *denarius*, followed by one with the numeral XVI on its obverse to show that it had been retariffed at sixteen *asses*, rather than the original ten which had given it its name. After this, there is an enormous variety of Roman coin types as the mint magistrates who each year had the honour of administering the issuing of coins began to choose ways of alluding to the deeds of their ancestors. One coin with types that have an interesting historical explanation should be selected as an example of the way in which this was done.

We then come to the time when the Republic began to suffer from the competition of ambitious men, ending with C. Julius Caesar's having received the dictatorship for life, *Dictator Perpetuo,* and the issuing of coins with his portrait, something that might have contributed to his assassination on the Ides of March 44 BCE. It is unlikely that any of these coins can be purchased except for large sums of money, unless they are in poor condition, but a good website with clear and correct descriptions of his coinage and good illustrations is available on the ACANS and ANS websites.[17]

The coins of Antony and Octavian (before 27 BCE when he received the name Augustus) are historically important, and it is hard to decide which of them should be selected. The most interesting one might be the denarius issued for Antony in 32

17 Australian Centre for Ancient Numismatic Studies, "A New Honour"; American Numismatic Society, "Mantis."

BCE which advertised his victory in Armenia on the obverse by combining his portrait with the legend ARMENIA DEVICTA, and showing a portrait bust of Cleopatra on the reverse. This coin can be used to show how, like many later rulers, Antony was advertising a victory rather than the defeats that he had suffered in his Parthian campaign. The head in profile shows that Cleopatra did not resemble Elizabeth Taylor, but it is still important for the projection of her image. The reverse legend, CLEOPATRAE·REGINAE·REGVM·FILIORUM·REGVM, "of Cleopatra, queen of Kings, and of (their) sons who are kings", is also something that can be usefully discussed with students of ancient history.

With hundreds of years of imperial coinage to come, only a few more coins can be added unless the introduction to ancient coinage that I am imagining can be given more time. So here are four more examples of coins that would be educational from different points of view. In the first place we might look at a *sestertius* of Nero showing his portrait and titles on the obverse, and on the reverse a roofless, walled building. This needs to be interpreted, because ancient artists were usually unable to use linear perspective to represent objects or buildings. What we see on this coin appears flat at first, but the left part of the design shows the side wall of the building, and the less wide right part shows two doors, meeting in the middle to show that they are closed. This building was the Janus of ancient Rome. It was roofless, and was not a temple, as so many modern writers insist on calling it though only Plutarch (*Numa* 20) among ancient writers calls it a temple. The reverse legend, PACE P(opulo) R(omano) TERRA MARIQUE PARTA, "Peace created for the Roman people on earth and sea", marked the end of hostilities with Parthia (Tac. *Ann*. 14-15) and alluded to another cessation of hostilities with the Parthians during Augustus' reign (*RG* 29). This type clearly shows that Nero was presenting himself as the new Augustus. In addition, this coin could be used to discuss the meaning of the abbreviation S(*enatus*) C(*onsulto*), "by a resolution of the Senate", which was used only on the *aes* coinage during the time of the empire, except for a few years at the beginning of Nero's reign, using a slightly variant form EX S(*enatus*) C(*onsulto*) on the gold and silver coins, which suggests that the Senate had taken over from the young emperor the formal control of the issuing of precious metal coins, as well as the *aes* issues. This *sestertius* would also be a good example of the fine style of portraiture that was developed by die engravers at this time.

A short digression on imitations

It might be interesting, and educational from another point of view, to consider examining one of the imitations of Roman *sestertii* that were produced by the Paduan artist Giovanni da Cavino in the middle of the sixteenth century.[18] Their fine style has led many persons to fail to recognise Cavino's products as being not genuine Roman

18 Lawrence 1883; Kurz 1973, 78-79.

coins (the principal points of difference are the slightly exaggerated modelling of the faces and bodies, the insistence of centring the designs on the flans, and the rather broader serifs, like fish tails, that appear at the ends of some letters). It is not surprising therefore that in the catalogue of a prestigious modern collection published some sixty years ago a *sestertius* of Titus was not recognised as being his work. Also, imitations actually produced by Cavino are almost impossible to find (the best place to see them is in the Museo Bottacin at Padua), because after his death his son and perhaps others used his dies (which are now held in the Cabinet des Médailles in the Bibliothèque Nationale, Paris) to strike more imitations, which are on larger, slightly thinner, flans. Many modern writers do not realise this. For example, Michael Matzke, writing recently in *Schweizer Münzblätter*, that no one could tell nowadays which ones were the original work of the sixteenth century.[19]

Some similar medals produced by other artists at about the same time are called ‘Paduans’ because of him. For instance, one that shows a head of Julius Caesar blown up from an ancient portrait on a *sestertius* with the legend VENI VIDI VICI on the reverse, is certainly not his work. The style is different, and it is impossible to believe that Alessandro Bassano would have let him produce something that had no precedent in imperial coinage.

Cavino is sometimes described as a forger, but the truth is different. He lived at a time when, at the height of the Renaissance in Europe, many artists and architects and writers were fired with a desire to equal the works of the ancients, the Greeks and Romans who had provided a basis for so many things in European civilisation. If anyone still doubts his honourable intentions, they should go to the Basilica of Saint Antony in Padua and look at his tombstone there. The writing on the tombstone includes the statement, *priscorum praesertim Caesarum multorum . . . imagines cudendo expressit* (“In particular, by striking, he produced images of many of the early Caesars”). This suggests that he was not trying to hide what he was doing.

Although nowadays there are so many photographs of high quality that can be viewed in printed publications or on the internet, handling coins makes the study of them more exciting, and in this case, showing the students how good an imitation can be, and how it can be distinguished from an original coin, adds something to the educational process.[20]

Moving on to later Roman coins, it is difficult to select a few more when there is such a wealth of artistical and historical material that can be extracted from them. Perhaps students could be shown a specimen of one of the ‘Province’ series of coins that were

19 Matzke 2016, 22.
20 On this point, see the articles by Brice and Kopestonsky, Gettel, and McIntyre and Orchard.

issued for Hadrian as he moved around his empire in a manner that reminds one of Pope John Paul II, who until he was in his seventies broke all previous records.

Then there should certainly be a specimen of the so-called *antoninianus*, a coin incorrectly described by some modern writers on the basis of an incorrect use of this term by the writer of the *Historia Augusta*. To give artistic verisimilitude to what might otherwise have been a bald and unconvincing narrative, the author inserted into his text a number of quotations of supposed documents, and mentioned payments made in different kinds of coinage, using terms that were mostly invented. In fact, the proper description of this coin, which was first issued by Caracalla, and continued to be issued until the end of the third century CE, was a double *denarius* and the fact that it weighed only approximately one and a half *denarii* can lead to some discussions of monetary inflation and the nature of fiduciary currency.

As a contrast, we might jump a century and use a gold *solidus* of some emperor in the fourth century. The name of this coin, meaning "entire, complete, unvarying" (which inspired sorely needed confidence), was first applied to an *aureus* issued by Diocletian, who was attempting to stabilise a currency that had become increasingly unsatisfactory over the preceding decades, even after a valiant attempt by Aurelian to improve it. But it is normally reserved for a slightly lighter gold coin (72 to the Roman pound) that began to be issued by Constantine the Great in 309/10 CE and within a few years had replaced the *aureus*. This coin can be used to discuss with students the effect of having a coinage that in at least one metal has a stable value. As for deciding which *solidus* to use for teaching, it would be interesting to look for one that shows somewhere the design that is called a Christogram, combining the first two Greek letters *chi* and *rho*, the beginning of the Greek title *Christos* that was applied to Jesus. As an example, a *solidus* of Constantius III's wife Galla Placidia, issued in 421-22, shows on its reverse a Christogram being inscribed by Victory on a shield. It could be used to discuss the extent to which Christianity was gradually gaining power in the Roman Empire. It could also be used to explain the legends CONOB or COMOB that had begun to appear on Roman gold coins, the first indicating that the coin was *obrussus* (a word that had come to mean of pure gold) of the purity that had been established at Constantinople, and the second (like this one) that it was issued at a "companion" or *comitatensian* mint, accompanying the emperor.

Finally, the term *solidus* could be used, with some other words, to explain why in English coinage the abbreviation that was used until recently to describe sums of money in pounds, shillings and pence – £sd. These letters stand for the Latin words *librae, solidi, denarii*, 'pounds, shilling, pence' (the first is an ornamental form of the letter L, written with a line across the middle (or two in the case of the Italian *lira*). These terms go back to Rome. Before the Romans began to mint coins, they were using lumps of bronze as currency, some of them clearly intended to weigh a pound, or *libra*, and some of the earliest coins also weighed a Roman pound, about 324 grams (actually, up to 1% more, but 324 is easy to divide when fractions are needed). The weight of the bronze coinage was then reduced, and the word *libra* was not used of coinage except occasionally when a large sum of silver coinage minted on a weight standard different from the Roman was being described. However, in the late Roman Empire, when major sums were being paid in gold, in bullion or coinage, they were likely to be measured in pounds, and this continued until mediaeval times. However, in the later eighth century in England and in Charlemagne's reign the word began to be used to describe a weight of silver, since a shortage of gold had led to this metal's becoming the principal medium of exchange in northern Europe. After World War I the Bank of England began to issue notes that were printed, not written, and they bore on them the declaration, "I promise to pay the bearer on demand the sum of one pound". This declaration remained on the £1 notes until they ceased to be issued in 1984, although anyone who went to the Bank of England and asked to be paid one pound for his note would either have been turned away, or just given a banknote, perhaps his own returned to him.

As with the pound, the history of the *solidus* shows a decline in value. It started as a Roman gold coin, and lasted for several centuries, being taken over by the Byzantine emperors, and called a *nomisma* or *holokottinos* ("completely cooked") meaning that it was of pure gold, and a *bezant* in Western Europe, acknowledging its Byzantine origin. In the early eighth century, by which time gold coinage was hardly being issued in Europe, it became the name of a sum of money, no longer a coin, but one-twentieth of a silver *libra*, although the Italian version of its name, *soldo*, came to be the name of a silver coin issued in many Italian cities from the end of the twelfth century onwards.

The *libra* was also divided into 240 silver *denarii,* called *deniers* in French, *pfennig* in Germany and *pen(n)ing* and *penny* in English. This is why the last letter in £sd means 'pence'. This arrangement of 1 pound-twenty shillings-twelve pence remained in force until February 15, 1971, the saints' day of Jovitus and Faustina of Brescia (decimal coinage had been introduced in Australia five years earlier on St Valentine's day in 1966). It could be quite complicated to add up sums of money in these different values. I remember that my father, who had a business of selling woollen cloth, worked in his early days with a little booklet which enabled him to sell so many yards of something at four shillings and seven-pence halfpenny a yard, perhaps even deducting five per cent if paid in cash. Nowadays, of course no one needs to make calculations of this kind, and few young people can add up sums of money unless they have a calculator to do it for them, so with credit cards and other means of transferring money, we seem to be approaching a monetary world very different from that of the ancient Greeks and Romans, one in which many people do not carry coins or paper money with them. If this trend continues, the only people who will want to have coinage and paper money continue to be issued will be criminals and, of course, numismatists.

Author

Professor John Melville-Jones joined The University of Western Australia in 1957. From 1963 he included numismatic content in some of the units that he taught. Although numismatics was not the only subject in which he conducted research, he published a number of books and articles relating to this subject, including two volumes (so far) of Testimonia Numaria *as well as two dictionaries on ancient Greek and Roman coins and it was one of the reasons for his being appointed as a Member of the Order of Australia (AM) on Australia Day 2021.* (john.melville-jones@uwa.edu.au)

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Teaching evidence use and interpretation with coins[1]

Lee L. Brice and Theodora B. Kopestonsky

Abstract

Due to the difficulty in integrating material culture, classes taught about the ancient world usually rely on literary and, occasionally, epigraphic sources. Students get the impression that for ancient history, texts are the only, or the most important sources. Yet, material culture is a significant component, sometimes the sole source, of our knowledge about the past. By adding material culture to the curriculum, students tangibly engage with the past, encounter another type of evidence, and learn critical analysis and argument skills. This article presents several versions of a coin-based material culture assignment designed for use in large or small classes.

Keywords

[analytical skills] [coin] [coin iconography] [historical evidence] [material culture] [numismatic methodology] [pedagogy] [student-centered learning]

Introduction

A consistently difficult aspect of teaching the ancient world is integrating material culture–artefacts–into the classroom. Students often use literary sources in classes on the ancient world and may even encounter inscriptions, such as the *Res Gestae Divi Augusti*. When students consider how we know what we think we know about the ancient world they often get the impression that for Greek and Roman history texts are the only or the most important sources we use. But material culture is an important component of our knowledge about the past.[2] Often it is our only source other than the archaeological traces seen on sites. Yet, outside classes in archaeology or art history, material culture hardly exists and even in those classes where it is customary content it is often necessarily limited to images on a screen. Bringing material culture into the classroom is valuable not only for presenting another type of evidence, but it also stimulates student engagement with tangible objects while teaching invaluable critical

1 Versions of this project were presented at the Dupage County Social Studies Conference in Naperville Illinois and the AAH annual meeting in Champaign-Urbana Illinois. We are grateful to conference organisers and audience members for their insightful comments. We also thank Frank L. Holt and Andrea Moore, who read drafts of this article, as well as the anonymous peer reviewers of JNAA. All the comments contributed to improving the final article. Most importantly, we thank our students in Macomb, Illinois, and Knoxville, Tennessee, without whom this article and assignment would not have been possible.

2 For a recent discussion with bibliography see Dyer 2021.

analysis and argument skills. This article presents several versions of a coin-based material culture assignment, designed for use during classes large or small.

Students are often unfamiliar with material culture – both what it is, its value as evidence, and how we employ it. This problem is particularly pronounced in so-called "general-survey" classes in which many of the students are not specialising in history, ancient studies, or archaeology and have little or no familiarity with history as a subject, much less the ancient world or the methodologies we employ to understand the past. Students often struggle with understanding architectural plans, strange objects, unfamiliar artistic styles, and confusing fragmentary remains. Regardless of our students' background, part of our task as instructors is demonstrating to them all how we use evidence to explore the past. Also, many students are tactile learners–they tend to learn and retain information better when they can hold and manipulate objects connected with the culture and history they study. Additionally, bringing material culture into the classroom can increase student interest in the material and excite them about learning.

While source documents and literature offer an entry-point to students studying the past, material culture remains critical to understanding it. Yet using it effectively in a class can be challenging and intimidating for students and instructors alike. An instructor wishing to integrate material culture finds a few initial speedbumps. The wide variety of types of material culture surviving from the past (e.g., weapons, jewellery, pottery, coins, etc.) provides a surfeit of choices that can be overwhelming in-class planning. There is also the need to present proper methodology to exploit these items effectively as evidence for the past. Finally, there is the problem of availability. Some programs have museums nearby and a fortunate few have artefacts or high quality replicas readily available for handling during class, but these are the extreme minority of programs and fragile or tiny artefacts are not so effective in large classes. Photographs are helpful, ubiquitous, and often affordable but they are distant and two-dimensional. Casts can be inexpensive but require space to store and must be transported. No wonder most instructors find it difficult to bring material culture into the classroom.

Coins provide superb tools for bringing material culture and how we use it as evidence into classes of various sizes and backgrounds.[3] They are a common artefact from many societies in the present and past and one with which current students are already familiar. Unlike so many historical artefacts, there is no need to explain what a coin is or how it usually functioned in the past – as a monetary instrument and carrier of signals of identity. Coins still function in much of the world in the same way they did in the past. This near ubiquity also means that they are not tied to a specific culture. They are a diverse type of material culture. Modern coins are readily available in many places around the world and smaller denominations are generally affordable, and therefore

3 In addition to the articles in this volume, see also McIntyre, Dunn, and Richardson 2020.

useful for exploring diverse cultures and societies. Coins are small but not fragile; therefore, they are not necessarily a burden to transport and share in a classroom setting as something like armour or a glass vessel could be.

Numismatics need not be a difficult topic to introduce to a class, regardless of student background. With its specialised vocabulary, mixture of financial and artistic qualities, and detail-oriented methodology, numismatics can appear intimidating to some instructors and students unaccustomed to the field. If we are expecting students to absorb the specialisation in a semester-long history survey course then fear would be an understandable reaction. But neither teachers nor students need acquire the skills to become specialists. Since the goal is to introduce material culture and have students consider how scholars can use it as evidence there is no need for methodological depth. We have found that with a short crash course (less than a class period) on coinage, numismatic terms, and methods, students have sufficient information to consider, interrogate, and discuss coins as evidence. During the recent spate of online teaching, I recorded the lecture and posted it online making it possible for students to review it before class and as often as they wished on their own time.[4] There are also supporting materials in the public domain available online to students.[5] Students can draw upon these materials in addition to some helpful articles cited in the bibliography for additional material.

Bringing a piece of material culture from any period into the classroom and presenting sound methodology is not the limit of introducing how we explore the past, since scholars often need to exercise their imagination in interpreting artefacts. Whether it is a coin, ear scoop, figurine, or any other artefact, scholars often exercise imagination in the process of trying to understand it and how it fits into a culture. We may understand how a coin functioned in a particular period in the past, but we also need to identify the coin's types and attributes and consider what they mean in the culture, if anything.[6] Once we have interpreted the types, we can use the evidence they provide to piece together aspects of the past.

While it is helpful to cultivate students' historical imaginations, this must also be tempered by the limits of the evidence. For example, a metallic coin indicates something of the mint's access to raw materials and the technology for fabrication (e.g., struck or cast), but does not suggest how the metals were mined or processed. Students

4 Lee L. Brice created the original, long version of this assignment presented here. Subsequently, he shared it with Theodora B. Kopestonsky who modified the short and simplified version using Teaching Assistants in a large archaeology survey course. This article is a result of collaborative discussions about the assignment. Specific modifications by Kopestonsky are noted by name, but otherwise Brice acts as the singular first-person voice as the author of the original idea.

5 E.g., Australian Centre for Ancient Numismatic Studies (ACANS), "An introduction to ancient numismatics"; American Numismatic Studies, "Introduction to terms and methods."

6 See for examples, Holt 2016 and 2021; Williams 2007; Noreña 2011; Yarrow 2020.

need opportunities to exercise their imagination within the boundaries of evidence analysis. We have developed and tested assignments that allow instructors to effectively introduce material culture into the classroom, teach basic methodology and provide students an opportunity to build analytical and interpretive skills.[7] These are the kinds of experiences that will excite students and which they will need regardless of their major or future path.

The assignment

The need to bring material culture into the classroom can be met in the assignment we are presenting. We recognise that in order to be effective it needs to be flexible and easy to implement. Since instructors have different requirements for time and enrolment there are several versions included. Although our discussion is based on coins from modern Canada and the United States, this assignment is flexible enough to be adapted for use with coins or tokens (or some bills) from nearly any modern or historical state that issued coins. Perhaps most importantly given the current requirements for online teaching, the various versions of the assignment can be created, posted, and completed online by students.[8]

The basic components of the assignment are fairly straightforward. The project context is "set" in the distant future and involves results of an imagined archaeological dig (Appendices 1-3). Students are to imagine themselves as archaeologists or historians working in a future lab. They have received a packet (hoard) of coins that were recovered in an archaeological dig on a planet identified as Terra.[9] Their assignment is to analyse the hoard and determine as much as they can about the civilisation that minted (most of) these coins, based only on the information on the coins in the hoard. They do nothave to discover the "actual" society that minted the coins, merely one supported by the evidence in the hoard.

7 Sienkewicz 2013. The assignment we are presenting is an example of student-centered learning, sometimes connected with authentic learning or experiential learning. On student-centered learning there are numerous resources online, e.g., Oneil and McMahon 2005. On authentic learning and experiential learning see Stein, Isaacs and Andrews 2004; and Kolb 2014.

8 Online use of the coin assignments presented here is less than ideal because of the loss of tactile experience, but we recognise adjustments needed to be made during the pandemic and in larger surveys, on which see below. More about online numismatic assignments designed to be online can be found in McIntyre, Dunn, and Richardson 2020; Orchard and McIntyre this volume.

9 Because the "hoard" is supposed to have been recovered from an archaeological dig, the assignment is not designed with paper money in mind, but if an instructor wants to use modern currency that is printed on plastic-like substances that might survive burial (e.g., recent Canadian bills) then those can function too, or the hoard could have been recovered in a sealed context in which paper money survived. There is flexibility in the hoard contents. When creating a "hoard", consider the end goals; what ideas do you want to be emphasized. Be sure to include diverse coins so students have ample options to deliberate and answer these problems. For example, to solve the problem of dates it helps to have a coin or bill that has bicentennial, two hundred years, or some other indication of date. Tailor your hoard to your own national coinage and objectives.

The assignment's goal would seem like something they could look up on the internet, but there is a necessary catch. The students are instructed to forget, for the duration of the assignment, everything they already know about the history, society, religion, and political organisation of the modern society whose coins they are examining. This condition is what requires them to use their imagination, but also their careful analysis. The students are told that previous archaeological missions and future scholarly research have correctly identified the animals, plants, and objects like cars, skyscrapers, planes, bridges, or ships on the coins; therefore, they know what an eagle, horse, sailboat, or race car is on the coins. But they do not know the identity of any individuals or states who are not explicitly identified on the coins. Similarly, if they already know the language(s) on a coin then they can read it. Since the original assignment started at an American university it assumed the students could read English, but not all students can translate the Latin on Canadian and American coins. How the coins were recovered or arrived in the student's lab is not germane to the assignment. The set of coins is important, so they must examine all the coins to draw conclusions. The parameters should be clear in the included assignment guidelines (Appendices 1-3).

Imagination is encouraged, but any conclusions must fit the evidence of the coins. Hoards are pre-set by the instructor to include coins that will provide diversity of coin types and denominations. Some information common to most coins, such as minting authority (ethnic) or whether the four-digit combinations on coins are dates, has to be interpreted by the students exercising their powers of reason, unless the instructor chooses to give them this information. For example, if the students want to argue that the words "dollar" and "cent" on the coins they received in past iterations indicate denominations of the same monetary system, they have to show how they came to that conclusion. Students need only draw conclusions supported by the evidence and not the correct "actual" interpretation of the society minting the coins, giving them flexibility in exploring possible interpretations.

Since imagination of the sort necessary for this assignment may need to be stimulated among students accustomed to strictly analytical assignments with objectively correct answers, I assign David Macaulay's book *Motel of the Mysteries* as additional reading in the longer version of the assignment.[10] It is a humorous treatment of a future archaeology dig that in part satirises Howard Carter at Tutankhamun's tomb. But Macaulay's work is also stimulating along the lines of this assignment since he uses numerous line drawings to illustrate how archaeologists might draw insights and conclusions from material culture with which they are unfamiliar. An additional bonus of Macaulay's book is that it shows how difficult and deceptive artefacts can be when it comes to

10 Macaulay 1979. Results have been better in the long version of the assignment when Macaulay is part of the assignment. In order to reduce costs to students we have made sure the book is available in the library reserve collection.

interpretation. Like the artefacts in his book, the information carried by coins can be extremely misleading. American coins, for example, carry English and Latin legends which suggests the United States is at least bilingual, but few Americans speak or even read Latin. Through its light approach it encourages students to think about the process and its pitfalls, as well as use their imagination in interpretation.

The methodological aspects of the assignment provide students with opportunities for some hands-on experience with numismatics and the nature of professional research. We do not necessarily expect them to use numismatic methodology perfectly, but they need to use the correct terminology in reporting their findings – obverse, reverse, type, attribute, field, legend, and ethnic. When working with larger hoards in the longer version of the assignment, they must also provide an inventory of the hoard, but in order to facilitate this part of the project a sample with the correct formatting is provided. In upper-level classes, I spend some class time introducing numismatics and coinage as well as the terms and their appropriate use. I usually ask students in all classes to view the assignment video the night before and think about the coins with which they are familiar. A key idea they need to understand is that no feature appears on a coin by accident, and some aspects can be extremely small. Some classes have more opportunity to explore the language of numismatics since the number of coins in the hoard, the amount of time they have with them, and the end result of the assignment is set by the instructor and is dependent on the needs of the class material.

Hoard assignment–long version

Upper-level classes on Greek or Roman history, archaeology, or civilisation are a location where the students and the course material both benefit from having more time to work on the coins and produce written papers (Appendix 1). In this instance the hoard consists of more coins of diverse denominations and often there are a few examples from a neighbouring state in order to stimulate students to think about the contrasts and relationships between the states. This version of the assignment has repeatedly functioned well in classes of 12-35 students.

Students tackle the assignment alone or in teams of up to four persons. One advantage of teams is that there are more student brains to work on the problem. Another advantage of teams is that they can divide the discussion into four components. Teams of four have each member choose to focus on different historical specialisations – political, economic, social, and artistic – allowing the team to provide broader coverage. The larger number of coins gives the teams room to explore iconography. Although the version provided by each student in the team is graded individually, the papers need to present a consistent overall interpretation of the minting society and the meaning of the coin types and iconographic program.[11] Alternatively, when students work alone in this long version, they may choose one of the four specialisations and thus avoid getting overwhelmed. The hoard is available both physically in the instructor's office for examination by appointment and scanned as two images (reverse and obverse) which students may access online and enlarge for close examination (Figs. 1 and 2). These images have proven sufficient to keep the hoard available for online teaching without diminishing the quality of student work or the accessibility for group work. During this longer version, students have several weeks for analysis and writing up their reports as papers. More recently, students (both individual and teams) had the option of presenting their interpretations in a video posted online for the class as a whole. We anticipated that future assignments will draw more heavily on multimedia presentations.

Figs. 1 and 2 – Images of the obverses and reverses of coins in a hoard provided to students for a long version of the assignment.

Hoard assignment – short versions

The coin hoard assignment can still be effective in large general studies survey classes, whether held as a large group or split into TA-led discussion sections. We have tested the

11 To encourage actual rather than imagined competition I usually add an incentive by offering extra credit or a treat for the best team interpretation (based on originality consistent with the evidence).

assignment in classes during a World History survey with groups of up to 45 students, as well as in a large introductory Greek and Roman archaeology course in which students regularly met in smaller 22-person discussion sections with graduate teaching assistants (TAs). In these scenarios the goal is usually to get students to handle material culture, think about what we can learn from it, and explore methodologies including analysis and interpretation of artefacts.

One in-class short version supplements prior in-class introduction with the coin assignment video, which is available online beforehand. Upon arriving to class, the students are divided into groups of 4-6 people sitting together. After the instructor briefly explains the assignment and the parameters (Appendix 2), each group receives a packet (hoard) of up to six coins in which there is some diversity. The group then works through the hoard quickly (20-25 minutes) trying to learn as much as they can about the society that minted the coins. Teams come up with their own strategies for working together. The instructor is present to answer questions and keep everyone on track. Each team must write down its conclusions in two copies, one of which is given to the instructor before presentation to the class. Each team presents its findings to the class and must stick to the findings it has presented to the instructor. Once complete, the class may vote on the best set of findings. Afterwards, students write up a short response discussing an aspect of the assignment such as the strengths and weaknesses of using artefacts.

Larger general survey classes delivered online or which have smaller discussion sessions can still use the short assignment format, albeit simplified. In this version (Appendix 3), the assignment can be completed in one class session with small groups of 2-3 students in discussion sections led by TAs, through breakout rooms, or modified for individual work. Starting in a similar fashion as before, the instructor offers a short lecture (or video when online) providing background information about ancient coins, terminology, context, and role, but highlighting the valuable iconographic data. Turning to three modern coins (e.g., U.S. state quarters), the instructor explains the parameters of the assignment, models the methods of interpreting coin imagery through the use of this sample hoard and asking pointed questions with full class involvement to spark imaginations, before offering possible interpretations. The same basic assignment context of an archaeological lab remains. Then, the groups are provided with their own hoards (packets),[12] filled with five modern coins which they must analyse for information about the minting society. Students fill out a worksheet culminating in a

12 In Kopestonsky's short version, the coins were selected so that the packets uniformly had at least one consistent theme such as the natural landscape, architecture, monuments, patterns, etc. to assist students in their interpretations. Instructors also can curate coins to emphasize different aspects or themes. For example, by selecting representations of only one gender or creating an equal distribution, students can be encouraged to discuss gender dynamics in society. A variety of denominations and coin sizes were chosen. Multiple different iterations of the hoard are possible with endless interpretations.

short interpretation explaining their reasoning (Appendix 3). Ultimately, the goal is the same, but more directed questions and visual analysis are emphasised here.

However, some general studies survey classes are simply too large for in-class groups to be practical, and may run without small discussion sections, or be run fully online. In these cases, the instructor assigns the coin assignment video and briefly presents during class the nature and parameters of the assignment. Then if there are no discussion sections, images of a small hoard or several small hoard images are distributed online to the class members who analyse the hoard alone outside class and write a short paper outlining their findings due in the next class period. This format has been found to be effective without losing class time, though it sacrifices the tactile component of the exercise and is, therefore, less desirable. Nevertheless, the learning objective can still be achieved.

Conclusion

How we know what we think we know about the past is an important part of teaching about the past. Following through on this aspect of instruction includes sharing our sources, presenting our methods, and acknowledging their limits. Providing students with literary and epigraphic texts and discussing how to read critically and carefully for historical details is a common means of giving students a chance to experiment with our sources and the process. They build some skills and insights into the scholarly process. Documents are accessible and therefore pragmatic. But these efforts, while entirely appropriate, are open to improvement.

The focus on documents omits a large category of sources – material culture. These include all kinds of objects representing many aspects of life and events in the past. While material culture is not entirely unbiased, it can shed light on facets of the past that documentary sources omit or gloss over. Indeed, it is often our only historical evidence for entire swathes of history and culture. The methodologies for studying these objects are also an aspect of the field to which students should be exposed. Material culture is necessarily tactile in a way documents are not. Students who have a chance to handle artefacts can benefit in various ways from the experience. They tend to get excited about the learning, retain more information about it, and develop additional analytical skills they need to thrive.

Bringing material culture into the classroom provides numerous benefits but it is generally thought to be impractical because of the associated difficulties. Artefacts are often inaccessible in a classroom setting for a variety of reasons not limited to availability, expense, or class size. Methodologies for interrogating material culture properly can seem daunting, which contributes to limiting engagement with artefacts during class. As a result, students usually remain unexposed to material culture, especially in large general-studies survey classes. But we have shown above that this attitude of exclusion is unnecessary.

We have presented here an assignment which is designed to bring material culture directly into the classroom. Since instructors' and students' needs differ, the assignment is designed in three formats depending on class size and structure. The formats can work together in the same program. We have observed instances in which students who encountered the short version of the assignment in a survey class and later the long version in an upper-level course have demonstrated greater engagement with not only the assignment, but the course material generally and superior retention of the related information. The appendices include handouts we have used to guide the assignments. With these materials readers can adapt the assignment to their courses and needs.

During the 17 years this assignment has been tested, we have found it continues to pay dividends in all kinds of classes and all students, not just history or archaeology majors. With an assignment such as this, students develop their analytical skills while also engaging their creativity, a much underused, but important tool in a changeable world where innovation triumphs. Learning to see and describe details, employing clear and understandable language, and explaining and supporting arguments with evidence are all valuable abilities that can be employed universally in research, writing, and speech. These skills are essential for any job outside of university or college and are not just limited to history. Moreover, this assignment is a chance for students to have a little professional "practice". Today, professionals, just as our students, regularly work in groups, share ideas, and communicate in order to be successful. While the focus here has been on coins, the skills used in this assignment are transferable across disciplines. This interdisciplinarity reinforces why historical studies and interpreting historical evidence of all kinds are useful to all students.

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Appendix 1: The long hoard assignment

Sources and methodology- numismatics: coin hoard project

Historians of all periods must rely on a variety of types of evidence. One of the skills I strive to teach in upper-level classes is the use of evidence, especially material culture. Evidence is a fundamental component of what historians do and how we do it. Documentary evidence (letters, books, texts, etc.) may be the type with which you are most familiar, but there are many other types including photographs and other forms of art, inscriptions, papyri, architecture, material culture in general, and more. Material culture is made up of artefacts of all types, usually recovered by archaeologists. The older the time period on which an historian works, the more likely they rely on material culture for evidence. I devised this exercise as a means to introduce you to some of the strengths and weaknesses of using material culture as sources.

Numismatics is the study of all aspects of coinage and money. Such study can vary from examination of artistic style to statistical analysis of use and distribution of money. While numismatics can be an aid to various specialists including historians, archaeologists, and art historians, it remains a distinct field with its own techniques and specialisations. One of the most significant sources of data for numismatists is the coin hoard. In the fields of archaeology and history, hoards are assemblages of valuable articles (*e.g.*, money, jewellery, or documents) purposely gathered, usually stored or hidden, and later recovered. For example, if you hide under the floorboard a box that contains something of value (*nb*: value is defined by the hoarder), then you are creating a hoard. Once you begin filling a piggybank, it becomes a hoard. If you were excavating a site and found a container with four coins and an earring in it, that would constitute a hoard, as would a larger sample of hundreds or thousands of valuables. Typically, we find hoards because the original owners lost them. Such losses occurred when the owners fled the original site without recovering their wealth or died without exposing the hoard to survivors, heirs, etc.

Because of their potential breadth over time or space or both, hoards (and the coins in them) are useful sources of information for understanding a variety of facets of history including: trade and economy (weight standards, denominations or fractions, metals, purity of silver/gold, origins and distribution of coins, occupations, trading partners, etc.); society (fashions, status, gender roles, literacy, individual wealth, occupations, language, stratification, etc.); religion (deities, temples, themes, rituals, symbols, meaning, dogma, etc.); political organisation (stability, wealth, development, international relations, etc.); and art (portraits, iconography, architecture, monuments, style, colours, etc.). As a result of the accidental nature of hoards, they can be a fascinating mixture of material accumulated over time and space.

The assignment is as follows:

Familiarise yourself with the Numismatic Terms and Methods handout, especially the sections on hoards and on archaeology. You should also view the Coin Hoard Project video posted on the website and review the book *Motel of the Mysteries*, available on reserve in the library. You must analyse the supplied hoard of coins to determine a variety of facts about the civilisation that produced the hoard. Follow the General and Specific parameters that follow.

General assignment parameters:

First, you must choose whether to work alone or be part of a team. No matter which you choose, everyone will only be graded on their own work. The advantage of working as a team is that you have up to four minds working on the problem – figure out as much as you can about the civilisation that produced this hoard. Those of you who choose to work in a team must post your team roster (up to four) in an online discussion post. I will meet with any teams or contractors to discuss any odd peculiarities or questions. The advantage of working alone is (obvious in a pandemic) you do not have to try to interact with anyone else. It is up to you which path you choose.

Second, you (and your associates, if any) must imagine yourself as an archaeological contractor (e.g., Indiana Jones or Lara Croft) or archaeological company (e.g., Pastwatch Inc) from a galaxy and time far, far away. You and your company have been chosen for your particular skills to complete this task. If you are completing this assignment alone then you must write your paper from the perspective of one of the following four specialisations (you should not try to write all four). If you are part of a team, then the team must divide that perspective across the team with only one member per one specialisation (a team may be less than four members):

1. Social History (analyse and explain societal/sociological concerns including but not limited to questions of status, iconography, hierarchy, gender roles, literacy, individual wealth, occupations, language, stratification, religion, spiritualism, belief systems, rituals, etc.).

2. Economic History (analyse and explain economic topics including but not limited to questions on topics like denominations, metals, origins and distribution of coins, fractions, trade, occupations, trading partners, technology, wealth, etc.).

3. Political History (analyse and explain historical topics including but not limited to historical record, political organisation, stability, wealth, development, international relations, technological development, etc.).

4. Art History (must analyse and explain artistic concerns, including but not limited to portraits, iconography, architecture, monuments, style, media, colours, fashion, fad, composition, symbology, techniques, etc.).

Imagine the star-date is well into the distant future. Your team has received the latest coin hoard recovered from the Terran planet, known in antiquity as Earth. Your (or your team's) mission (assignment) is to examine the hoard and see what conclusions you can draw, generally and specifically, about the civilisation in which the hoard was gathered; you must then write up a report reflecting your conclusions based on your specialised perspective. You and your team should critically examine and analyse the hoard and arrive at some conclusions (together if a team), but each member of the team must submit an individual report on one of the four specialisations of the hoard. The hoard, given the name and number "Terran Hoard, number 2020," contains 55+ items. Images of the hoard and its contents are on the website for your examination. Because of the importance of the Terran Hoard, the Director of Inter-Planetary Archaeology has made the stakes high indeed and your team is one of several that applied to examine the hoard. Contractors and teams are competing for an exclusive government contract for archaeological work and salvage rights on the planet as a whole (=bonus grade points); therefore, the stakes are high, and the separate teams must not work together. The hoard is so valuable each team must examine the hoard in isolation and so has no access to the internet other than the course website during the analysis and report writing phases of the project.

Specific assignment parameters:

- Declare yourself an individual contractor or join a team of four or fewer students.
- Each team must divide itself so that each team member is responsible for one of the four specialties listed above in the general assignment.
- Each contractor and team must produce, in addition to their report, one inventory of the entire hoard contents. The inventory does not count toward the six-page minimum for the assignment. This catalogue should be shared within the team and attached to the end of each report. The catalogue style should follow standards for the field (an example is posted online), but you should feel free to be more detailed than the example if you wish and if it will help.
- Each person must produce their own report on her or his assigned aspect of the hoard.
- Your individual report will discuss, in six or more pages, the civilisation that produced the hoard, focusing on your particular specialty. As guidance you can start by considering the facets of each specialty listed parenthetically above, but do not be constricted by my suggested sub-categories. For example, if your specialty is ART then you might examine the items in the hoard in terms of artistic style, fashion, and

iconography, but there are many other aspects of art that you might also consider as you proceed.

- Imagination and critical thinking are also significant skills in many careers, not just history; indeed, a recent government-business commission concluded there was a failure of imagination in schools and business. Think of this assignment as on-the-job training: exercise your imagination and critical thinking skills. While imagination is important you also want to make sure your explanation of the civilisation is supported by the evidence. For example, if you want to conclude that the four-digit combinations on all the coins in the hoard were annual dates then you need to find evidence in the coins to support that interpretation.
- The assignment is not asking you to figure out what is actually on these coins. Your conclusions about the civilisation are determined by your analysis and your creativity. You can be as imaginative as you want, but you are bound by the laws of physics, common-sense, and the evidence. You cannot exceed the available evidence (the hoard) and any conclusion must make sense given the evidence. E.g., if there is nothing in the coins to suggest the Terrans could breathe underwater then you should not conclude that they could do so.
- If you are part of a team, you will each present only your own individual final report to the director, but the reports of the team should reflect a consensus in overall reconstructions of the society that gathered the hoard. If you are working in a team then all team members' reports need to agree on the general particulars and parameters of the civilisation. It will stand out as an indication that the team did not work together if team reports do not share the same general conclusions. For example, if you as a group conclude that the portraits are of political leaders, then no one should draw opposing conclusions. Failure to reach consensus will have an adverse impact on individual grades within a team.
- External research is forbidden. Absolutely no external research is permitted. You must display the results of your critical thought process without recourse to search engines and other external resources. Besides, you are each supposed to be an expert so no extra research should be necessary.
- The Director expects authors to use the standard stylistic and grammatical requirements for all reports. Each report should be six <u>or more</u> pages long. Because these reports will be sent to the highest level of your field and perhaps presented publicly, clear and correct prose is required and will be a basis for evaluation. <u>Do not use any images</u> or coloured text in the report. There should be a cover sheet with your name, your company name, this class, and date of submission in the centre bottom of the page; <u>this is the only place in the report where your name should appear</u>. If you use any sources other than the hoard and term handout then you must include a bibliography.

- Because there are no absolute objective criteria, the Director will read each report and assign it a numerical evaluation based on a variety of factors including but not limited to: quality of the prose; the creativity of the analysis and conclusions, construction of the arguments, and completion of the assignment. The project grade for each student is based on the student's report alone and will not rely on the reports of other team members (if any) except in the case of academic violation.
- Two contractors or one team with the highest overall average paper grade will win the contract. The contract includes five points of extra credit. There is no runner-up award so guard your secrets well.
- Plagiarism, the use of another person's original works as your own, is not tolerated by the professional and academic communities and will constitute academic dishonesty. Violators will face the full consequences set forth by the institutional governing body (WIU).
- **Your report and inventory are due in the dropbox by the date assigned**. Don't forget to submit an inventory with your report.

Because you need to use your imagination for this assignment there are certain ground rules about the present. Since this is supposed to be set in the future, you must assume the following as facts and presuppositions:

- You know the inhabitants of Terra to be human, much like yourselves.
- You know the items in the hoard are coins and you are familiar with how money functioned as a unit of exchange, value, and identity in general in the period that produced the hoard though the specific kind of monetary units are unknown.
- For this exercise, assume you recognise and understand the English language and know that it was the dominant language in the region from which your hoard was probably recovered. You recognise Latin, French, and Spanish if you already know them right now. Do not use the internet as a universal translator. If you do not already know languages other than English, then there are still conclusions you can draw even without translating them.
- **Anything you already know about coins, iconography, political organisation and history of the United States of America must be forgotten or ignored for the duration of this assignment**. Your only source for analysis is the hoard. (e.g., some of the coins carry the legend "ONE DIME"; unless you can determine through examination of the coins themselves or the hoard as a whole what this means, then you cannot determine its meaning or significance). No internet searches for lost information.
- The hoard was recovered from an excavation on the barren planet Terra. Because of an accident in transport to the lab the hoard find spot is lost and the contents were in two crates. The hoard is assumed to be complete without later additions. The director has a few details on the probable recovery area.

- No element appears by accident on a coin (usually). Every word, image, letter, and feature are selected on purpose so you cannot ignore little details. If you are confused as to what I mean, then ask.
- As a result of previous work by future archaeologists, there are certain animals on the coins you can identify. You know what a horse, eagle, bison, fish, bear, sea gull, and other animals are, but not their actual significance to the places or persons identified on the coins. Similarly, plants are known to be plants such as laurel, olives, oak, grasses, tropical trees, etc., just not their significance as icons.
- We can also accept there are certain objects which other archaeologists from the future have identified for the coins. These known artefacts include race cars, buildings, bridges, spacecrafts, space suits, musical instruments and notes, arrows, clothing, pipes, guns, ploughs, roads, boats, and planes.
- Your additional knowledge base consists of what you have picked up in your class and the "Numismatic terms and methods" materials on the website. On the planet where your team is writing up the report you do not have access to sources of information other than the hoard.
- Since we do not have access to complex metallurgical facilities, you will have to guess what kind of metals make up the coins if that seems important to you. Do not hesitate to weigh them if you think it would be useful.
- Remember your audience. The Director is your audience and she also has access to the hoard; therefore, you do not need to spend valuable space describing each coin in detail. This is why an inventory is necessary.
- The numerous objects may seem like an enormous quantity, but you will find there is much duplication.
- For more information on numismatics, see the "Numismatic terms and methods" handouts and the Coin Project video posted for you.
- If something is odd or you are confused about anything regarding the assignment or the hoard, then ask the Director. She can meet with you via video conference; just ask for an appointment time.

Appendix 2: Short, in-class hoard assignment

Numismatic methodology: coin hoard assignment

As you may have noticed, coins are valuable sources of information. They tell you much if you can figure out how to 'read' them. Numismatics is the study of all aspects of coinage and money. Such study can vary from examination of artistic style to statistical analysis of use and distribution of money. A significant source of data for numismatists are coin hoards. In the fields of archaeology and history, hoards are assemblages of valuable articles (*e.g.*, money, jewellery, or documents) purposely hidden and later recovered. If you hide a box containing something of value under the floorboard, then you are creating a hoard. Numismatists tend to be most concerned with hoards of coins.

If you were excavating a site and found a container with four coins and an earring in it, that would constitute a hoard, as would a larger sample of hundreds or thousands of valuables. Typically, we find hoards because the original owners have lost them. This loss occurred when the owners fled the original site without recovering their wealth or died without exposing the wealth to survivors, heirs, etc. As a result of the accidental nature of hoards, they can be a fascinating mixture of material accumulated over time and space. Numismatists use data from coin hoards for the following purposes:

- Hoard data is invaluable for assigning dates to coin issues where the dating of some issues in a hoard is unknown, but other dates in the same hoard are known.
- Less often, information from hoards is used to date the archaeological site or at least assign a *terminus post quem* ("point after which" items were deposited) and/or *ante quem* (point before which") to the site.

Because of their potential breadth over time or space or both, hoard date is a useful source of information for understanding a variety of facets of history including: trade and economy (weight standards, purity of silver/gold, origins and distribution of coins, occupations, etc.); society (fashions, status, gender roles, individual wealth, occupations, architecture, monuments, etc.); religion (deities, temples, themes, rituals, symbols, etc.); and political organisation (Government type, stability, wealth, development, international relations, etc.).

<u>Your assignment is as follows:</u>

Imagine that you and your associates are a team of archaeologists from a galaxy/time far, far away. Your team has been given a small coin hoard recovered from the planet Terra. Your team must analyse the entire sample of coins that you have and see what you can determine about the society that produced your hoard. Each team has a particular specialisation, be sure to focus on yours. Think of this as a puzzle. Use your collective imagination to solve the puzzle and devise a plausible and entertaining solution. By the way, the director of the Archaeological Guild will be visiting in 15-20 minutes to assess your team's progress. You will present your findings to the entire department, and your team must find a consensus – all findings must be unanimous.

Assume the following facts and presuppositions:

- You know the inhabitants to be humans much like yourselves.
- For this exercise, assume you know how to read the English language and know that it was the dominant language in the region from which your hoard was recovered. You recognise Latin and other languages. If a member of your team knows foreign languages then fine.
- You have a reasonable grasp on the animals and many artefacts from the planet that appear on the coins.

- Since we do not have complex metallurgical facilities, then you will have to guess the metal makeup of the coins.

Appendix 3: Short, larger class hoard assignment

<u>*Coinage Interpretation Exercise*</u>

Directions for Teaching Assistant:
OVERVIEW: This week, we will be discussing Roman coins. While I have included coins in the lectures previously, this is the first time that we are going to focus on them. Students should have watched a video about how coins are produced before coming to class.
LECTURE: • First, give some background about production, Roman coin denominations, terminology (obverse/reverse and legend), importance of coins (for dating purposes, economy/trade, & details about culture), and types of information about culture provided through iconography (including events, rituals, customs, honours, architecture, symbols, valued qualities, and words/abbreviations). • Then look at three modern quarters and systematically describe them, make general observations about connected images/themes, highlight what is important, and then with class involvement suggest an interpretation. The example three coins include on the reverse 1) detail of two faces from an over life-size sculpture, one of which has ropes hanging near the eye and some barrier fence near the lips (e.g. it's under construction), 2) a long-haired figure with a wreath in the hair, wearing a short-sleeved flowing garment, approaching a multi-tiered podium topped with five flags which is bracketed by trees, and 3) a landscape with mountains, central lake, and a pine forest framed by three thin tall leafy trees on either side. These images could suggest the elevation of nature in this culture, some sort of journey or quest, the placement and creation of a monument, pilgrimage to a sacred site or anything else they might suggest. The emphasis on the trees and stone could say something about the importance of the environment or perhaps the emphasis on the faces similar to the obverse may be referencing an important person of this culture. Play with this to give the students ideas. This lecture portion of class should be 10-15 minutes at most. You are modelling the exercise here.

GROUP WORK:

- Break the class up into groups of 2-3. Make sure they actually move their chairs so that they will be able to handle the material. Then pass out the worksheet and the small bag of coins to each group.
- Students should easily be able to do the examination portion of the exercise, but keep a look out for oversimplified descriptions. You may need to ask them to clarify the images and iconography they see. Be sure to reiterate the correct terminology especially obverse/reverse for the sides of the coins as you talk to the groups.
- Once the students begin the interpretation portion of the assignment, try (if you can) to spend a moment with each group to talk them through their thinking. Some may need help to think through their ideas. I put coins together in the "hoards" with overlapping/connecting imagery. Try to move them through the process of what is consistently represented, why that might be important, and what that might mean. A shorthand would be to ask them to list what they have and think about how those are connected or have them reorder the coins like a storyboard. Remind them that usually the scenes on the reverse are significant monuments, places, events, or symbols of the culture. They can be real or symbolic. We really just want them to think about the types of values/ideas/messages a culture sends through the coins.
- It does not matter if they are "right" (they can look up the coins afterward, if they want), I just want them to look closely at the coins. While archaeologists and numismatists recognise many things/events/places/concepts on coins and material culture, we regularly have to interpret a lot based on very little information.

Names of Group Members: ____

Coinage Interpretation Worksheet (20 points)
Due Friday, Nov. 1 at end of class

Numismatics is the study of all aspects of coinage and money. Such study can vary from examination of artistic style to statistical analysis of use and distribution of money. Because of their potential breadth over time or space or both, coins are useful sources of information for understanding a variety of facets of history including: trade and economy, society (fashions, status, gender roles, literacy, occupations, language, etc.), religion (deities, temples, themes, rituals, symbols, meaning, etc.); political organisation (stability, wealth, development, international relations, etc.); and art (portraits, iconography, architecture, monuments, style, colours, etc.).

Imagine the year is 2250. Your team of 2-3 members has received the latest coins excavated from a deposit, a hoard, recovered from the Terran planet, known in antiquity as Earth. You do know that the inhabitants were humans like you. Your team's project mission is to examine these coins and see what conclusions you can draw, generally and specifically, about the civilisation in which the coins were gathered. **Anything you know about the iconography and the history of the United States & Europe should be forgotten for the duration of this assignment.** For this exercise, assume you know how to read the English language and know that it was the dominant language in the region from which your hoard was recovered. You recognise Latin and other languages. If a member of your team knows foreign languages then fine; if not, then not a problem.

Part I: Examination

1. Examine the coins assigned to your group. Look at all the details. I suggest that everyone look over the coins and then each group member be in charge of examining a single coin in more detail.

2. Consider the following questions: Are the portraits consistent on the obverse? Who are these people? (What does their clothing, fashion, accessories suggest?) How should we interpret their presence on the coins? What images do you see on the reverse? What do you think these images mean? What does the writing, if there is any, say? Does it help in your interpretation of the coins? Does the colour of coins mean anything? What is the connected narrative or story or themes that you can see in your coins?

Part II: Interpretation & Report

1. Write up your observations on the back of this sheet and turn it (& the coins) in at the end of class. Remember to write the letter of your coin group on the back. You do not need to reference every coin in your interpretation but try to create a story from at least 3 of the coins. Your analysis should fill the back sheet.

NOTE: Each group will have a slightly different assortment of coins. Be creative!

Assignment Rubric

Category	**Points**	**Comments**
Names of group members recorded	**/.5**	
Coin group recorded	**/.5**	
Q1: Coin's measurements, material, & iconography described (½ pt for size & material, 1 pt for iconography [both sides: obverse/reverse] for each coin)	**/7.5**	
Q2: Identification of connected elements & possible significance (1 pt for recognition & 1 pt for explanation)	**/2**	
Q3: Two values/ideas about culture from coins (1 pt for idea, 1 pt for explanation)	**/2**	
Q4: Three coins minimum addressed in discussion of iconography (½ pt per each coin referenced up to 1.5pts)	**/1.5**	
Q4: Interpretation/Explanation of coins' iconography 5-6= Interpretation is feasible and well-supported by at least three of the coins' iconography with a thoughtful, creative, and interesting analysis 3-4= Interpretation is reasonable, has some support from the iconography but perhaps not from three coins, provides basic analysis 2 or less=Interpretation is illogical, unsupported, & strays to far from the iconography with limited or no analysis, three coins not referenced	**/6**	

LETTER OF COIN GROUP ________

1. **EXAMINATION**: Measure each coin (diameter & thickness) with callipers and then describe the material (colour and substance) & iconography (e.g. imagery) on each of the coins in your set (i.e. hoard). Be specific and note words, numbers, and each iconographic element.

	Measurements	**Material**	**Imagery**
#1			
#2			
#3			
#4			
#5			

2. **EXAMINATION/ANALYSIS:** What consistent elements, themes, words, or images are on some or all of the coins? Why might this be important? Note at least one, but there should be multiple examples.

3. **INTERPRETATION:** What can we learn about this culture from these coins? (e.g. What values or ideas do you think are being represented?) Note at least two and explain each.

4. **INTERPRETATION:** Provide an interpretation/explanation for the iconography using at least three of the coins in your assemblage as evidence. In your opinion, supported by the iconography, consider the following questions:

   What messages are being transmitted? What has this culture emphasised in their iconography and why might that be? What is a possible story told by these coins?

Learning by teaching with Roman coins[1]

Jaymie Orchard and Gwynaeth McIntyre

Abstract

Roman coins provide rich and wide-ranging opportunities for student learning about the ancient Mediterranean. In this article we examine how Roman coins can serve as a catalyst for student research, teaching, and learning projects. We use the pedagogical approach Students-as-Partners as a framework, both in terms of students as curriculum developers and as peer-teachers, to discuss the implementation of experiential learning projects using Roman coins. These projects provide students with a unique opportunity to re-contextualise what they have learned and to communicate that knowledge to their peers.

As a case study, we provide details about the creation and presentation of a teaching module on Roman coins written for From Stone to Screen*–a student-run, digital humanities project. We identify some of the challenges that may arise from Students-as-Partners projects and provide an appendix with practical suggestions for each component of the project, as well as possible assessments which could be adapted and implemented in other teaching contexts. Our aim is to encourage others to consider utilizing Students-as-Partners projects as a way to increase accessibility to departmental and museum collections and provide students the opportunity to forge their own connections to the ancient world.*

Keywords

[Numismatics (Roman)] [Students-as-Partners] [experiential learning] [curriculum development] [digital humanities]

Material culture can greatly enrich classroom teaching. Coins, in particular, provide excellent opportunities for students to explore the culture, history, and language of the Romans in different ways than is possible with literary texts.[2] While many tertiary institutions house small teaching collections of artefacts, these collections may not be readily accessible to faculty and students, much less researchers from other institutions. At the University of British Columbia (UBC), a number of graduate students sought to

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1 We would like to thank Chelsea Gardner, Lisa Tweten, Kat Solberg and the rest of the FSTS team for establishing FSTS, digitising the UBC collections, and for providing opportunities to engage with the collection through peer-learning and teaching opportunities. We would like to thank Dr. Matthew McCarty and Dr. Katharine Huemoeller at the University of British Columbia for allowing Orchard to present her research in their classes, and Dr. Jennifer Knapp at Langara College for coordinating and incorporating lectures by FSTS members including Orchard in her courses. Early stages of this paper were presented at the AIA/SCS joint conference in January 2020, we would like to thank the panel coordinators, fellow panelists, and the audience for their helpful feedback. Finally, we would like to thank the reviewers for their insightful feedback.

2 For example, Howgego 1995 presents a case for the usefulness of coins for the study of ancient history.

increase access to the collections housed by the Classical, Near Eastern, and Religious Studies Department (CNERS), and launched a Digital Humanities project entitled *From Stone to Screen* (FSTS) in 2013.[3]

In 2015, students digitised the O.J. Todd collection, a collection of 72 predominantly Roman coins dating from the fourth century BCE to the fourth century CE. In order to increase the accessibility of these coins after they had been digitised, FSTS hired students, with funding from the Teaching and Learning Enhancement Fund at UBC, to create a teaching module, "Reading & Understanding Roman Imperial Coins," which provides an instructor with the information and resources required to confidently introduce coins into their classroom.[4] The teaching module comprises ready-made lecture notes, lesson plans, slideshow presentations, annotated bibliographies, handouts, and answer keys. In 2016, FSTS secured further funding through the same funding body to create more modules. One such module, "Visual Association in Imperial Promotion," was written by Jaymie Orchard using four of the Roman Imperial coins from the O.J. Todd collection.[5]

FSTS's primary goal of creating teaching modules was to increase the accessibility of the collections at UBC. However, some students also sought opportunities to present their completed modules to undergraduate classes at UBC. We, the authors, see the student-created modules as an innovative approach to curriculum design, student-led research and teaching opportunities. Over the last decade much of the pedagogical scholarship has discussed the various ways to create more authentic, hands-on learning opportunities for students.[6] An increase in open-access digital tools and the more mainstream development of Digital Humanities projects, has also facilitated the creation of authentic, tools- and skills-based research projects for students.

This article examines how coins can serve as a catalyst for student research, teaching, and learning projects. It begins by presenting the case for why Roman coins provide such rich and wide-ranging opportunities for student learning about the ancient Mediterranean. The two sections which follow discuss the ways student-led creation of teaching modules harness current trends in pedagogical scholarship. They focus

3 This name arose from the first digitisation project undertaken, that of the Malcolm McGregor Epigraphic Squeeze collection. The digitised squeeze collection is housed in the open collections of the University of British Columbia's Library (https://open.library.ubc.ca/collections/squeezes). The digitisation of this collection was funded by a UBC Teaching and Learning Enhancement Fund grant. Two Greek papyri and five cuneiform tablets are also housed in the library's collection (https://open.library.ubc.ca/collections/artefacts). The other collections housed in the department were digitised and exhibited using omeka.net and collectiveaccess.org, however, a sustainable hosting site was not found. For details about the history of the online components of the FSTS project please see Solberg et al. forthcoming.

4 Martin-Cabanne and Hutt "Reading & Understanding Roman Imperial Coins."

5 Orchard "Visual Association in Imperial Promotion."

6 Brier 2012; Kolb 2014. Also see Stein et al. 2006.

specifically on Students-as-Partners, both in terms of students as curriculum developers and as peer-teachers.[7] We conclude by discussing some of the challenges and questions of sustainability arising from these kinds of Students-as-Partners projects. In order to support those wishing to implement similar teaching module creation projects, we have also included an appendix with a step-by-step guide with things to consider and suggestions for modifications.

Why coins?

Roman coins combine image and text in the same small object, are carried around and traded, and survive to modernity in the millions. Since many modern interpretations of their significance are contentious, instructors looking to incorporate material culture into their curriculum regularly choose other more conventional artefacts. Yet, in Kemmers' overview of recent trends in the study of Roman numismatics, she provides four categories which highlight why coins are such a great source for history.[8] The following discussion will be organised around these categories, expanding this discussion to show why coins are also a great addition to the classroom.

Coins are one of the few uninterrupted sources of evidence; from the invention of the concept of coinage in the 7th century BCE in Asia Minor up to modern times there survives a continuous record of the coinage produced.[9] Coins are almost ubiquitous and although many types are rare, they survive in numbers.[10] They can be used to fill in gaps where the literary or archaeological record provides little information or does not survive. Many of the surviving coins are preserved in hoards which allows for inquiry into larger trends and changes over time while also providing evidence for discrete time periods or events.[11] The nature of numismatic evidence means that student research and teaching projects can be scaled up or down as courses or aspects of the curriculum require.

7 "Students-as-Partners is a process of renegotiating traditional positions, power arrangements, and ways of working in higher education" (Matthews, Dwyer et al. 2018, 958). Students can become 'partners' in institutional governance, quality assurance, community engagement, extra-curricular activities, research strategies, or learning and teaching, Healey et al. 2016, 1-2. In this article, we will be looking specifically at learning and teaching.

8 Kemmers 2019, 2-3.

9 Kemmers 2019, 2. There are also a number of helpful print and online catalogues which increase accessibility to coin types and can serve as excellent teaching and research tools with some guidance. Kemmers 2019, 10-15 summarises various important sources, online resources and databases, and catalogues–such as the *American Numismatic Society*'s "Online Coins of the Roman Empire" (numismatics.org/ocre/) and "Coinage of the Roman Republic Online" (numismatics.org/crro)–are of particular relevance for this project.

10 "Type" refers to the main image on the coin, see Glossary in Metcalf 2012.

11 *Coin Hoards of the Roman Empire* project (https://chre.ashmus.ox.ac.uk/). This resource will become more helpful over time as sections of the website, as well as additional content and analysis, are made publicly accessible.

Although relatively small, coins combine images, texts, and materiality. This allows students to examine how images and text can work together to promote particular messages.[12] The physical nature of the coin itself also allows for a study of metal content, changes in messages based on denomination, and distribution. Size *does* matter, as engravers were able to put much more detail on the larger *as* than on the substantially smaller *aureus*. The coin's value also affected how and where it would circulate; messages could thus be targeted at specific audiences. These portable 'monuments' could evoke memories of past military successes, important family relationships, or even buildings and monuments themselves.[13]

Figure 1: Silver Denarius, Rome, 134 BCE
Obv. Helmeted head of Roma facing right. Star behind on left. Border of dots, Rev. Spiral column centre with statue holding staff, togate figures left and right. above ROMA; left, TI MINVCI C F; right, AVGVRINI. Border of dots. *RRC* 243/1, *From Stone to Screen* T11.

The intersection between image and language (through the use of legends) allows students to explore meaning and enables them to focus on aspects of that message which they find most interesting.

Coins were produced by authorities, whether by one of the *tresviri monetales,* the emperor or his agents, or a local institution. Many of these authorities are known, allowing us to examine these artefacts as ego-documents.[14] There has been some debate as to how much influence Republican *tresviri monetales* had as lower-level administrators. Flower's 1996 monograph demonstrated how these moneyers were able to promote themselves and

12 Wenkel 2017 examines coins in terms of "speech-act theory" and analyses the author-text-reader interaction.

13 For a discussion of the importance of different coin types, see Beckmann 2009. Meadows and Williams 2001, 42 argue that coins should be seen as *monumenta.* The article discusses the connection between Juno Moneta (the aspect of Juno as protectress of funds) and the verb *moneo,* stressing that coins "remind" or bear witness to the memory of something.

14 Kemmers 2019, 3.

their families through the coinage minted during their year in office.[15] Emerging from questions regarding who specifically had control over the images struck on coins is the debate as to whether coins should be labelled as 'propaganda'.[16] These controversies allow students to analyse scholarly arguments, weigh the evidence, and learn how to situate their own conclusions within scholarly discourse.

Coins were not minted exclusively in Rome, and coins minted outside of Rome and Italy provide a valuable source of information about how individuals and communities interacted with imperial power. Usurpers and break-away empires used coinage to legitimise their claims to power either by adopting imperial coin types or by creating new coin types as a reaction against imperial images.[17]

Figure 2: Billon Antoninianus, Antioch, 260-261 CE.
Obv. Bust of Quietus, radiate, right. IMP C FVL QVIETVS P F AVG; Rev. Aequitas, draped, standing left, holding scales in right hand and cornucopiae in left hand. AEQVTAS AVGG [FSTS' version of this coin is very worn and it is hard to make out much beyond the VGG in the legend.] *RIC* 5 (Quietus) 2, *From Stone to Screen* T53

In his narrative account of supposed advice given to Octavian in the year 29 BCE, Cassius Dio has Maecenas argue that no provincial community should have its own coinage or weight system, stressing that instead they should use the Romans' system. This seems to suggest that the Romans understood the power of images on coinage and that Rome sought to control the spread of images and messages through coinage.[18]

15 Flower 1996, 81-86. For a discussion of how the office of *triumvir monetalis* fits into the Roman *cursus honorum,* see Hamilton 1969. Also see Williams 2007, 144-45.
16 This debate has been succinctly summarised in Wallace-Hadrill 1986 with updated discussion in Manders 2012. Other key works in the debate are: Levick 1982; Sutherland 1983, 1986; Jones 1956.
17 Wardman 1984. For example, Wenkel 2017, xix cites Kreitzer's discussion (1996, 22) of Herod the Great's use of coins to present himself as "a legitimate ruler of the Jewish people."
18 Cass. Dio 52.30.9. Bennett 2014 and Howgego et al. 2005 also discuss the significance of coinage in the construction of identity and power. Williams 2007, 149 argues that buildings and temples depicted on coins from provincial mints can be linked to communal identity creation (such as the temple of Artemis for the Ephesians).

By their very nature coins are tied to economic factors. Most modern discussions stress that the majority of Roman coinage was minted to pay the army and other military expenses.[19] As we can trace the spread of coinage to army movements and trade routes, this provides valuable information about military, political, and economic factors throughout the empire. More importantly for the students, coins create a direct link between our time and the Romans'. One student from a third-year class taught at the University of Otago in 2018 anonymously commented on their own experience of the incorporation of coins into the curriculum, "But I definitely think this class has opened up my eyes a little bit more, especially when we went to the museum and saw the coins. We touched something that someone was using as currency 2000 years ago to buy bread or, you know, something really mundane".[20] Unlike literary texts, coins and other artefacts have a physicality which can inspire students, enabling students to literally hold history in their hands.

The versatile nature of coins provides opportunities for students to learn about, research, and teach many aspects of the Roman world. By implementing independent research and teaching projects focused on coins, instructors can encourage students to pursue topics that are of interest to them, while providing a unique opportunity to explore the intersection between history and everyday life. In some cases, accessibility, student numbers, and the availability of resources can be prohibitive to incorporating material culture into course curriculum. However, even if the physical coins are not readily available or student numbers are not conducive to working with the physical objects themselves, there are many online databases of high-quality coin images which can facilitate their incorporation into classroom teaching.[21] Whether examining the coins in person or digitally, students can learn problem-solving skills and how to engage with and contribute to scholarly discourse. Yet, they cannot learn this all on their own and a large component of learning in this way is connected to several pedagogical developments, one of which is called Students-as-Partners.[22] For the purpose of this article, we will organise the discussion of the "Visual Association in Imperial Promotion" teaching module, and FSTS teaching modules more generally, into two sections: the first discusses them in terms of curriculum development (research and content creation) and the second in terms of peer-teaching opportunities (implementation and incorporation into classroom teaching).

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19 de Callataÿ 2011; Hekster 2007; Watson 1958. Kemmers 2019, 44-45, suggests that it is slightly more complicated and one must also keep in mind the historical context, various denominations, and metal use.

20 Quality Advancement Unit 2018.

21 In terms of Digital Humanities projects, using digital images of artefacts or creating digital spaces for their study also provides an opportunity for students to "interact with ancient objects without fear of damaging irreplaceable artefacts" (Gardner et al. 2017, 95). Such databases include *Coinage of the Roman Republic Online* (http://numismatics.org/crro/) and *Online Coins of the Roman Empire* (http://numismatics.org/ocre/).

22 Matthews, Cook-Sather et al. 2018; Bovill et al. 2011.

Curriculum development

Following the digitisation of CNERS artefact and coin collections, FSTS then considered how these artefacts might best be incorporated into the curriculum, thereby providing students with authentic, hands-on learning experiences. Stand-alone teaching modules seemed to be the best option as they could be designed to provide all the material needed to deliver a 50-minute lecture, while also allowing for flexibility in their implementation by providing additional resources, handouts, and information which could be adapted to other learning environments. These modules were created *by* students *for* students, encouraging students to research a topic with the express purpose of designing teaching materials for that topic. This process provided students with the opportunity to learn how to create materials with a particular audience in mind, in this case their peers, and to create the types of resources that they themselves would find helpful to their learning.[23] It allowed students to be active participants in the creation of curriculum content in their courses rather than just be 'consumers' of a pre-developed product.[24] In addition, students were given the opportunity to reflect on their own learning and research processes. Through creation of these modules, students also needed to consider how to best communicate what they had learned from their research, an aspect of knowledge creation which may not always be apparent in traditional classroom assessments.

The O.J. Todd coin collection provided an excellent resource for the development of a Roman coin teaching module. When reviewing the collection in order to choose a topic for her module, the following coin, which depicts Faustina the Elder on the obverse and an altar on the reverse, sparked Orchard's curiosity.

23 Fung's 2016 study discusses six dimensions of a Connected Curriculum project which seeks to engage undergraduate students in research-based programs of study. The dimensions discussed within that project which are directly linked to some of our own considerations are: Dimension 1, students connect with researchers and with the institution's research; Dimension 5, students learn to produce outputs—assessments directed at an audience; and Dimension 6, students connect with each other, across phases and with alumni.

24 McCulloch's 2009 article seeks to encourage a shift away from students as 'customers,' a metaphor which arose out of the commodification of higher education. For a summary of the issues associated with seeing students as customers or consumers, see McCulloch 2009, 177.

Figure 3: Bronze As, Rome, 141 CE.
Obv. Bust of Faustina I, draped, right. DIVA AVGVSTA FAVSTINA Rev. Rectangular altar with door in front. PIET AVG S C. *RIC* 3 (Antoninus Pius) 1191a, *"From Stone to Screen"* T30.

She was particularly interested in this coin, as all the coins she had seen in class depicted the emperor on the obverse. She wanted to explore the depiction of women on coins since the role of women in Roman society (especially in terms of imperial propaganda) was not something regularly discussed in her courses. She was interested in how a coin could function as propaganda for a specific emperor (Antoninus Pius) without including his image. Her choice of topic was also linked to the collection itself. The O.J. Todd collection has a series of coins dating from the reigns of Trajan to Marcus Aurelius, allowing her to contextualise her coin within its historic context, while also using several other coins dating to the early-mid-second century CE from the collection.

Figure 4: Silver Denarius, Rome, 163-164 CE.
Obv. Head of Marcus Aurelius, laureate, right. ANTONINVS AVG ARMENIACVS Rev. Mars, helmeted, in military dress, standing right; holding spear in right hand and resting left hand on round shield. P M TR P XVIII IMP II COS III. *RIC* 3 (Marcus Aurelius) 92, *"From Stone to Screen"* T35

FSTS's first teaching module, "Reading & Understanding Roman Imperial Coins," served as a starting point for the research into Orchard's new module. This previous module provided guidance for how to 'read' coins as well as an introduction to the key terminology and vocabulary necessary for understanding numismatic research and publications. It also provided a model for the structure and format for the new module. Orchard titled her module, "Visual Association in Imperial Promotion," and began compiling evidence and modern scholarly discussions to direct her project. She began her research with the standard coin volumes and catalogues.[25] Howgego's 1995 book *Ancient History from Coins* served as an excellent starting point which helped her to connect the coins with their historical significance. While preserving the potential of her new module being used in conjunction with the first one, Orchard remained cognisant of the intended purpose of her project, which was to serve as a stand-alone teaching module which contained all resources needed to present this module in a classroom setting. A number of art historical sources proved useful in providing the framework for her discussion of the artistic significance of the coins.[26] During this research process, she created an annotated bibliography, collecting resources she had found to build a repository of resources for those intending to use the module to do further reading (for a step-by-step guide through the stages of module creation, see appendix).

In order to prepare students to create their own teaching modules, instructors should provide some preliminary resources and support. Many academic publishers are recognising the need for resources to help students and scholars approach topics that are new to them. For example, *Brill Research Perspectives in Ancient History* publishes mid-length review monographs on the current state of a particular field in Ancient History.[27] These books are written with a student audience in mind and can serve as an excellent starting point for gathering information about a new topic. For the study of coins, Kemmers' 2019 book in this series, *The Functions and Use of Roman Coinage: An Overview of 21st Century Scholarship*, is especially helpful.

After giving students a place to start their research, and instruction on how to use existing resources and bibliographies, instructors should then step back and allow students to find their own way. Students learn by 'doing' and this progression through the research process allows them to develop their own independent problem-solving skills, critical analytical skills, and fosters intellectual curiosity.[28] Throughout the process of working through research on their own, students should still have opportunities to ask questions, get help from their instructor or peers, and discuss their progress. Many studies examining pedagogical developments of this kind have stressed how research-engaged teaching helps to create a community which shares the responsibility

25 See n.9 for direction to print and online coin resources.

26 Bergmann and Watson 1999; Hannestad 1986.

27 Various other 'Handbooks' (e.g., *The Oxford Handbook of Greek and Roman Coinage*) are also helpful places to start.

28 Discussions of how to involve students in research activities within a teaching framework can be found in McCulloch 2009; Neary 2014; Fung 2016.

for learning between the students and the instructor.[29] Such discussions focus on dismantling the neoliberal university model of students as consumers which then leads to individualism, competition, and adversarial relationships between the assessor (instructor) and the assessed (student).

Through the process of developing her teaching module, Orchard gained an appreciation of the challenges of research and how to situate one's discussion into existing scholarly debates. For the study of numismatics, this is challenging due to the uncertainty about a number of aspects of the study of coins. In addition to the 'coins as propaganda debate',[30] there is also some debate over the reach of coins: who was 'reading' them, how far did they travel, and who was their intended audience? Moreover, it is still debated as to whether the emperor controlled the images minted on coins or not.[31] In some cases the identification of the images on the coins is uncertain, in others the date is indeterminate. These challenges make the contextualisation of some individual coins difficult. With so much uncertainty in the field, it can be difficult to communicate a coin's significance to a non-specialist audience without complicating matters or alienating one's intended audience with technical language. Therefore, it is easier for instructors not to include such debates in their teaching or choose not to include discussions of coins in their curriculum. However, by wrestling with these challenges in their research, students cultivate valuable skills and experience which can then help them to situate their own work in the wider world of academic scholarship.

Seeing and treating students as curriculum developers, as researchers, and as co-producers of knowledge reinforces the idea that learning is a process. Knowledge creation does not happen in a vacuum, it develops through engagement with previous discussions, analyses, controversies and conclusions. Incorporating students into that process encourages deep-learning and increased student engagement with material. It also helps them to gain further insight into how researchers develop research questions, compile and examine their evidence, and draw conclusions. Instructors can help situate students within that learning and research community by encouraging students to see themselves as part of this process (rather than just writing an assessment to be marked by an instructor).

Peer-teaching

The original intention for the creation of FSTS teaching modules was to provide a resource that would help academics to incorporate primary source material into their classrooms, while promoting engagement with the collections housed by the CNERS

29 In particular, Bovill et al. 2011 and Matthews, Cook-Sather et al. 2018.

30 For the most part, the debate is centered on the definition of 'propaganda' and its twentieth century overtones. See n.16 above.

31 See Kemmers 2019, 15-30 for a discussion of the various aspects of coins as 'forms of communication' in the Roman Republic and Empire.

Department at UBC. The goal was to facilitate more authentic learning experiences and increased exposure to the material culture, through flexible and adaptable open-access teaching modules that could be used in a variety of courses. Orchard designed her module so that it could be easily incorporated into several existing second, and third, year Classical Studies courses at UBC. However, an exciting by-product of this project is that UBC faculty gave students the opportunity to teach their own modules. For example, Orchard was given multiple opportunities to present her module in various undergraduate courses at UBC as well as present adapted versions in lecture series at Langara College, another tertiary institution in Vancouver.

The teaching modules were not designed simply to present a completed research project at the end. Instead, Orchard saw her module as providing an opportunity to create content that would teach new skills to her peers. The learning process was integral to the development of the module as she sought to teach her peers to avoid many of the errors she herself had made as she learned the material. When presenting her module at UBC, Orchard found that since she had previously taken a number of the same courses as many of the students she was teaching, she was able to build on knowledge she knew they would have (rather than expect them to have) and could link to material covered in their other courses. Her own experience as a student showed her the importance of meeting students where they are at and ensuring that material is explained in a way that makes sense to them. This observation highlights the importance of students as a resource in their own right. Yet they are rarely consulted about their educational experiences.[32] In this case, it was Orchard who was the 'expert'; she was able to facilitate discussions with her peers and guide them through the material that she herself had just mastered.[33] This process encouraged Orchard to consider her own learning process while also gaining insight into the teaching process from an instructor's perspective.[34]

Peer-teaching creates a self-reinforcing cycle. Orchard was a student in a class in which several students piloted the "Athenian Tribute Lists" module, the first FSTS module which focused on the McGregor Epigraphic Squeeze collection.[35] Her experience as a student in a peer-teaching environment motivated her to get involved. Following her own presentation of the "Visual Association in Imperial Promotion" teaching module, she circulated a survey to collect student feedback about peer-teaching and the teaching

32 Bovill et al. 2011, 133.

33 Young et al. 2019, 46-47 cite a number of studies which show that students who undertake instructional leaders opportunities demonstrated an increased understanding of course material and were reapplying material learned in class.

34 Bovill et al. 2011, 137 state that "when students work with academic staff to develop pedagogical approaches, they gain a different angle on, and a deeper understanding of, learning."

35 Hurworth "Athenian Tribute Lists." Peer learning can be defined as, "The acquisition of knowledge and skill through active helping and supporting among status equals or matched companions. It involves people from similar social groupings who are not professional teachers helping each other to learn and learning themselves by so doing" (Zhang and Bayley 2019, 61).

modules that incorporated digitised material culture. The response was positive, with one student in particular commenting, "For me, having a student lecture is quite exciting since it shows the kinds of opportunities available for undergraduates (like me)."[36]

Following one of her presentations at Langara College, a student also made contact, asking about opportunities to engage with UBC's collection and about the development of the teaching modules. In this instance, the presentation at a different tertiary institution increased awareness of artefact collections housed elsewhere in the city and helped to connect students studying similar material at these different institutions. In addition to the various teaching and learning opportunities which arise from student-led curriculum development projects of this type, another possible by-product is an increased awareness of local collections if students are given the opportunity to teach their modules in other venues. If those venues include space beyond the university setting, these modules can also increase community engagement, thereby creating a wider community of learners. In broader terms of curriculum development, depending on the type of project and mechanism for dissemination of the students' research, these projects can reach beyond the instructor, course, and institution.

Students cannot learn how to create content and teach that content on their own. Mentoring plays an important role in student-faculty partnerships. For the student, mentoring provides the opportunity to learn about the teaching process directly from an instructor. Yet, these relationships should not be seen as top-down, or as expert to student, but rather the instructor should be seen as more of a 'consultant.' Instructors are there to answer questions, help students through challenges, and provide guidance. From the instructor perspective, this partnership should encourage teachers to re-examine their own practice, consider different approaches and avenues of inquiry, and explore learning and teaching from a student perspective. By collaborating and harnessing the strength of learners and teachers working together, students and instructors can help develop new ways of teaching and learning, create new pedagogies, and transform institutional cultures.[37]

The FSTS teaching modules provided an opportunity for the traditional classroom structure to be transformed. Instead of a professional 'expert' delivering content to students, student themselves, who had recently learned about a topic and developed learning resources for that topic, then had the opportunity to teach what they had learned to their peers. In addition to the content, students learn a number of invaluable transferable skills, including the importance of clear and precise communication and presentation.[38] One of the best ways to learn is through teaching, and peer-teaching

36 Orchard 2019.

37 Matthews, Cook-Sather et al. 2018, 28.

38 Orchard has found that she has already had the opportunity to apply these skills in her current, non-academic job.

exemplifies these benefits by creating opportunities for students to become both the 'teacher' and the 'learner.'

Challenges, sustainability, and concluding remarks

Although, in our opinion, the benefits of Students-as-Partners projects outweigh the disadvantages, these types of projects do come with their share of challenges.[39] Before embarking on any such curriculum development project, it is worth considering the purpose of the development, the most conducive setting (i.e., specific course) to implement this project, and the intended audience if the content will be posted online or reused in courses at your institution. We conclude with some suggestions of how to mitigate these challenges, along with our recommendations on how to develop or adapt your own projects.

As most of the published scholarship about student-led research and curriculum development projects will show, there is a financial cost to implementing these kinds of projects, and most are supported by internal or external grants. In our case, Orchard was paid to create the module by a grant from the Teaching and Learning Enhancement Fund at UBC. Many universities have similar funding opportunities to help academics develop innovative teaching and learning strategies.[40] These types of funding can be extremely helpful for supporting curriculum development projects (and for setting up Research Assistantships to pay students for their work), but also come with obligations and stipulations related to research outputs. In addition, this financial support may help with initial costs associated with website development or other avenues for dissemination, but it is important to note that without a source of continuous funding there may be problems with the longevity of the resources and the sustainability of the websites.[41] One aspect of students' involvement in curriculum development and design which we believe is non-negotiable is payment for the students participating. Although monetary payment is not necessarily required, students should be remunerated for their time and work, whether that be through course credit, grades, or an internship.

From a teaching perspective, incorporating Students-as-Partners projects require investment both of time and energy. They also require a willingness to take risks in

39 For a discussion of some of the challenges associated with Students-as-Partners curriculum developments, see Matthews, Cook-Sather et al. 2018. For a more in-depth discussion of the challenges associated with the FSTS project, specifically as they relate to the FSTS website and online collections see Solberg et al. forthcoming.

40 For example, the University of Otago has a Committee for the Advancement of Learning and Teaching which provides 'Teaching Development Grants.'

41 For discussions concerning the sustainability of digital scholarship and some suggestions for best practices see Harkness et al. 2017.

teaching and to give up control.[42] In comparison with traditional research essay assignments, Students-as-Partners projects tend to require more time investment and teacher involvement in the early stages. Since each student's engagement with the material and avenue of inquiry will be different, instructors will need to be flexible and adaptable as they help students pursue their research interests. However, as the project progresses, the time investment for instructors decreases especially in the final marking stage (if the project is assessed for grades). Instructors should use part of this time for mentoring students; the mentoring relationship is key to ensuring a positive outcome and success for the project.

There may be some administrative hurdles if the collections are not held by the tertiary institution. For example, if the coins for your project are housed at a local museum, you will likely also need to seek permission to reproduce images of the coins for educational purposes. In addition, if you will be making the teaching modules available online, additional permissions or funds may need to be secured. There is value in working together with community organisations and these collaborations are mutually beneficial. Collaborations can also introduce students to cultural heritage management and provide them the opportunity to work directly with libraries, museums, etc. and learn how to preserve and promote the collections housed in these institutions.[43]

Finally, ensuring the longevity of student projects is largely reliant on continued institutional support both administratively and (potentially) financially. If there is a digital component to the project, this has a financial cost and creates an ongoing expense for website domain names and maintenance.[44] In terms of the overarching FSTS Digital Humanities project, one challenge we have faced arises from its 'student-led' nature. When a project relies on students, there is potential for a lack of continuity. What happens when students leave? From our experience, we suggest ensuring that one or two permanent faculty members be included to help provide that continuity, acting as mentors and mitigators with both internal and external administrative bodies, and supporting student-led initiatives through funding applications and sharing their own expertise.

42 Howard et al. 2018 explore how teachers experience risk-taking in the classroom and the importance of modelling positive risk-taking behaviour for students to help build resilience and promote learning. Bovill et al. 2011, 7 also highlights the challenge of relinquishing control in terms of course planning.

43 Omeka.net, an open-access web-publishing platform can serve as mechanism for student assessment (providing a platform for student designed exhibitions, for example). Omeka itself has understood its value for teaching and student assessment and has provided a number of tutorials and support for new users (https://info.omeka.net/build-a-website/.). This platform has been used in another pedagogy project run by McIntyre, see McIntyre et al. 2020. FSTS published many of the collections online using this platform (as well as collectiveaccess.org), see n.3.

44 For a discussion of the issues associated with creating a sustainable Digital Humanities project, see Gardner et al. 2017 and Solberg et al. forthcoming.

Ancient coins provide excellent primary source material to serve as the foundation for a variety of teaching and learning projects. Peer-teaching and curriculum development projects, based on locally held coin collections, provide a unique opportunity for students to re-contextualise what they have learned and to communicate that knowledge to their peers. It encourages students to develop their own projects, create learning content, and expand their understanding of particular fields of interest. Giving students the opportunity to teach allows them to bring their own experiences, approaches, and methods to the study of a collection. These types of 'learning by teaching' opportunities increase and promote access to departmental and museum collections, allowing students to forge their own connections to the ancient world.

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Appendix – A 'how to' guide

Information about the teaching modules created by *From Stone to Screen* as well as the modules themselves can be found online.[45] The goal of each module was to provide everything an instructor might need, without prior knowledge of numismatic conventions, to teach a 50-minute lecture to students with only cursory knowledge of Ancient Rome. The material developed for each module comprises an annotated bibliography, lecture notes, slideshow, lesson plan, handouts, worksheets and answer keys. While the modules developed by FSTS were created by paid Research Assistants, the creation of a teaching module could be part of the assessment for a course. This appendix provides: commentary on how to select a coin collection for the module project, descriptions of each piece of the module and points to consider when assigning

45 From Stone to Screen "Teaching Modules."

them to students, and finally notes on implementation including suggestions for how to incorporate the module project into one's curriculum, options for renumeration, and potential rubric marking schemes.

If there is a collection of coins at your institution or a collection at a local museum, this provides a logical starting point from which to refine the topic and scope of the project. However, if you do not have access to physical coin collection there are a number of excellent online databases that host high quality images of coins, such as the resources provided by the American Numismatic Society.[46] Using online databases removes the limitations imposed by a physical collection and provides the flexibility to limit the scope in a number of ways to suit your course or desired outcome. Coins could be limited by time period, emperor, reverse image, deity, historical event, location, denomination or any combination of these characteristics. Defining the scope will also give your students a more manageable place to start from. Depending on how you choose to use the modules, for example, if they will used as future teaching tools, you will also need to consider the copyright licensing of images, which may also limit what coin images you are able to use.

Since teaching modules have a number of components that students may not have experience developing, providing a full example is essential, though this may present a sizable amount of work. This example could be used not only to model the project, but may also provide an opportunity for you to introduce students to the basics of numismatic conventions. You may also choose to use FSTS's "Reading & Understanding Roman Imperial Coins" module as a model, with revisions made to suit your institution and desired project outcomes, rather than create one from scratch.[47]

The following sections will break down the FSTS modules into their component parts. A brief description of each part will be followed by a few points to consider when having students complete their own modules.

Annotated bibliography

The annotated bibliography should include an alphabetical list of sources used in the research of the module project. Below each bibliographic entry students should include notes which outline the argument and evidence used to support that argument. As the desired content of these notes varies between instructors, it is important to be clear what is expected. In addition to content, instructors should also clarify whether the notes are to be in paragraphs or point form, what citation style students should use, and a number of sources required.

46 see n.9 above.
47 Martin-Cabanne and Hutt "Reading & Understanding Roman Imperial Coins."

Consider:

- Providing students with a few initial resources to start. This will limit frustration and help students to start their research from a logical beginning. If you choose to provide students with coin catalogues or online databases as sources, you may need to provide instructions on how to read and utilize them effectively.
- Asking students to analyse the source beyond just a summary of the argument. How might this source provide information to further their research?
- Framing the annotated bibliography as a guide for their peers. If a fellow student wanted to replicate their research, reading through the annotated bibliography should allow them to do so.
- Expanding what is expected in the annotated bibliography by asking students to include key quotes or page ranges for discussions of particular importance.

<u>Lecture notes and lesson plan</u>

Lecture notes should be the point form notes from which someone could present the lecture. The notes should be logically ordered, providing key information and prompts, but should not form a script. Students are likely to ask how long their lecture notes should be, it is important to frame this discussion in terms of how long the presentation is required to be, rather than page or word count. Depending on each student's comfort level their notes may require more clear phrasing to communicate the same information.

The lesson plan may take many forms but should complement the lecture notes. The function of this document is to outline the time allocated to each slide and to budget time for group discussion. This document is especially helpful for students if you are asking them to create a longer lecture as it helps them to organise the material, make a plan of what the lecture hopes to achieve, while also incorporating some flexibility based on student engagement with the material.

Consider:

- Reminding students to include content warnings if their lectures will cover sensitive or intense material.
- Asking students to include a land or territory acknowledgment where appropriate and providing information on how to do this appropriately in your area.
- Distributing lecture notes to students to increase the accessibility of the lecture. It is also best practice to use a microphone (where applicable) both for accessibility and to ensure speaking volume is appropriate.
- Clearly defining the time duration for the lecture, as well as how much time should be devoted to each section of the lecture. This will be dependent upon the timetable for the institution. FSTS modules were designed to fill a 50-minute lecture time slot, allowing for a time to teach a concept and engage in class discussion.

Slideshow presentation

The slideshow should guide the audience through the lecture. It should be visually interesting and include images of any coins discussed in the lecture, but should not distract the audience from what is being said. The specific requirements of each slideshow presentation vary considerably; it is important not to assume that your requirements are the same as what students have been asked to do previously, so the specifics will need to be clarified for students.

Consider:

- Explaining accessibility best practices in terms of font size, image usage and labelling, continuity, number of slides, appropriate quote length, etc.
- Discussing the purpose of the slideshow presentation; is it mainly to provide images, to provide structure by displaying headings, to display key information such as dates, or to provide a simplified summary of the verbal presentation. This will help to guide the students as they determine how much information to include on their slides.
- Reminding students about copyright licensing. If the modules are intended for online distribution, you will need to provide information about where to find open-source images or request permission to publish and how, if required, to properly attribute sources used.
- Providing students with the opportunity to test their presentation before it is delivered to a class as image and text may not display as expected, this is especially true with images of coins which can be blurry or too dark.
- Discussing the mechanisms for presentation, will students be expected to bring their own laptop, have their presentation on a memory stick, or will they have online access to cloud services. Consider the accessibility of your request and provide alternatives as not every student will have access to the same technology.

Handouts, worksheet and answer key

Handouts and worksheets should reinforce information presented in the lecture. These additional materials could be used in a variety of ways to help students engage with the material and provide a catalyst for student discussion. Answer keys for the worksheets should also be produced if the module will be posted online or is distributed for reuse.

Consider:

- Discussing the objectives of the handout as its creation may be intimidating for some students. Should it be used to provide copies of images discussed in the lecture, should it provide additional information or resources, etc.?
- Guiding students through the process of creating questions; how to determine what kinds of questions to ask and how to ensure that questions are appropriate to the experience level of the course.

- Printing any handouts and worksheets and bringing them to the lecture on behalf of the peer-teachers. Not all students have printers and printing costs may be inaccessible for some students.

Implementation

The FSTS modules were created by students and then presented as guest lectures by those same students in a number of courses at UBC. There are several other options for implementation depending on the purpose of the modules, how and why they were created, and the learning and teaching goals of both the instructor and the students involved.

Consider:
- Who is delivering the material? Students themselves or the instructor?
- Timing. Are the modules meant to be used as a stand-alone guest lecture or could they be used as mini-presentations alongside more traditional curriculum delivery?
- The ultimate outcome. Are the teaching modules designed as complements to existing curriculum at a particular institution or to provide additional materials which can be shared with other institutions? Can these modules be used to increase access to local collections beyond the institutions which house them and provide resources to institutions which do not have access to those same types of collections?

Grading/remunerating students for their work

Any kind of Students-as-Partners curriculum development project should remunerate students for their contributions.[48] As mentioned above there is a financial cost to implementing these kinds of projects, and most are supported by internal or external grants. These usually help compensate both the instructor and the participants for their time and offset any costs related to the development of resources, websites, or other pedagogical tools. FSTS was able to pay students to create the teaching modules through funding secured from the Teaching and Learning Enhancement Fund at UBC. This avenue allowed for students to gain valuable experience in developing learning materials for others while also researching and learning content themselves as part of paid employment. We encourage those considering a similar curriculum development project to seek funding from similar sources which may be available at their own institution. Alternatively, there may also be options for curriculum development to be remunerated through course credit via an internship or co-op program.

48 Matthews, Dwyer et al. 2018, 967 specifically stress that not remunerating students for their work, thereby relying on students who are financially secure to volunteer their time, leads to problems of diversity and inclusivity, as well as perpetuates inequality within student cohorts. Healey et al. 2016, 8 recognise that reward and recognition of student work, power dynamics and ethics of learning relationships, and scale are major tensions in creating partnerships.

If paid employment or internships are not an option, the creation of teaching modules could be incorporated into students' coursework. In this case students would be remunerated with marks/grades. Placing the choice of topics in the hands of the students allows for the creation of a "democratic classroom" where students play an active role in determining the curriculum for a specific course.[49] However, it is imperative that the scale of the project and what is expected from the students reflect how they are being rewarded for their work. Each instructor should choose how to best implement these into their own coursework but below are some suggestions. Rubrics for assessment are also included below.

1. **Teaching modules as individual assessments**
   Each student chooses a discrete topic (for example one coin) which is connected to overarching scope and context for the course. They then research and create teaching materials related to that topic. Near the end of the semester, each student would teach their colleagues about that topic (coin) through a mini-lecture. Marks to be assigned for the various stages or components of the module, documents reflecting on the learning process by the student, and the final presentation. Most of the marks in this option will come from the instructor assessing the student, although some self-and peer-assessment is also possible.

2. **Teaching modules as group work**
   Topics could be assigned to or chosen by groups of students at the beginning of a semester. Over the semester, students would work together to develop materials which then could be taught to the rest of the class in the final weeks of the semester. Expectations would be for a larger lecture or more comprehensive collection of teaching materials based on group size. Marks could then be assigned through self-reflection and peer-evaluation of the group work (group assessing themselves), stages or components of the overall module creation (instructor assessing), and final evaluation of the module presentation (both instructor and peer-assessing).[50]

One of the major aspects of these projects is to encourage students to explore learning as a process as well as to develop teaching skills. Thus, providing opportunities for students to reflect on their experience of teaching module creation (both as a peer-teacher and as a peer-learner) is crucial to the success of the project. This also encourages students to value the process of learning rather than just focus on an outcome linked to a grade, thereby motivating them to more deeply engage with material, develop skills and

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49 For a discussion of communal as well as self-directed learning and the democratic classroom, see Meinking and Hall 2020.

50 For discussions of self-reflection, peer-evaluation, and assessing group work as well as suggested marking rubrics and other resources, see Lejk and Wyvill 1996; Vassilakis 2009/2010; Nelson 2011.

resilience, and consider challenges and problems as part of the process rather than as failure and reflecting inability to achieve.

These lists of suggestions and considerations are largely based on our own experiences and are by no means exhaustive. We encourage anyone interested in implementing this kind of Students-as-Partners curriculum development project to consider the needs of their own students and avenues for increasing student engagement within their own local communities while also exploring the various resources and support available throughout the wider academic community.

Rubrics

1. Self-reflection written reports/journals (on-going)

Instructors could assign a self-reflection journal, which would be completed weekly/fortnightly/monthly by the student. In the journal students would reflect on the process of creating the teaching module. Some guiding questions could be:

- What were my goals since my last report? Did I accomplish them? Why or why not?
- What resources proved to be the most helpful for this stage of the project?
- What aspects of this stage of the project did I find the most difficult?
- What would I do differently if I were faced with the same situation/task/etc. again?
- What did I learn during this period and/or what am I proud of or satisfied with?
- What are my next set of goals?

Instructors could also use this opportunity to have meetings (or email responses) with students to check in with their progress, mitigate any issues, or provide other guidance or assistance as needed. Instructors may also find these self-reflection journals helpful should they choose to implement Students-as-Partners projects in subsequent years, by using these reflections to indicate what students struggled with and where further explanation or adaptation of the project may be required.

2. Peer-review of teaching presentation

The following categories provide an outline of the criteria by which each student presenter could be assessed by their peers (and their instructor). Weighting for each individual criteria can then be assigned as applicable.

Preparation: Clear evidence of time and effort spent in researching relevant material, organising the material to be discussed, preparing discussion questions.

Academic content: Accurate and interesting material; close engagement with the primary evidence (coins) and any relevant secondary literature (as applicable).

Structure: Clear aim and overview, with introduction and conclusion; visual or written supplementary materials organized with clear demarcations between different sections of the presentation. Handouts (if used) complement the discussion and facilitate student engagement and learning.

Visual appearance: Legible; helpful notation system and clear referencing.

Oral presentation: Clear, poised delivery, working with and expanding on visual/written materials; able to reword, explain and expand on presentation when questioned; enthusiasm and engagement to draw audience in.

Discussion: Discussion was clearly led and focused. Open ended questions helped facilitate the discussion and encouraged students to engage more fully with the material.

3. Self-reflection and/or peer group assessment marking rubric

This rubric provides some guidelines for how students can evaluate their own participation as well as the participation of others in group projects. It asks them to reflect on the various components of a group task as well as what they learned through this process. Instructors could then moderate the group mark for individuals based on these results if needed.[51]

Name: ______________________

Write the names of your group members in the top row of boxes. Then assign a value to each of them and to yourself for each attribute. Finally, total all of the values. Evaluate your work and that of your groupmates as honestly as possible. This is designed to help me offer a constructive critique to all of you.

51 This table was created out of discussions with M. Funke (University of Winnipeg) and incorporates ideas from Lejk et al. 2006, 269. Lejk et al. 2006 also provides a number of options for how an instructor might derive an individual's mark from a group mark based on their contribution.

5=superior, 4=above average, 3= average, 2= below average, 1=weak

Attribute	Me				
Participated in planning					
Helped keep the group on task					
Contributed Useful Ideas					
How much work was done					
Quality of completed work					
Total					

Is there anything specific I should know about the group dynamic that this evaluation does not cover?

Provide some self-reflection of your own experience, working with your group, skill imbalances, personality clashes, etc. Specifically, you should comment on the following:

- What parts of the work undertaken/group dynamic/research tasks/etc. worked well and why?
- What parts of work undertaken/group dynamic/research tasks/etc.) did not work well and why?
- What would I do differently if I were faced with the same situation/task/etc. again?
- What did I learn during this process and/or what am I proud of or satisfied with?

Exploring the ancient Greek world through federal coinages[1]

Eliza Gettel

Abstract

This article demonstrates the pedagogical potential that ancient Greek federal coins offer for engaging students in the complexities of ancient societies. Federal states were common in the ancient Greek world, and they often minted cooperative coinages. However, these states and their coins do not receive much attention in standard courses about the ancient Mediterranean. Yet, students are familiar with the concept of a federal coinage from modern examples, such as euro coins and U.S. quarters, and instructors can leverage this familiarity in the classroom. Ultimately, introducing students to these coins can broaden their knowledge of ancient state forms and prompt them to ask questions about federalism across time and place.

The article offers an introduction to ancient Greek federal coinages, especially of the Boeotians and Achaeans. It includes a sample lesson and general strategies for introducing the coins to students. The strategies take an active learning approach informed by material culture pedagogy. They aim to immerse students in the physical materiality of the coins, as well as their visual appearance. In this regard, the strategies offered for teaching with ancient Greek federal coins can also be applied when teaching about other ancient and modern coinages.

Keywords

[ancient Greek federalism] [federal/cooperative coinage] [koinon] [Boeotian] [Achaean] [material culture] [pedagogy] [critical perception]

How can examining federal coins expand understanding of the ancient Greek world, especially for undergraduate students? By 323 BCE, almost half of Greek city-states cooperated in a federal state, and most of these federal states minted common coinages.[2] However, Greek federalism and associated coinages do not often receive attention in the classroom. This contribution advocates for the pedagogical potential of these oft-

1 I wrote this article during summer and fall 2020 in the midst of the COVID-19 pandemic without full access to a research library and physical research volumes. Luckily, many major numismatic volumes are freely available online. When I have found an online version of a volume, I have noted it in the bibliography so that others can easily find it too. I am very grateful to the inestimable Dr. Carmen Arnold-Biucchi and gracious colleagues in the departments of History and Classical Studies at Villanova University for comments on a previous version of this article.

2 On how widespread the *koinon* was, see Mackil 2012, 305-306. All dates are BCE unless indicated otherwise.

overlooked coins. Here, I set out why they are overlooked, why they should receive more attention, and how they can play a larger role in Greek and Roman history courses.

Coins are a particularly effective medium for introducing students to the complexities of ancient Greek federal states, especially given a dearth of accessible textual sources. Students are often familiar with the concept of a federal coinage, based on their own experiences with modern federal coins, such as the euro and U.S. quarter. Due to this familiarity, the symmetries between ancient Greek federal coinages and modern ones can be leveraged in the classroom to raise significant questions and debates about ancient Greek federalism. Simultaneously, instructors can use these connections to defamiliarise the ancient world: what seems familiar can actually reflect realities of living in a premodern world very different than our own. Close analysis of these coins, therefore, can lead into comparison of ancient and modern societies and raise questions about federalism across time and place. Drawing such connections can help students to grasp the relevance of what they are learning and increase their investment in the learning process.

To this end, in this contribution I offer a guide for teaching with ancient Greek federal coins. First, I provide background about ancient Greek federal states and their coins. Then, I offer strategies for incorporating such coinages into commonly offered Greek and Roman history courses. These strategies draw on my own experiences teaching about these coinages in undergraduate History and Classics courses at three institutions in the United States: Villanova University, Massachusetts Institute of Technology (MIT), and Harvard University. While all three institutions are highly selective, their students vary in terms of their background knowledge and primary interests. At Harvard, I was frequently working with Classics majors who had a deep background in classical languages and societies, whereas most of my MIT students were science majors making their first foray into the Greek world. At Villanova, I often have both populations in the same classroom. Therefore, the strategies that follow are intended to serve a range of learners.

The strategies are very much grounded in an active learning approach that asks students to take ownership of the learning process and investigate the coins themselves. Such an approach helps to scaffold learning for students with various levels of background knowledge. It also generally enables learners of all levels and interests to practice critical perception skills, raise their confidence in working with objects, and experience a stronger personal connection with course material. Ultimately, such a connection can encourage and foster curiosity about these coins and the societies that made them.

Background: federalism in Greek antiquity

We frequently associate the ancient Greeks with political forms such as democracy and oligarchy. However, ancient Greeks also lived within states that approximate what we today call 'federal states.' From roughly the sixth century onwards, Greek *poleis* (individual city-states) cooperated in a shared public sphere, often called τὸ κοινόν (*to koinon*) in ancient Greek. The term directly translates to "what is shared, common, public." Common institutions, usually a representative council and direct assembly, facilitated cooperation between city-states in political decision-making and economic concerns, among other spheres. In return, citizens could benefit from shared privileges, such as intermarriage and property rights in nearby city-states. Those taking part in the regional state often considered themselves to be members of the same *ethnos* or ethnic grouping, which frequently shared such markers as a dialect, origin myth, and common cults. The *koinon* was the institutional manifestation of this supra-civic community. *Koina* were widespread in the ancient Greek world. A conservative estimate is that 40% of Greek city-states participated in one by the mid fourth century.[3] The most well-known example is the *koinon* of the Achaeans, better known as the Achaean League, which was a prominent player in the Peloponnese as Roman power expanded into the region during the second century.

Another *koinon*, that of the Boeotians, offers an example of how one of these common polities worked. It brought together groups which inhabited the greater region around Lake Copais in the southern part of the central Greek mainland. The most famous *polis* in this *koinon* was Thebes, the home of the mythological king Oedipus and legendary Antigone. We have a relatively good idea of how this state was organised in the early fourth century due to a short description recorded in a papyrus fragment, the *Hellenica Oxyhrynchia* (16.3-4; see Appendix, no. 2). In 395, the *poleis* were divided among eleven districts comprised roughly of the same number of individuals. Each district sent representatives to a Boeotian council, not unlike the U.S. Congress or European Parliament, and judges/jurors to shared courts. They also provided a set number of soldiers and cavalrymen to the Boeotian army, and they sent taxes to a common treasury. Boeotians came together frequently at the same sanctuaries, such as that of Athena Itonia near Koroneia and that of Poseidon at Onchestos. From at least the third century onwards, the districts of the *koinon* even competed in the festival of the Pamboeotia held at the sanctuary of Athena Itonia.[4]

Modern scholarship often refers to these regional politicized communities, such as the *koinon* of the Achaeans and the *koinon* of the Boeotians, as 'federal states.' The reason why emerges from the preceding description: they often look and act according to our expectations for federal states in today's world. Most notably, they dispersed power

3 Mackil 2012, 305-306.

4 For recent in-depth studies of the *koinon* of the Boeotians, see Mackil 2013 and Beck and Ganter 2015.

across at least two levels of governance: the civic and regional, as we expect of a federal state. However, Greek historians have debated whether we can apply the term 'federal' in these cases. Some argue that applying the term prompts overinterpretation of the ancient evidence.[5] Despite the limitations of this translation, recent scholarship has tended to use the term, and personally I see advantages to doing so, as long as it is applied with attention to what is gained and what is lost due to its application. Moreover, arguably, this scholarly debate can be set aside for the classroom context. Even if 'federal state' is not a perfect translation for the ancient Greek terms, its familiarity can be helpful in teaching, especially at the undergraduate level. Students across the world, including in Australia, Europe, and the United States of America, are familiar with the concept of federalism in its wide variety of forms, and it is a convenient shorthand for communicating realities of the organization and operations of these ancient states to them.

Greek federalism in the undergraduate classroom

Despite how common federal states were in the ancient Greek world, federalism is a rare topic in undergraduate courses about the ancient Mediterranean. Common textbooks often pass over the existence of *koina* quickly.[6] The relative lack of attention is understandable, particularly for two prominent reasons:

1. Ancient Greek history courses tend to be very Atheno-centric due to the relatively high number of textual sources that survive from Athens versus other Greek city-states. The major exception is usually a chapter or module on Sparta. However, these two most famous cities of the Greek world—Athens and Sparta—were not members of *koina* before the coming of Rome.[7] Athens and Sparta had their own supra-civic networks of alliances (the so-called Delian and Peloponnesian Leagues), but they were structured differently. They did not have as formalised a 'constitution' (*politeia*) that connected members through shared privileges and obligations. Instead, they tended to concentrate power in the hands of the *hegemon*, through the formation of unequal alliances that tied members to Athens or Sparta but not necessarily to other *poleis* in the league.

2. Unfortunately, modern scholarship and ancient textual sources about ancient Greek federalism are not very accessible for undergraduate students, especially in

5 Famously Giovannini 1971 argued against the use of the term. See Corsten 2012 in *The Encyclopedia of Ancient History,* s.v. "koinon" in support. Walbank 1985 offered a defense of the term, and the framework of federalism has been applied in many subsequent studies, including Mackil 2013 and Beck and Funke 2015.

6 Particularly, I have in mind the frequently used Greek history textbook from Oxford University Press, *Ancient Greece: A Political, Social, and Cultural History* (and its brief version) edited by Sarah Pomeroy *et al*. As makes sense given his research interests in *koina*, Jeremy McInerney's new textbook, *Ancient Greece: A New History* (Thames & Hudson), offers a short description of the Boeotian federal state (306).

7 Sparta joined the *koinon* of the Achaeans, historically its enemy, in the second century largely due to Roman interventions in local politics. See for instance Polybius 23.17.5-18.5.

introductory classes. Much existing scholarship about Greek federal states is aimed at a specialist audience; it usually presumes advanced knowledge of Greek history, beyond Athenian and Spartan history, and a familiarity with Greek epigraphy (the study of inscriptions). Portions of ancient literary sources pertaining to federalism are also frequently difficult for students to comprehend, even when the sources are otherwise accessible to them. The ancient Greek historian, Xenophon, who we might expect to be a guide for ancient Greek federalism, touches on the topic only indirectly.[8] Meanwhile, the famous Greek historian Polybius came from a prominent Achaean family and writes about the *koinon* of the Achaeans more directly in his *Histories*. Sections of his writing about the Roman state are often assigned in undergraduate courses, and the excerpts could be expanded to include passages more directly related to the *koinon* of the Achaeans. However, the relevant sections involve complicated, obscure mythological and geographical references that overwhelm and stymy students. They get bogged down in these references and miss the big takeaways about how a *koinon* looked and worked.

Of course, textbooks cannot cover everything, nor can instructors. Yet, discussions of Greek federalism in undergraduate ancient history courses offer several benefits. Most importantly, such discussions help students to understand that Greek history is not limited to the histories of Athens and Sparta. They learn that other *poleis* and political models existed and were actually more the norm for the ancient Greek world.

Attention to *koina* can also help clarify key terms and historical developments that introductory textbooks and courses cover. For instance, undergraduates in survey Greek history courses usually encounter references to Thebes and its hegemony in the fourth century. However, they often do not learn about its historic dominance of the *koinon* of the Boeotians, which helped enable Thebes to rise to prominence, alongside and even above Athens and Sparta. Likewise, undergraduates in Greek and Roman history courses usually encounter references to the Achaean League and its importance in the second century. But, how many undergraduates really understand this term? In my experience as a student and instructor, textbooks introduce students to what the Achaean League did, but not what it was. Delving into the *koinon* and Greek federalism more fully enables students to understand how this key term compares to ones that appear similar (e.g., the modern term Delian League) and how it relates to contemporary historical developments. Particularly, knowledge of the *koinon* can help students understand better fourth to second century history, as the power of Athens and Sparta waned in the Greek mainland.

Finally, students are often fascinated by how ancient societies have influenced modern state forms. Especially in countries that align themselves with so-called 'western

8 See Beck 2001 about Xenophon and Greek federalism.

democracy,' such as Australia and the United States, public discourse tends to grant outsized importance to the influence of Athenian democracy and Roman republicanism on modern society. Introducing students more fully to Greek federalism can help expand discussions about the afterlife of ancient state forms in modern society. Afterall, so-called Founding Fathers of American government, such as Alexander Hamilton (now famous worldwide due to the eponymous musical), debated at length what lessons various *koina* offered to the fledgling United States. In one of *The Federalist Papers*, for instance, the *koinon* of the Achaeans serves as a model for promoting the necessity of a strong federal government.[9]

Why use coins?

Given these benefits of addressing Greek federalism more fully in the classroom, why are coins particularly fitting for doing so? The most important reason is that the medium is a familiar and tangible one for students. They are used to using coins in their daily life, and they are experienced viewers and consumers of them (although soon we may not be able to take this hands-on familiarity for granted). Given the choices that instructors have to make about what to cover, the relative accessibility of coins for students is a great advantage. As I mentioned, most existing scholarship on ancient Greek federalism is relatively technical and requires substantial background knowledge of Greek history. Much of this scholarship is daunting to a PhD student, and even faculty, let alone to an undergraduate. However, undergraduates generally know what a coin is, what its purpose is, and what is involved in its production. In my experience, when you ask undergraduates to define a coin, they fairly quickly produce Aristotle's three main characteristics of a coin: metal, weight, and stamp (*Politics* 1257a; See Appendix, no. 1). Students thus do not need much background information to engage with a coin, as they often do with literary texts or inscriptions.

Another advantage that coins have over other sorts of sources is the lack of a language barrier. Yes, the coins have legends on them and to understand them fully, it helps to know ancient Greek. However, ancient Greek federal coinages have minimal legends, and often students can guess at the information that they contain. Students familiar with Greek letters from fraternity and sorority life or maths and physics classes can frequently identify letters and sound out the legends, if encouraged to do so.

Most importantly, however, students are familiar with the idea of a federal coinage. For the purposes of teaching, the concept of a federal coinage can help link the ancient and modern worlds and help students comprehend the significance of what they are learning. Particularly, students in the United States and the European Union are used

9 For Alexander Hamilton and James Madison discussing the *koinon* of the Achaeans, see *Federalist Paper* 18. Lehmann 2015, 517-23 discusses the influence of Polybius' writings about Greek federalism on arguments of *The Federalist Papers.*

to handling a federal coinage in their daily lives. Although they may not think about it often, they already have knowledge about the types of cooperation and sorts of institutions that are necessary to produce a federal coinage. Educators can leverage this pre-existing knowledge in the classroom to generate curiosity about the ancient world.

It is not all about similarities though. Highlighting differences between ancient and modern federal coinages can help denaturalise or defamiliarise the ancient world. Comparing the ancient and modern can actually help students step outside of time and place and think about how differences can reflect realities of a premodern world that looked very different from today's, technologically and otherwise.

Anatomy of an ancient Greek federal coin

What do ancient Greek federal coinages look like? Generally, coin types associated with Greek federal states have similar designs that repeat on the obverse and/or reverse. Depending on the case, they can have markers of individual *poleis* that were members of the *koinon*. They also frequently have some indication of the name of the *ethnos* or ethnic group that assembled in the common political institutions of the *koinon*. I will continue to focus on the *koinon* of the Boeotians and the *koinon* of the Achaeans, but I would like to note that these are far from the only *koina* that have coinages associated with them. Other *koina* of the region, such as the Arcadian, Phocian, and Thessalian, also can be linked with coinages.

Figure 1 features an example of a coin associated with the *koinon* of the Boeotians. We can dissect the coin: on the obverse, we find a mostly circular object, which is in fact a shield. It is not unique to this particular coin type. In fact, this type of shield is commonly identified specifically as a Boeotian shield due to its frequent appearance on Boeotian coins during the sixth to fourth centuries. The vase on the reverse is more specific to Boeotian coins commonly dated to the fourth century, but again it is a common image that only varies slightly in appearance across types.[10] The legend BOIΩ, short for Boeotians (spelled fully as BOIΩTΩN on other coins), also repeats across types. What changes is the symbol above the vase. Here, it is a club, but similar coins feature other symbols, such as a bow or a bunch of grapes.[11] Numismatists are not sure what the symbols indicate. They hypothesise that some of the symbols could indicate

10 Early descriptions refer to the vase as an amphora, but the volutes of the vase mark it as more likely being a krater. The shape is similar to that of the Derveni Krater. I am grateful to Carmen Arnold-Biucchi for drawing this detail to my attention.

11 See Head 1881, 77-79 and Plate V, nos. 10-12 (Series 10, 338-315).

workshops or mints. Although the minting of Boeotian coins was frequently centralised at Thebes, other Boeotian *poleis* may have minted coins of this type.[12]

Fig. 1: Stater of Boeotia, Federal Mint.
Obverse: Shield; Reverse: Volute krater with club above; BOIΩ.
AR 12.07g. Harvard Art Museums 1.1965.1507.
Credit: Harvard Art Museums/Arthur M. Sackler Museum, Loan from the Trustees of the Arthur Stone Dewing Greek Numismatic Foundation. ©President and Fellows of Harvard College

What exactly makes this coin 'federal'? In reality, nothing concrete does. The ethnic suggests a connection with the Boeotian *ethnos*, but nothing about the coin proves the existence of federal institutions (a *koinon*). Groups could come together in a monetary union and cooperate in producing a common coinage, but they may not necessarily have been part of a broader federal state.[13] Greek numismatists have yet to reach overwhelming consensus about what qualities identify a federal coinage or what level of cooperation amongst *poleis* is necessary to declare a coinage 'federal.' Therefore, since 2017, a joint French-German project has been working on understanding better the concept and realities of a federal coinage in the ancient Greek world.[14]

For the purposes of the classroom, I will focus on coinages that can relatively securely be associated with a *koinon*. In these cases, beyond the existence of the coins, textual evidence exists for broader political, economic, and religious cooperation among *poleis* through a *koinon* during the period to which the coins are dated. Explicit references to the existence of a *koinon* most commonly occur in the fourth century or later, and

12 The club and other symbols show up on other Boeotian issues. See Schachter 2016, 46-47 on such symbols. In the case of the earlier Boeotian magistrate coins, he hypothesizes that such symbols might indicate workshops. Mackil 2013, 250 n. 45 points out that many of the symbols can be associated with Herakles or Dionysus. Since myth associates both with Thebes, Mackil proposes that the coins with such symbols were minted there. Some of the symbols are strongly associated with other *poleis* (e.g., Thespiae) and so they may be mint marks. See also Mackil 2015, 489.

13 On these phenomena, see Mackil and van Alfen 2006.

14 Grandjean (2021). Catherine Grandjean and Fleur Kemmers are the principal investigators for the project entitled "KOINON: Common currencies and shared identities. Understanding the structures and daily realities of Greek federal states through an analysis of coin production and coin circulation in the Aetolian and Peloponnesian Koina (fifth-first centuries BC)."

so the coinages we will look at also date to the fourth century or later.[15] For instance, the coin pictured above in Figure 1 dates to the fourth century, although the dating within this century has been a matter of scrutiny. Over the past 150 years, numismatists have shifted the dating of this series from the late fourth century to earlier in the same century. Recent arguments have dated the series to ca. 400-386 based on possible die links with other series.[16] This dating would make it contemporary with the account of the *koinon* of the Boeotians in the *Hellenica Oxyhrynchia* fragment (discussed in Section 1; see Appendix, no. 2).

Admittedly, the dating of coinages associated with federal states is often predicated on textual sources, such as the *Hellenica Oxyhrynchia*, so there is sometimes a circular argument lying behind the dating of the coins.[17] For instance, the dating of Boeotian coins often relies on assumptions about how the vacillating influence of Thebes within the *koinon* affected the appearance of coinages. In scholarship, these sorts of assumptions can create a problematic historical house of cards. In the classroom, however, these uncertainties do not need the neat solutions of the sort that experts seek in scholarship. Instead, especially with more advanced undergraduates or graduate students, instructors can point to such assumptions in the dating of these coins to increase students' skills working with ancient objects and to discuss the limitations to their potential as historical sources.

For the purposes of introductory classes, we can set aside these debates over the precise date of the series and proceed to considering how this coin can point to cooperation between *poleis*. This cooperation can lay the groundwork for discussions of federalism. So, what might cooperation entail in the case of minting a common coinage like the Boeotian one pictured above?

To organise such thoughts, I will return to Aristotle's requirements for a coin: metal, weight, and stamp (*Politics* 1257a). Regarding the first, *poleis* may have cooperated in sourcing metal in the context of a federal state. Individual Boeotian *poleis* would not necessarily have had constant access to precious metals, such as the silver of the coin above, to mint coins.[18] Boeotians did not have a local source of silver, as Athenians

15 On explicit references to a *koinon* most commonly beginning in the fourth century, see Larson 2010.

16 Head 1881, 73-79 dated the series to 338-315. Studies of the mid-twentieth century moved the series earlier to the 370s. More recently, an apparent overstrike of one of these coins with a Boeotian magistrate type has suggested that these coins were in circulation before and/or alongside the magistrate coins (Schachter 2016, 51). Therefore, the BCD Boeotia catalogue dated these coins to 395-387. Schachter 2016, 51 situates them more generally between the end of the fifth century and 386, when Sparta's enforcement of the autonomy clause of the King's Peace/Peace of Antalcidas led to the temporary dissolution of the *koinon* of the Boeotians.

17 On such difficulties, see Mackil and van Alfen 2006, 220.

18 Cooperation may have been even more necessary in the case of gold-based coinages, since Boeotia had no gold mines. See Gartland 2013, 25-32 on access to gold in Boeotia.

to the south did. They often took silver coins minted elsewhere and struck them with their own stamp.[19] By pooling resources, Boeotian *poleis* could mint on a larger scale than they could apart. Furthermore, ancient numismatists often associate large silver coins, like the one above, with state-related activities due to their relatively high value. An ancient Greek would not generally have paid for something at the local market with a silver stater. Instead, this coin might have been used to pay federal troops or to coordinate payments into the federal treasury.[20] Therefore, the metal of the coin can point to cooperation: both in the production and use of the coin.

Similarly, weight ties into cooperation. The Greek world did not have an overarching common standard for coins until after Alexander's conquests.[21] Therefore, minting coins on the same weight or standard could create a common economic zone that extended beyond the bounds of a single *polis*. The Boeotians generally minted on the Aeginetan standard. Having coins of the same value allowed coins to circulate more easily between *poleis*. The choice of the Aeginetan standard, which was associated with the island Aegina and was one of the most commonly used standards of the Peloponnese and central Greek mainland, might also indicate priorities in trading markets. Notably, other states surrounding Boeotia, including the Phocians, Opountian Locrians, and Thessalians, also used the Aeginetan standard, whereas Attica (the region of Athens), Boeotia's neighbour to the south, employed the Attic standard.[22]

Meanwhile, the stamp mattered. In ancient Greek, the term for stamp is ὁ χαρακτήρ, literally "character," and now numismatic terminology refers to the impression on the coin as its type. When the coins circulated, the stamp or type would identify the authority which guaranteed its value, and it would promote the authority's legitimacy to the people holding the coins. More than that, the stamp also offered an opportunity for putting forward an expression of group identity both to members inside that group and outside of it. Although minted on the same standard, the stamp distinguishes a Boeotian coin from a Thessalian one. Boeotians were seemingly the primary audience of Boeotian coins, since their coins largely circulated within Boeotia. However, when Boeotian coins did circulate outside of the region in the fourth century, they were almost always staters, the denomination of the coin above.[23] Boeotians who held these cooperative coinages may have been reminded of their common grouphood through

19 Schachter 2016, 55 on Boeotians commonly striking over other coins on the Aeginetan standard.

20 On the payment of federal troops as a potential factor in the minting of Boeotian coinages, see Mackil and van Alfen 2006, 223-24.

21 Even then, *poleis* and *koina* often continued to mint on a non-Attic standard. See Ashton 2012 for an overview of the coinages of the Hellenistic Greek mainland.

22 On the extent of the Aeginetic standard, see Psoma 2015. This chapter also discusses connections between Boeotian and Euboean coinages. Schachter 2016, 55 suggests that the Aeginetic standard may have been conducive to paying mercenaries during the Third Sacred War of the mid fourth century.

23 Mackil and van Alfen 2006, 230-31 and Schachter 2016, 50.

the symbolism, whereas those from other regions might have learned about their neighbours through this medium. In such ways, the stamps of coins can raise questions about group identity, both its articulation and promotion. Moreover, technical aspects of cooperation can also lie behind the stamp. How does a group of *poleis* come up with a common design and, if there are multiple mints, then how do they keep consistency across mints? In the ancient world, such questions raise the possibility of traveling die cutters or even the sharing of physical dies for stamping common coinages.

In such ways, coins like the ones above help us to start to think about cooperation and identity in the context of a supra-civic state. In the next section, we will think in more depth about such connections. Before moving on, however, I should note that other coinages of the Boeotians could also help generate discussion in the classroom. For instance, there are coins associated with Thebes, which look very similar to the one pictured and which are possibly contemporary with it, but which feature letters indicating the magistrate who oversaw their production. Sometimes, we can identify this magistrate with someone who served as Boeotarch, or leader of the Boeotians: most famously Epaminondas.[24] Coins dated a century later, which feature the name of the *ethnos* and one of its most important gods, Poseidon, standing beside a Boeotian shield, also offer opportunities for discussion.[25] Viewers could draw connections to dynamics of the regional cultic community, especially the importance of the sanctuary of Poseidon at Onchestos for the Boeotians.[26] Although I will be focusing on Achaean coins in the next section, these other Boeotian issues can also be used to raise the sorts of discussions outlined.

Sample lesson plan with Achaean coins

Here is an example of how students can draw on their pre-existing knowledge of modern federal coinages to decode an ancient federal coinage of the sort introduced in the previous section. Since I have already dissected a Boeotian coin, I will introduce Achaean coins in this section. Below are images of three coins associated with the *koinon* of the Achaeans (Figs. 2-4). They date to either just before the Achaean War of 146 or to the first century after the defeat of the *koinon* by Rome.[27] They will be the subject of the sample lesson.

24 On these Boeotian magistrate coins, see Hepworth 1998; Schachter 2016.

25 For examples of most Boeotian coins, see Head 1881. For an overview accessible online, see Snible and "Wild Winds".

26 On the importance of the sanctuary of Poseidon at Onchestos for the Boeotians, see Mackil 2013, 163-67.

27 The dating of these issues is controversial. See the end of Section 5 for more information about their dating.

Fig. 2: Hemidrachm of the Achaean League, Aegira. AR 2.11g. Harvard Art Museums. 1976.79.1148
Credit: Harvard Art Museums/Arthur M. Sackler Museum, Unspecified Collection.
©President and Fellows of Harvard College

Fig. 3: Hemidrachm of Achaean League, Patrai. AR 2.38g. Harvard Art Museums 1.1965.1844
Credit: Harvard Art Museums/Arthur M. Sackler Museum, Loan from the Trustees of the Arthur Stone Dewing Greek Numismatic Foundation. ©President and Fellows of Harvard College

Fig. 4: Hemidrachm of Achaean League, Elis. AR 2.33g. Harvard Art Museums 1.1965.1846
Credit: Harvard Art Museums/Arthur M. Sackler Museum, Loan from the Trustees of the Arthur Stone Dewing Greek Numismatic Foundation. ©President and Fellows of Harvard College

The most ideal situation is to teach with physical specimens of these coins in the hands of students. Ancient coins are durable and highly tactile. When students hold the coins in their hands, they can use most of their senses, especially touch, to perceive critically and not just view critically the coins.[28] For instance, holding a coin enables a student to comprehend more immediately the size of these coins and to feel their weight. Notably,

28 On material culture pedagogy and critical perception, beyond critical viewing, see Sienkewicz 2013.

the Achaean coins pictured here are much smaller and lighter than the Boeotian stater included above. This information is difficult to discern from photos, but it is important for considering the possible contexts in which people used and encountered these coins. Larger coins, like the Boeotian stater, likely would not have been as prevalent in daily life, but these smaller Achaean coins could have been used for more quotidian commercial purposes.

Of course, most instructors do not have access to a teaching collection, let alone one that includes these often-overlooked coins. New technologies, such as 3D printing, can help bring examples of these coins into the classroom setting in a more tactile way at a relatively low cost. A 3D-printed coin can help engage more senses beyond sight and aid students in comprehending the dimensions of a coin. However, standard materials used in 3D printing are often much lighter than the metal used to mint a coin. 3D-printed coins, therefore, fall short regarding one of the primary characteristics of a coin, unless a heavier material can be used.

More immediately, simpler techniques can be effective for increasing student engagement with ancient coins. For the purposes of making this lesson possible in any classroom, I will focus on more low-tech methods of engagement in this sample lesson and assume that the coins are being introduced through images such as those included here. This lesson plan can also work well in an online teaching environment. Instructors using Zoom or similar platforms for synchronous online classes can guide students in decoding these coins using screenshare and annotation features. The lesson can even be adapted to asynchronous class sessions using a tool, such as VoiceThread or Perusall, that allows students to annotate an image as a group.

I usually facilitate this sort of lesson as an adaptation of a 'naïve task.' This pedagogical approach starts from the premise that students do not need specialised information about a topic in order to learn from doing something related to that topic.[29] Given this approach, I generally do not assign any advanced reading specifically about the coins, and instead I present them to students during class as unfamiliar, mysterious objects, which we will analyse together. The goal is not to have students demonstrate mastery of these coins. Instead, it is to activate their curiosity and to encourage them to ask questions about these objects based on what they have learned so far in the course and what connections they can draw from personal experience handling coins.

The first step is for students to identify what they see on the coins. In my experience, the biggest stumbling block, when introducing students to these sorts of coins, is the level of detail that they contain. Students look at them and become overwhelmed by the small details (even when they are able to hold the physical specimen in their hands). How can

29 Supiano 2018.

an instructor encourage them to engage with the coin, especially in a photo, and start to tease apart these small details?

Personally, I have had great success with asking students to draw these coins. Drawing is a simple but effective way to help students break down a coin type into its constituent parts. It helps students engage more senses than sight in the absence of holding a physical coin. For instance, if they simply look at the coin of Aegira (Fig. 2), they may give up and ignore the intriguing symbol at the top of the reverse of the coin. However, when they start to draw it, they may slowly ascertain from the motion of their hand and the decisions that they make as they draw that it is the front of an animal. Further examination of the coin and their drawing might lead them to the realisation that it is a goat. Another benefit of drawing is that it is a personal activity that involves every student in the classroom. Instead of one or two particularly invested students telling the others what they see, all students can begin to decode the coin for themselves.

Once students have drawn the coins and started to decode the various symbols, you can ask them to look for patterns. What is the same on each coin? What is different? They will likely identify the following similarities: the head of someone on the obverse and the general type or design of the reverse (especially the alpha-chi monogram in the centre and surrounding wreath). They will then likely note the various symbols and letters surrounding the central motif on the reverse as the major differences between the coins. On the coin of Aegira (Fig. 2), the symbol would be the forepart of the goat. After drawing the coins, they might have a dawning realisation that the symbol beneath the monogram on the coin of Patras (Fig. 3) is a dolphin (often they at least identify it as some sort of marine animal). In my experience, they will remain puzzled about the symbol beneath the monogram on the coin of Elis (Fig. 4), but they will be more curious about it after drawing it. Then, they are more invested when someone reveals that it is a thunderbolt. Depending on the learning objectives, an instructor might choose to spend more time on these symbols. Obvious differences between how ancient Greeks and people today depict dolphins and thunderbolts can raise questions about the standard representation of animals and objects across time and place. They can help students comprehend the 'foreignness' of these coins, despite their seemingly immediate familiarity, and prompt them to step outside of their own societal context.

Next, the instructor can prompt students to think about why these similarities and differences exist. Here is where their pre-existing knowledge of federal coinages can come in handy. They are used to handling federal coins with a common obverse and a varied reverse. They implicitly know that the common features of the coinage can help identify the federal entity and that the variations between different coins in the series can help identify different members of the federation. American students are familiar with this dynamic from U.S. quarters, while European students are familiar with the dynamic from euro coins. In this instance, they often identify the head on the obverse, the AX monogram (the first two letters of the name of the *ethnos*: Achaeans) and wreath on the reverse with the federal authority. They often postulate that the head on the obverse is that of a god important to the group minting the coin. Indeed, in this case, the head appears to be that of Zeus, and one of the most important common sanctuaries for the Achaeans was the sanctuary of Zeus Amarius near Aegium.

Furthermore, based on their familiarity with modern federal coinages, they tend to understand that the different features of the reverse have connections to the identity of members of the federation. For instance, the reverse of the U.S. state quarter for Pennsylvania features an outline of the state and its motto, among other symbols. Similarly, the reverses of modern Greek euro coins feature famous Greek politicians and other designs that evoke a Greek past, including an Athenian drachma design (1 euro coin) and a depiction of the Greek myth of Europa (2 euro coin). Drawing on students' familiarity with this dynamic, you can ask them to hypothesise about how the *poleis* are identifying themselves. Possible takeaways for each coin:

> Aegira (Fig. 2): The forepart of a goat relates to the identity of the *polis*, since it seems to be a play on words. The name of the city-state resembles the ancient Greek word for goat (αἴξ; genitive: αἰγός).
>
> Patras (Fig. 3): The dolphin suggests an association with maritime activities. Patras is located on the northwestern coast of the Peloponnese, and it was a major port near the entrance to the Gulf of Corinth.
>
> Elis (Fig. 4): The thunderbolt is often connected with the god Zeus. Elis oversaw the sanctuary of Zeus at Olympia, where the famous Olympian Games took place.

Students are usually more lost when it comes to the letters that surround the Achaean monogram. In this regard, they are not alone. Some letters seem to further identify the *polis* member, but what the remaining letters indicate often remains a mystery even to scholars. Perhaps the letters indicate the name of the magistrate who oversaw the minting. The mystery of these letters offers students an opportunity to engage in the sort of argumentation that scholars do. Their educated guesses are often as good as ours. The fact that there is no incorrect answer can grant students agency in the interpretation and can democratise the discussion by evening the playing field between students with more or less background in the ancient world.

Such similarities and differences between the coins can then lead into broader discussions of the concept of a federal coinage. As previously mentioned, this concept is debated in the scholarly community, but students can draw on their knowledge of modern federal coinages to raise and debate the sort of questions that scholars ask about *koina* and their associated coinages. Possible discussion questions include the following:

1. What did you need to share in order to produce this sort of coinage?

   Possible takeaways: *Poleis* needed to share natural resources, either available locally or imported, such as the metal used to make the coins. Similarities in the design of the coins may point to the sharing of physical dies for striking the coins or possibly the sharing of artists for producing the dies.[30] Instructors could ask students to compare what resources modern states share and how they do so in today's society in order to produce a federal coinage.

2. What sorts of cooperation did *poleis* engage in within a *koinon*?

   Possible takeaways: Students can point to economic cooperation and even a common economic zone amongst the members due to the similar size and weight of the coins. Students may bring up religion too, especially if they pay attention to the head of Zeus on the obverse of the Achaean coins.[31]

3. Why might a *polis* have wanted to cooperate with other *poleis* in these ways?

   Possible takeaways: Perhaps a *polis* wanted to facilitate the buying and selling of goods and services beyond its own territory. Maybe cooperation could provide protection in the case of external threats, such as war, especially against larger *poleis*. Cooperation within a *koinon* could generally help a *polis* decrease its exposure to risk. However, economic incentives and external threats cannot fully explain why a group would mint a common coinage.[32] These *poleis* had some sense of belonging to a common ethnic group that could lay the groundwork for such cooperation.[33] Coins can then further reinforce this sense of grouphood, especially given how portable and tangible they are. Ultimately, students could compare what motivates and reinforces federal bonds in modern contexts.

4. What was the balance of power between an individual *polis* and the *koinon*?

   Possible takeaways: The level of personalisation of each Achaean coin by *polis* may lead students to theorise that the autonomy of members was valued within the *koinon* of the Achaeans. Comparatively, the relative standardisation and lack of obvious civic identifiers on Boeotian coinages could point to a more hegemonic federal government (often under the leadership of Thebes), or at least the projection of one. Indeed, Boeotian coinages stand out from other cooperative coinages regarding the

30 On this sort of cooperation in the minting of Achaean coins, see Grandjean 2007.
31 See Mackil 2013 for a thorough discussion of what was shared among members of a *koinon*.
32 On economic incentives not being sufficient, see Mackil and van Alfen 2006, 221.
33 Mackil 2012 is a relatively accessible introduction to reasons for cooperation.

extent to which their minting was concentrated in one *polis*, Thebes.[34] This city-state also tended to dominate the political institutions of the *koinon*. Comparatively, more variation in Achaean coinage, such as the symbols reflecting the identity of member *poleis*, projects the appearance of a true "alliance of independent cities."[35] In more advanced classes, students can relate these patterns to the general importance of the concept of *autonomia* (autonomy) within the Greek world. Definitions of the *polis* tend to stress autonomy, possibly overly much. Therefore, discussions of how real versus rhetorical a *polis*' autonomy was within a federal structure can help students refine their fundamental understanding of a *polis* in the ancient Greek world.

Students can also think about whether their conclusions reflect visual rhetoric or reality. Comparison to various modern federal structures with different levels of centralisation, such as the U.S. federal system versus the European Union, and their coins can help students do so. Modern parallels help students to understand that the balance of power in one federal structure can look different from that of another. They can also prompt the realisation that the balance of power within a federal state often is a matter of debate and contention, instead of a fixed reality. Students can consider whether or not we can glean the relative centralisation of the United States or European Union from their federal coinages.

5. How successful do you think coins were in communicating a collective identity? Did coins help people know that they lived within a federal state and how much did they care about the version of their collective identity evidenced in the coin?

   Possible takeaways: In asking such questions, instructors might prompt students to reflect on how often they actually look at coins in their pockets, whether or not they know the symbol on the back of their country's coins, and whether or not the symbols mean anything to them. Such reflections can lead into broader discussions of the relatively high prevalence of images in today's society, which relies heavily on easily accessible communication technologies such as the Internet and smartphones. They can also raise discussion of how we take birds'-eye-view maps, available at our fingertips, for granted in the modern world. Comparatively, highly portable and tactile objects such as coins would have been one of the most common and immediate ways that those living in the ancient world learned about the places around them.

   These reflections can also lead into discussion of differences in what ancient and modern societies deem important to put on a coin and what that can reveal about a society. Modern initiatives to diversify who is represented on a country's currency (e.g., replacing Andrew Jackson with Harriet Tubman on the $20 bill in the United

34 Mackil and van Alfen 2006, 229.
35 Thonemann 2015, 74.

States; Jane Austen on the ten pound note in the United Kingdom) can help students to grasp the continued importance of images on money.

As a final note, graduate students, in particular, could engage with issues of dating these coins. Traditionally, Achaean coins had a *terminus ante quem* of 146, due to assumptions that the *koinon* did not mint any coins after its disbandment at the end of the Achaean War. However, prominent numismatists have challenged this assumption, especially due to evidence from major coin hoards, and have re-dated the last Achaean issues to the first century. The debate over the dating of these coinages still often divides numismatists.[36]

Possible connections to Greek and Roman history courses

When might it make sense to incorporate a lesson such as this one? In this section, I explore how coins introduced in the previous sections might be included in typical ancient Greek and Roman history courses.

1. An activity with Boeotian coins can be included in survey ancient Greek history courses, especially through integration of a case study about Thebes. For instance, in my introductory Greek history course, I include a week about Thebes, with a focus on the fourth century, after case studies of Sparta and Athens in the sixth to fourth centuries. Boeotian coins serve to introduce students to the broader federal history of Boeotia and Thebes. The students enjoy learning more about the Greek world beyond Athens and Sparta, since they feel that they are getting a "peek behind the curtain" of traditional narratives of Greek history. They also leave the course with a greater appreciation of the political diversity of the ancient Greek world and a better understanding of the trajectory of Greek history between the Peloponnesian Wars and conquests of Macedon.

2. An activity with Achaean coins, such as the one delineated in the previous section, is most naturally at home in Greek history courses that address the Hellenistic period and/or Roman history courses that track the rise of Rome as an empire. Major Greek history textbooks now proceed through the second century and beyond.[37] Students therefore encounter the "Achaean League" and its role in the Roman conquest of the Greek mainland. Roman history courses of both the Republic and Empire also often cover this period of history. Introducing students to the coinage of the *koinon* of the Achaeans helps students of both Greek and Roman history to comprehend better

36 The downdating was originally proposed by Christof Boehringer and later taken up by Jennifer Warren. Warren 1999 provides an overview of the controversy. See also Warren 2007, viii and 111 and Boehringer 1991, 1997, and 2008. Additionally, Walker 2008 provides a thorough overview of the arguments on both sides.

37 For instance, the most recent editions of Oxford University Press' textbook series *Ancient Greece: A Political, Social, and Cultural History*, edited by Sarah Pomeroy *et al*.

this key term. As a further advantage, it helps stress to students of Roman history the Greek-ness of the world that Rome was moving through in the second century.

Conclusions

Students are experienced viewers and consumers of coins, unlike most other media surviving from the ancient world. Because of this familiarity, with more advanced topics like Greek federalism, coins can prompt students, even those without a background in the ancient world, to engage relatively quickly with major scholarly questions and debates. Better-known coins commonly grace lecture slides as illustrations of mythology, lost monuments (e.g., coins depicting the lighthouse of Alexandria), famous individuals, and significant events (e.g., Ides of March coins). Comparatively, the sorts of ancient Greek federal coins presented in this article receive relatively little attention. However, engaging students in critical perception of such coins can help them expand their knowledge of Greek history beyond the bounds of Athens and Sparta. These coins offer a wealth of details, and they can lead into important conversations about the realities of ancient Greek states and how historians study them. While examining ancient Greek federal coins closely, we can step outside of our modern mindsets and place ourselves in the position of ancient individuals who held these coins in their hands.

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Appendix: relevant primary sources

1. Aristotle, *Politics,* 1257a

"For the natural necessaries are not in every case readily portable; hence for the purpose of barter men made a mutual compact to give and accept some substance of such a sort as being itself a useful commodity was easy to handle in use for general life, iron for instance, silver and other metals, at the first stage defined merely by size and weight, but finally also by impressing on it a stamp in order that this might relieve them of having to measure it; for the stamp was put on as a token of the amount."

Rackham, H. transl. (1932) *Aristotle: Politics.* Loeb Classical Library 264. Cambridge.

2. *Hellenica Oxyrhynchia,* 16.3-4

"They continued to run their internal affairs in this way, but Boeotian affairs were managed in the following way. All who lived in that area were arranged in eleven divisions and each of these provided a Boeotarch as follows. Thebes contributed four (two for the city, two for Plataea, Scolus, Erythrae, Scaphae, and the other places previously linked to them in one political entity but at that time subject to Thebes); Orchomenus and Hysiae provided two Boeotarchs; Thespiae with Eutresis and Thisbae provided two; Tanagra one; and Haliartus, Lebadea, and Coronea provided another whom each of the cities sent in turn; and in the same way one came from Acraephnium, Copae and Chaeronea. In this way the divisions returned their magistrates. They provided sixty councilors per Boeotarch and they paid their daily expenses. For the organization of the army, each division had to provide about one thousand hoplites and one hundred cavalry. To put it simply, depending on the number of its magistrates, each community shared in the common treasury, paid its taxes, appointed jurymen, and shared equally in public burdens and benefits. This was the constitution of the whole people, and the council and the common assemblies of the Boeotians sat in the Cadmea."

McKechnie, P. R. and S. J. Kern, (1988). *Hellenica Oxyrhynchia.* Warminster.

3. On the Achaeans, see especially Polybius, *The Histories,* 2.38-45

4. For an example of the reception of *koina* as models for modern states, see *The Federalist Papers*, No. 18.

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In this article, I have aimed to set out a toolkit that can lower the barrier of entry for instructors interested in bringing Greek federal coins into the classroom, either physically or virtually. To further this end, I have organized the sources cited in this article into a more expansive list of resources organized by topic, instead of a traditional bibliography.

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Coinage and literature, two complementary approaches to the transformative aftermath of the First Punic War[1]

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Abstract

Latin literature and Roman coinage can only be fully understood in the frame of the constant dialogue between Roman tradition and that of central and southern Italy in the course of the third century. Having secured their control over the central and southern part of the Italian peninsula in the third century BCE, the Romans faced the problem of having to define what was 'Roman,' especially in connection with the emergence of the provincial system represented by Sicily and then Sardinia. The creation of a literature and a coinage of Roman production were both pivotal in this process of self-definition. Both literature and coinage originated in the middle ground between Greek and Roman tradition that characterised the end of the fourth and the third century BCE. At the same time, literary texts and numismatic sources concur in indicating the aftermath of the First Punic War as being a transformative moment for the emergence of Roman identity. 240, the year after the end of the First Punic War, was thus a semantically ideal starting point for both literature and coinage, as Rome had become by then a Mediterranean superpower, whose literature and coinage, though grounded in Greek tradition, began to present a new language.

Keywords

[First Punic War] [Latin Literature] [Roman identity] [Andronicus] [Naevius] [Aes Grave] [Aes Rude] [currency bars] [Campania] [Tarentum]

In the course of the third century BCE, and more specifically around 240, something changed dramatically for Rome, when it simultaneously established an empire and a literature.[2] After the First Punic War, the Romans faced the problem of having to

1 I wish to thank Liv M. Yarrow, who shared with me drafts of her then unpublished *The Roman Republic to 49 BCE: Using Coins as Sources* and other unpublished manuscripts.

2 Cowan 2015, 63-64. Literature in this context is intended as "a convenient shorthand for poetry (including drama) and prose genres (primarily historiography), without wishing to assert any primacy of writing over performance, or indeed of assuming that a precise conceptual category corresponding to the modern word existed in Graeco-Roman antiquity" (Cowan 2015, 63 n.1). See also Goldberg 2005 for a discussion of the term. All dates in this article are BCE unless otherwise indicated.

actively define Rome (and Italy) in connection with the emergence of the provincial system represented by Sicily and then Sardinia.[3]

The creation of a coinage minted in Rome was pivotal in this process of self-definition, as coinage can be considered "the most deliberate of all symbols of public communal identity."[4] Of course, coins can be produced for a variety of reasons.[5] Minting efforts at the hands of the cities allied to Rome had supported Rome's campaigns well before 240, but the years after the First Punic War seem to be a transformative moment for Roman coinage. Suffice to say that after 240 the Roman mint began to issue its own silver coinage, instead of relying on the Campanian mints for its production.[6] In these years there was a remarkable transition from silver coinage produced *for* Rome, to the one produced *in* Rome. *Mutatis mutandis*, the First Punic War and its aftermath dramatically changed the production patterns of Roman bronze coinage. In the same way, the beginning of Latin literature in 240 marks a fundamental watershed in Roman culture, whose pivotal importance did not escape Roman intellectuals in the centuries to come.[7]

Literary texts and numismatic artefacts – two complementary and deeply interrelated heuristic tools to better understand Roman civilization – thus concur in indicating the aftermath of the First Punic War (specifically, 240) as a transformative moment for the emergence of Roman identity. Through the dialogue between literary texts and numismatics, this paper aims to investigate the conditions that made the aftermath of the First Punic War such a transformative moment for what was perceived as 'Roman'.

The integrated use of these two resources can greatly enhance the understanding of so complex an age for students of Roman history, but not only. In the words of H. Langford Wilson, a pioneering Professor of Classics at John Hopkins University at the end of the nineteenth century, "nothing has more power to attract and hold the attention of students, to awaken and sustain their enthusiasm, than the constant presence of the tangible remains of antiquity, the actual work of Greek and Roman hands."[8]

Even when material evidence from Antiquity cannot be held in one's hands, it nevertheless represents a reminder that the study of Roman history is not a mere intellectual abstraction, but serves the ultimate goal of revealing the flesh and blood of men and women that once were. The more complex an historical period is, the more teachers and students need to be reminded of this ultimate goal, and how the use of

3 For the creation of Italian identity see Carlà 2017, esp. 164–74.
4 Millar 1993, 230. For the relationship between coinage and identity see Howgego 2005.
5 Howgego 1990; Hollander 2007; Bernard 2018.
6 For the most updated summary for the chronology of early Roman coinage see Bernard 2017 reviewing Coarelli 2013; Burnett and Crawford 2014.
7 Cowan 2015 (with bibliography).
8 Harry Langford Wilson, Professor of Classics, Johns Hopkins University, as cited by Olcott 1908, 206.

material evidence – coins specifically – can contribute to the understanding of events and thoughts distant in time and space.

1. The birth of Latin literature

1a. A disputed chronology

According to Cicero,[9] Livius Andronicus, allegedly a Greek freedman from Tarentum,[10] staged his first play in Rome in 240, thus setting the official starting date of Latin Literature. Cicero chose to dismiss Accius' testimony, according to which Andronicus first came to Rome in 209 and represented his first drama in 197.[11] Livy, who states that Andronicus composed a *partheneion* to Juno for M. Livius Salinator during Salinator's consulship in 207, adds that Livius is remembered as the first one to have created theatrical dramas with a plot in Latin.[12]

The chronology suggested by Cicero, at least as it has been interpreted by part of contemporary scholarship,[13] would have Andronicus leaving Tarentum already in 272, producing his first drama more than thirty years later, finally composing the *partheneion* quoted by Livy almost seventy years later.[14] Such a long stretch of years might be difficult to accept, as no ancient source makes any reference to the capture

9 *Brutus* 72: *hic Livius (sc. Livius Andronicus) [qui] primus fabulam C. Claudio Caeci filio et M. Tuditano consulibus docuit anno ipso ante, quam natus est Ennius post Romam conditam […] quartodecimo et quingentesimo.* "Livius was the first one to write a *fabula* (sc. a play), in the year, when Gaius Claudius, son of Caecus, and Marcus Tuditanus held the consulship, one year before Ennius was born and five hundred and fourteen years after the founding of Rome" (Transl. J. Henderson).

10 Hier. *chron. a Abr*. 1829/30 (= 188/187) Helm 1956, 137: *Titus (sic!) Livius, tragoediarum scriptor clarus habetur. qui ob ingenii meritum a Livio Salinatore, cuius liberos erudiebat, libertate donatus est.*

11 Cic., *Brutus* 72-73: *Accius autem a Q. Maximo quintum consule captum Tarento scripsit Livium, annis XXX post quam eum fabulam docuisse et Atticus scribit et nos in antiquis commentariis invenimus, docuisse autem fabulam annis post xi C. Cornelio Q. Minucio consulibus ludis Iuventatis, quos Salinator Senensi proelio voverat. In quo tantus error Acci fuit, ut his consulibus XL annos natus Ennius fuerit; quoi aequalis fuerit Livius: minor fuit aliquanto is, qui primus fabulam dedit, quam ei, qui multas docuerant ante hos consules, et Plautus et Naevius.* "Accius, however, stated that Livius was taken captive from Tarentum by Quintus Maximus in his fifth consulship, thirty years after Livius had produced his first play, according to Atticus, whose statement I find confirmed by early records. Accius goes on to say that Livius produced his first play eleven years after the date (of his capture) in the consulship of Gaius Cornelius and Quintus Minucius at the *Ludi Iuventatis*, which Livius Salinator had vowed at the battle of Sena. In this the error of Accius is so great that in the consulship of these men Ennius was already forty years of age. But suppose that Livius was his contemporary: it will appear then that the first one to produce a play at Rome was somewhat younger than the two who had already produced many plays before this date, Plautus and Naevius" (transl. J. Henderson).

12 Livy 27.37.7 (*partheneion* in 207); 7.2.7: *Liuius post aliquot annis, qui ab saturis ausus est primus argumento fabulam serere.* "Several years later Livius for the first time abandoned the loose satyrical verses and ventured to compose a play with a coherent plot" (transl. F. Gardner Moore).

13 An example of this interpretation is in Rocca–Sarullo 2012, 134–36. For a standard interpretation of Livius' chronology see Weiss 2004.

14 Cicero's sources for his chronology were quite likely Atticus (see for this Caratello 1979, 12–20) and Varro, *De poetis* (Dahlmann 1963; Welsh 2011, 39-47). Varro's sources are less precisely identifiable: Wiseman 2015, 47. For a rebuke of Accius' chronology with previous bibliography see Welsh 2011, esp. 32–38.

of Tarentum following the War against Pyrrhus.[15] However, while admitting that the date of Aristonicus' first play is a matter of controversy,[16] Cicero vehemently rejects Accius' chronology, according to which Livius would have been captured in Tarentum in 209 and produced his first play at Salinator's votive *Ludi Iuuentatis* in 197. Cicero's conclusive argument was that, in case Accius' chronology were to be accepted, Ennius would appear to have been the first poet of Latin literature, instead of Livius.[17]

Why was it so important that Livius was bestowed this honour? Unlike Ennius, who was appreciated as "the second Homer,"[18] Livius was neither praised as an author nor as a model to be seriously imitated. The only merit for which Livius was actually acknowledged was that he brought literature to Rome.[19] In the same vein, Cicero compares Livius' *Odusia,* arguably his most lasting contribution to Latin literature, to a statue of Daedalus, remarking that it represented an absolute first.[20] In the same passage, he also discards Livius' dramatic works by saying that they are "not worth to be read a second time."[21]

A likely explanation for the apparent contradiction between Livius' alleged lack of artistic merits and his identification as the father of Latin literature lies in the fact that the point at stake is not his merit as an author, but in the crucial date of 240.[22] In the eyes of Cicero, the birth of Latin literature was inextricably bound to the end of the First Punic War.[23] This is explicitly stated by Gellius, who declares that Livius was the

15 For the details of the controversy and a philologically accurate reconstruction of Andronicus' chronology see Beare 1940; Welsh 2011, 39–50.

16 Cic. *Brutus* 72: *est enim inter scriptores de numero annorum controuersia.* "For there is a dispute among writers about the precise number of years [the date of Andronicus' first play]" (transl. A. Wessels).

17 *Brutus* 73.

18 Hor. *epist.* 2.1.50: *Ennius et sapiens et fortis et alter Homerus.* For the relationship between Ennius and Livius Andronicus see Sciarrino 2006, 462–69. Most recently, on the relationship between Ennius and Homer, see Gouvea 2019.

19 For example, the rhetorician Quintilian admits that Livius had introduced something, while also disqualifying him as a good poet. Quint. *Inst.* 10.2.7: *quid erat futurum si nemo plus effecisset eo quem sequebatur? Nihil in poetis supra Livium Andronicum [...] haberemus).* "Once again, what would have happened if no one had achieved more than the man he was following? We should have nothing in poetry better than Livius Andronicus" (transl. E.G. Butler).

20 Cic. *Brut.* 71: *nam et Odyssia Latina est sic tamquam opus aliquod Daedali.* Daedalus was likely a speaking name, to be associated with the Greek word for wooden statues (δαίδαλα, cf. Paus. 9.3). He was considered to be the first artist, the πρῶτος εὑρέτης of art works (Apollod. 3.14.8).

21 Cic. *Brut.* 71: (Livianae fabulae) *non satis dignae quae iterum legantur.* A similar assessment of Livius' poetic quality can be found e.g. in Hor. *Epist.* 2.1.61-75 (further *testimonia* on Livius Andronicus in Schauer 2012, 21-27).

22 Wessels 2015, 3-5.

23 Wessels 2015, 5-6; Cowan 2015.

first poet to stage a play after "peace with the Carthaginians had been made" (*pace cum Poenis facta*).[24]

1b. Rome and Tarentum, a fruitful though frayed cultural relationship

In the same text Gellius highlights the connection between Livius, and thus the beginning of Latin literature, and Greek culture by chronologically relating Livius' performance to the deaths of Sophocles, Euripides and Menander (Livius performed the *fabulae* 160 years after the deaths of Sophocles and Euripides, and 52 years after Menander).[25] By establishing a firm relationship between Livius and Greek authors, not only of Attic Tragedy, but also of Hellenistic Comedy, Gellius hints at the continuous line between the two cultures and implies that Roman drama found its rightful predecessors in Greek tragedy and comedy.

However, Cicero's text is even more specific than Gellius' for what concerns the Greek tradition that played a relevant role for the beginnings of Latin literature. Indeed, the only element from Accius' testimony Cicero accepts is the fact that Livius came from Tarentum.[26] The importance of this city of Magna Grecia in the Latin literary imagination is such that John Lydus, a sixth-century CE antiquarian, considers the contribution of the Tarentine poet Rinthon fundamental, even for Lucilius' satirical production.[27] Contemporary philology concurs in placing Rinthon's production between the late fourth and the early to mid-third century, likely a few decades before Livius' *floruit*.[28] Independent of the truthfulness of Lydus' claim, the point at stake here is the fact that, already in the Classical world, Tarentum was considered tightly related to the beginnings of Latin literature.[29]

At the same time, the relationship between Roman and Tarentine literary production was not one-sided. Tarentine authors, most notably Rinthon, included the Hellenised

24 *NA* 17.21.42–43: *pace cum Poenis facta consulibus <C> Claudio Centhone, Appii Caeci filio, et M. Sempronio Tuditano primus omnium L. Livius poeta fabulas docere Romae coepit post Sophoclis et Euripidis mortem annis plus fere centum et sexaginta, post Menandri annis circiter quint quaginta duobus.* [...] "when peace had been made with the Carthaginians and when the consuls were C. Claudius Centho, son of Appius the Blind, and Marcus Sempronius Tuditanus, the poet Lucius (!!!) Livius was the very first to put plays upon the stage at Rome, more than a hundred and sixty years after the death of Sophocles and Euripides and about fifty-two years after the death of Menander" (transl. J.C.Rolfe).

25 Wessels 2015, 6–7.

26 For a summary of the Tarentine cultural life between the end of the fourth and the mid-third century see Favi 2017, 58–63.

27 Lyd. *Mag.* 1.41: […] καὶ διαφερόντος τὸν Ῥίνθονα, ὃς ἑξαμέτροις ἔγραψε πρώτος κομῳδίαν·ἐξ οὗ πρώτος λαβὼν τὰς ἀφορμὰς Λουκίλιος ὁ Ῥωμαῖος ἡρωϊκοῖς ἔπεσιν ἐκωμώδησεν. […] "And especially Rinthon, who first wrote a comedy in exameter: taking inspiration from him the Roman Lucilius was the first one to write comedies in exameter." For the importance of Rinthon see Favi 2017, 63–112; Di Giuseppe 2020, esp. 407–409.

28 Favi 2017, 56–58 (with bibliography).

29 For the specific relationship between Tarentine poetic tradition and the beginning of Latin literature see Favi 2017, 112–17 (with bibliography).

version of Latin words in their works.[30] For example, Rinthon uses terms like κάλτιος, directly borrowed from Latin *calceus*[31] or κομάκτωρ, clearly deriving from Latin *coactor*.[32] The presence of Latin loanwords in Rinthon's literary production is mirrored by the epigraphic presence of Latinisms in contemporary inscriptions in the region.[33] The literary tradition and the linguistic attestations thus concur in showing the relevance of the linguistic and literary interaction between Rome and Tarentum in the course of the third century.

Moreover, the relationship between the beginning of Latin literature and southern Italian Greek culture is further highlighted by Suetonius, who stated that the "earliest teachers (Livius and Ennius) were Italian Greeks (*semigraeci*), who predominantly engaged in "interpreting the Greeks."[34] The first teachers 'in' and 'of' Latin language were thus not Roman citizens, but *semigraeci*.

It is also important to remark that Livius is either described as a former slave (*libertus*) or in lowly occupation as a private tutor (*praeceptor*) or an actor.[35] In the words of Sciarrino, "early Roman drama and epic were cultural expressions translated by non-elite and non-Roman individuals based on the manipulation of the different linguistic codes and song traditions belonging to each of these codes."[36] The fact that Livius is 'other' from the Roman elite allows Rome to take advantage of the Greek literary tradition, while at the same time distancing itself from the negative values still attached to southern Italian Greeks.[37]

30 Favi 2017, 82–83.

31 Favi 2017, frag. 5 K-A, esp. 157–59. The *calceus* was a flat-soled, usually hobnailed footwear, that entirely covered the foot and ankle, up to the lower shin. It was secured with crossed thongs or laces. It immediately qualified the individual wearing it as Roman citizen.

32 Favi 2017, frag. 7 K-A, esp. 167–68. The *coactor* was a tax collector.

33 E.g., the presence of the Latin term for 'herald,' *calator* (*Lapis Niger*, CIL I^2,1) on the caduceus MLM 1 Ta (from the Messapian city of Valesius), on which the following Messapian inscription is read: *Blatθihi kalatoras Baletθihi*, "of Blathes, herald from Valesius.' For the spreading of Latin in the Tarentine region in the course of the fourth – third century see Santoro 1988.

34 Suet., *Gramm.* 1: *Initium quoque eius mediocre exstitit, siquidem antiquissimi doctorum, qui iidem et poetae et semigraeci erant (Livium et Ennium dico, quos utraque lingua domi forisque docuisse adnotatum est), nihil amplius quam Graecos interpretabantur, aut si quid ipsi Latine composuissent praelegebant.* "The beginnings of the subject, too, were humble, for the earliest teachers, who were also both poets and Italian Greeks (I refer to Livius and Ennius, who gave instruction in both tongues at home and abroad, as is well known), did no more than interpret the Greeks or give readings from whatever they themselves had composed in the Latin language" (transl. M. Ihm).

35 *Libertus* and *praeceptor*: Hier. *chron. a Abr. 1829/30* (= 188/187) Helm 1956, 137. *Actor*, member of the *collegium scribarum histrionumque*: Festus, Lindsay 446–48. For the testimonia on this collegium see Crowther 1973.

36 Sciarrino 2006, 454.

37 Lindsay, 1913; Carlà 2017, 186–89 (with bibliography).

Still in the first century CE, Strabo describes the inhabitants of Tarentum as characterised by hubris, political instability, luxury, and decadence.[38] Valerius Maximus considers wantonness (*petulantia)* one of the characteristics of the town.[39] In the same vein, Livy states that "the Tarentine was no match for the Roman in courage, in arms, in the art of war, in bodily energy and strength."[40] This negative connotation of the inhabitants of Tarentum clearly derives from the accusations of indulgent living (τρυφή, *truphé*), already used in Greek literature against the Greek *poleis* (city-states) of southern Italy, first in reference to Sybaris,[41] and afterwards to Tarentum.[42]

However, Livius Andronicus *left* Tarentum and *chose* to write his literary works in Latin. He translated in Latin one of the Greek epic poems *par excellence*, the Odyssey. He not only translated a Greek poem in Latin, but adopted in it the Saturnian verse, tightly related to Italian tradition and, even more specifically, to the Roman elite.[43] Moreover, Livius 'culturally migrates' Greek concepts and mythological characters into the Roman cultural sphere.[44] Independently of its intrinsic literary value, Livius' work 'migrated' into the Roman cultural sphere of relevant elements of Greek literature, making tropes and themes of Greek literature relatable for Roman society. By doing this, he kickstarted something completely new, i.e., Latin literature. In the words of Sciarrino, "Poetic craftsmanship was distinct from and yet involved in the long-distance acquisitions that the Roman elite were now pursuing by war, and, from war, poetic craftsmanship drew force and meaning."[45]

38 Strab. 6.3.4.

39 Val. Max. 4.3.14a. Simon 2011, 391–94.

40 Livy 27.16.1: *non animo, non armis, non arte belli, non vigore ac viribus corporis par Romano Tarentinus erat. Igitur pilis tantum coniectis prius paene, quam consererent manus, terga dederunt, dilapsique per nota urbis itinera in suas amicorumque domus*. "The Tarentine was no match for the Roman in courage, in arms, in the art of war, in bodily energy and strength. Therefore, after merely throwing their javelins, they retreated almost before they came to blows, and slipped away along the familiar streets of the city to their homes and those of friends" (transl. F.G. Moore).

41 E.g. Ath. *Deipn*.518c–521f; Strab.6.1.13.

42 Ath. *Deipn*. 12.522d–e; 528a–d; Strab. 6.3.4. Lomas 1993, 10, 1997, 31–34; Barnes 2005, 25–28; Wallace-Hadrill 2008, 338–39.

43 For a recent reassessment of the Saturnian see Mercado 2012. For attestation of the Saturnian verse in *dicta* related to members of Roman aristocracy and epitaphs see for example Appius Claudius's *dicta* (5–6 Morel), the *Carmen Saliare* and the *Carmen Arvale*, the Scipionic elogia (*CIL* 1.29–30, *CIL* 1.32, *CIL* 1.33, *CIL* 1.34), the *elogium* of Atilius Calatinus (p. 7 Morel), the *tabulae triumphales* of acilius Glabrio and L. aemilius regil- lus (*GL* 6.265 Keil), and the inscription located in the temple of Hercules Victor in which the victory of L. Mummius at Corinth in 146 was commemorated (*CIL* 1.541). For a discussion of the topic see Sciarrino 2006, 457–59.

44 For a recent discussion of the linguistic choices of Livius Andronicus see Livingston 2004; Rocca–Sarullo 2012, 133–40 (with bibliography).

45 Sciarrino 2006, 459.

1c. The "maritime moment"[46]

Even more relevantly to his Roman audience, Livius' *Odusia* sang of Ulixes, a hero who travelled by sea and experienced the adversities of sea-faring. In the years of the First Punic War, Romans had experienced first-hand the dangers inherent in travelling by sea.

In 264, Roman armies under the command of the consul Appius Claudius crossed the Strait of Messina and entered Sicily. This event is narrated by the historian Florus, who remarks that these straits were not only characterised by the violence of their waters but were also notorious for Scylla and Charybdis, the mythical monsters that inhabited them.[47] Eleven years later, when the consuls Gnaeus Servilius and Gaius Sempronius found themselves grounded on the island of Meninx, off the Libyan coast, the historian Polybius reminds the readers that Meninx was formerly the land of the Lotus-Eaters.[48] These two episodes were constructed to mark the fact that in the course of the First Punic War, the Romans were faring the same course already charted by Odysseus.[49] Livius' *Odusia* was thus "a story well chosen to evoke Italy's unique ties to Odysseus' journeys and to speak of Roman wartime experience at sea."[50] Livius' Ulixes fears the sea in much stronger terms than his Homeric counterpart and his fears find perfect correspondence in the struggles of Rome at sea.[51]

Despite the fact that Rome had already fought naval battles,[52] the fleet preparation for the First Punic War is depicted as a first (*primum)* in Livy.[53] The creation of a navy in the course of the First Punic War is also seen as a pivotal moment in Polybius' account. The Arcadian historian describes the building of the Roman fleet as if the Romans never waged war by sea before.[54] Though not the first 'real' one ever built by the Romans, the Roman fleet in the First Punic War acquires the semantic value of a 'first' because it is through it that the Romans acquired a maritime empire. As T. Biggs puts it, "Polybius

46 For a definition of "maritime moment" see Leigh 2010.

47 Flor. 1.18.5: *Appio Claudio consule primum fretum ingressus est fabulosis infame monstris aestuque violentum.*
Scylla and Charybdis: Polyb. 34.2.12–3.11; Strab. 1.2.9, 14, 18, for Scylla and Charybdis, and 6.2.3 for the proximity of Charybdis to Messina. See also Verg. *Aen.* 3.410–32, 684–86; Plin. *HN* 3.89; Just. *Epit*. 4.1.11; Schol. Lycoph. *Alex.* 46.

48 Polyb. 1.39.1–2, cf. 34.3.12.

49 Leigh 2010, 265.

50 Biggs 2017, 352. For the relationship between Livius' *Odusia* and the First Punic War see Leigh 2010; von Albrecht 1999.

51 *Od.* frag. 12 Blänsdorf: *namque nullum / peius macerat humanum quamde mare saevum;/ vires cui sunt magnae topper confringent/ inportunae undae.* "For nothing torments a man worse than the savage sea; a man whose strength is great the shelterless waves will soon shatter" (transl M. Leigh). This passage is an adaptation of Hom. *Od.* 8.138–39, where Laodamas confronts the shipwrecked Odysseus. For a relevant comparison between the two passages see Leigh 2010, 275–76.

52 For Roman sea-fearing before the First Punic War see Leigh 2010, 266–67 (with bibliography).

53 Per. 16: *transgressisque tunc primum mare exercitibus Romanis aduersus Hieronem saepius bene pugnatum.* For the importance of firsts in the Livian *periochae* see Chaplin 2010.

54 Polyb. 1.20.13–14.

thus distorts the historical context of the scene to privilege its positive resonance and in turn produces an *aition* both for the fleet itself and for the Roman state as a Mediterranean power."[55] To reinforce the wonder at the Roman achievement, Florus states that the Roman fleet seemed to have been made "as if by divine assistance."[56] While it is impossible to trace back with certainty Florus' source for this passage, it certainly appears to be somewhat reminiscent of Naevius' *Bellum Poenicum*, where one of Aeneas' ships is said to have been built by Mercury.[57]

Naevius' *Bellum Poenicum*, an epic poem celebrating the bravery (*virtus)* of Roman armies, connected the recent historical past of the First Punic War with the mythical origins of Rome.[58] In the *Bellum Poenicum,* Aeneas' journey from Africa to Italy to first found Rome is inversely mirrored by the valorous deeds of the Roman soldiers, who sailed to Sicily and to Carthage to make Rome an empire. The battles with the sea of Aeneas and his kin are mirrored by the ones of Roman soldiers. According to his commentator Servius, Vergil derived all of Aeneas' speech to his men after the storm in *Aeneid* 1 from Naevius' poem.[59]

Naevius was thus the first one to have confronted Aeneas with a catastrophe at sea.[60] The fear of the sea is also recognisable in Anchises' invocation to Neptune on behalf of all the Trojans.[61] Not even the gods are spared fear of the sea, as it appears from Venus' prayer to Zeus on behalf of Aeneas after the storm that almost cost the hero his life.[62]

The epic narrative finds correspondence in historical reality. The fear of the sea is a central motive in the eulogy of L. Scipio, Roman commander in Sardinia and Corsica

55 Biggs 2017, 352.

56 *Ep*. 1 18.7: *ut non arte factae, sed quodam munere deorum conversae in naves atque mutatae arbores viderentur*.
For the relationship between ship-building and divine intervention see, most recently, Mac Góráin 2015, esp. 239.

57 Serv. Dan. *ad Aen*. 1.170 Thilo 5 Blänsdorf 7 5 Flores XVI): *novam tamen rem Naevius Bello Punico dicit, unam navem habuisse Aeneam, quam Mercurius fecerit.* "Naevius relates a novel thing in his Bellum Punicum, that Aeneas had one ship, which Mercury made" (Transl. T. Biggs).

58 For the latest critical edition of the *Bellum Poenicum* see Flores 2011 and 2014. For the relationship between myth and history in the *Bellum Punicum*, see Barchiesi 1962, esp. 224–93, 328–46; Häußler 1976, 113–20; Feeney 1991, 99–120, 250–69; Goldberg 2010; Gesuwald 2014.

59 Naev. *B Pun*. frag. 13 Blänsdorf = Serv. Dan. *ad* Verg. *Aen*. 1.198: *et totus hic locus de Naevio belli Punici libro translatus est*.

60 Leigh 2010, 274.

61 Naev. *B Pun.* Blänsdorf 9 5 Flores XI): *Senex fretus pietati deum adlocutus summi deum regis fratrem Neptunum regnatorem marum.* "The old man reliant on piety called upon the god Neptune, the brother of the highest king of the gods" (transl. M. Leigh).

62 Naev. *B Pun*. frag. 15 Blänsdorf = Varro *Ling*. 7. 51 (*patrem suum supremum optumum appellat*) and frag. 16 Blänsdorf = Fest. 306 L (*summe deum regnator, quianam genus odisti*) are joined by L. Mueller, and this wins the approval of Barchiesi 1962, 332, and of Blänsdorf himself. Note that the last two words of frag. 16 are transmitted as *genus isti* at Fest. 306 L and emended to *genus odisti* by Leo.

in 259/8, i.e., in the first years of the Punic Wars.[63] Lucius Cornelius is here lauded for having saved his fleet from a storm and thus *meritod* (deservedly) dedicated a temple to the Storms. As Ovid recalls in his *Fasti*, the temple to the *Tempestates* was dedicated after Scipio's fleet escaped a storm off Corsica.[64]

As a further clue of the tight relationship between epic narrative and historical reality in the *Bellum Poenicum*, Valerius Messalla, a commander who overcame the dangers of sea and brought his soldiers to victory is celebrated not only in the poem,[65] but also in the paintings of the *Curia Hostilia*, where the senators used to meet.[66] Furthermore, Naevius is said to have been a veteran of the First Punic War.[67] He thus experienced first-hand what his heroes, both mythical and historical, had suffered. As Leigh puts it,

> In the years of the First Punic War Roman landsman had, in fact, taken to sea, and had done so in quite unprecedented numbers. He now knew what it was to be an Odysseus, to be an Aeneas trapped in a storm. He may from this have concluded that it would be better not to repeat the experience. For now, however, he had had his maritime moment and his epic moment too.[68]

Lastly, it is important to highlight that Naevius, like Livius Andronicus, was not Roman, but Campanian, as made clear by his epitaph.[69] As in the case of Livius, Latin literature is indebted to a poet whose first language was not Latin. As will become clear in the second part of this paper, the Campanian region gave a fundamental contribution to Rome's rise to Mediterranean power in the years of the First Punic War and in its aftermath. Naevius' poem plays a significant part in this process, since it first showed the mythological justification and the necessity of Roman rise, while depicting the painful price paid by everybody involved in the process. Once again, his being 'other'

63 CIL I.2.2.9: *honc oino ploirume consentiont R[omane duonoro optumo fuise viro./ Luciom Scipione. filios Barbati/ consol censor aidilis hic fuet [apud vos. hec cepit Corsica Aleriaque urbe,/dedet Tempestatibus aede mereto[d.* "This man Lucius Scipio, as most agree, was the very best of all good men at Rome. A son of Barbatus, he was consul, censor, and aedile among you; he it was who captured Corsica, Aleria too, a city. To the Storms he gave deservedly a temple" (transl. M. Leigh).

64 *Fasti* 6.193–94: *te quoque, Tempestas, meritam delubra fatemur / cum paene est Corsis obruta classis aquis.* For the cult of the *Tempestates*, see also Plaut. *Stich.* 403; Cic. *Nat. D.* 3.51; Hor. *Epod.* 10.23–24; Verg. *Aen.* 5.772; Ziolkowski 1992, 162–64, 253–54; Lazenby 1996, 74.

65 Naev. *B Pun.* Blänsdorf 3 5 Flores IV: *Manius Valerius/ consul partem exerciti in expeditionem ducit.* "Manius Valerius the consul led part of the army on an expedition" (transl. T. Briggs). See also Barchiesi 1962, 394–95; Goldberg 1995, 79–80.

66 Biggs 2017, 360–62 (with bibliography).

67 Gell. 17.21.45 = Flores II = Strzelecki 44: *Cn. Naevius... quem M. Varro... stipendia fecisse ait bello poenico primo, idque ipsum Naevium dicere in eo carmine quod de eodem bello scripsit.* "Gnaeus Naevius... Varro says that he served in the First Punic War, and that Naevius himself said this in that poem that he wrote about the same war" (transl. M.Leigh).

68 Leigh 2010, 278.

69 Gell. *Ep.* 1.24. Gellius possibly encountered the epitaph in Varro's *De poetis*: see Dahlmann 1963, 65–68. For a linguistic study of this epitaph see Krostenko 2013.

qua non-Roman citizen gave him the freedom to depict the pain inflicted on its citizens (and non-citizens) by the military rise of the Roman *res publica*.

1d. Preliminary conclusions

The birth of Latin literature seems thus to be tightly connected to the Roman military conquests of the first half of the third century, most notably the First Punic War. This historical event not only made Rome a power to be reckoned with at the Italian and Mediterranean level, but also introduced the Roman collective imaginary to the dangers of seafaring, most famously represented by the peregrinations of the Homeric Odysseus and of the Trojan Aeneas.

Greek themes needed to be translated into Latin and adapted to Roman society and, in the case of Naevius, specific historical context. Ideal mediators in this process were thus the southern and central Italian poets Livius Andronicus and Naevius, non-Roman citizens, whose otherness gave them freedom of expression, otherwise unavailable to members of the Roman elite.[70] The importance of the chronological coincidence between their work and the First Punic War was so relevant that centuries later Roman authors were still trying to prove it. The same connection to warfare and to southern and central Italian roots proves relevant for the beginning of Roman coinage.

2. The beginning of Roman coinage

2a. Silver coinage for the Romans: enhanced monetary integration in Italy

In the introduction to this paper, I made the distinction between coinage *for* the Romans, a coinage not Roman in its appearance, but minted to address Rome's economic needs or needs created by the presence of Rome, and coinage *of* Roman production, directly minted in Rome. In the next pages I will argue that Rome did not produce coinage in any significant quantity until 240, relying instead on coinage minted by other allied cities, mostly Campanian.[71] In this respect, the end of the First Punic War represented a transformative moment for the monetary production of Rome, since after this year the coinage minted by the Roman mint began playing a significant role in the Italian circulation pool.[72]

In the course of the fourth century, several mints in southern Italy enjoyed an increased production, an extension of the geographical use of coinage and a growth in the production of smaller denominations.[73] The Campanian cities, which had started

70 Sciarrino 2006, 459.

71 For issues of funding the First Punic War, see Tan 2017, 93-117. Some of the mints included in this coordinated striking included Cora (*HN Italy* 343), Cales (*HN Italy* 434), Suessa (*HN Italy* 447) and Teanum Sidicinum (*HN Italy* 451–452); Yarrow 2021a, 34 Map 1.4. For the circulation patterns of these issues, especially relatively to the silver coinage issued in the name of the Romans see Burnett 2006.

72 Burnett and Molinari 2015, esp. 82–96.

73 Burnett 2012, 297–98 (with bibliography); Burnett 2005.

minting during the fifth century,[74] continued producing coins after their conquest by the Oscans and were joined in their minting effort by other communities with no Greek past. However, the use of the same dies on coins minted for different towns seems to suggest that the entire minting activity took place in Naples.[75] Since the early fourth century, the Neapolitan mint probably produced coins for the Samnitic towns of Allifae and Phistelia, as well (Fig. 1-2).[76]

Fig. 1. Campania, Allifae. Silver obol, ca. 325-275 BCE.
Obv. Laureate head of Apollo r.; [three dolphins] around. Rev.: Skylla r., holding sepia and fish; mussel below. Campana 2a;
HN Italy 460 (Bertolami, E-Auction 92, 2 Oct. 2020), lot 370). 10 mm. 0.58 g.

Fig. 2. Campania, Phistelia. Silver obol, ca. 325-275 BCE.
Obv. ΦΙΣΤΕ-ΛΙΑ Young male head facing, turned slightly to r. Rev. 8IƧTLYIƧ ('fistluis' in Oscan) Dolphin swimming to r., above barley grain and mussel shell.
HN Italy 613 (Leu Numismatik 6, 23 Oct. 2020, lot 28). 11 mm. 0.71 g.

74 Rutter 2001, 66–67 (Cumae); 68–71(Neapolis).

75 Crawford 1985, 26–28; Catalli 1995, 42; Cantilena 2000, 82–83; Rutter 2012, 135–36; Carlà 2017, 255-56.

76 Cantilena 1984, 86–90; Tagliamonte 2005, 222; 244; Scopacasa 2015, 222–23. Allifae: *HN Italy* 460–463. Phistelia: *HN Italy* 613–619.

Fig. 3. Campania, Neapolis. Silver didrachm, ca. 320–300 BCE.
Obv. Head of Mars l., wearing Corinthian helmet; traces of oak-spray behind. Rev. [R]OMANO on raised tablet below head and neck of horse r., ear of corn behind. *RRC* 13/1.
HN Italy 266 (ANS 1969.83.1, gift of E.R. Miles). 20 mm. 7.13 g.

Fig. 4. Campania, Neapolis. Silver obol, ca. 320-300 BCE.
Obv. Head of Mars r., wearing Corinthian helmet; behind, oak spray (?). Rev. Head of horse r.; behind, corn ear and before, ROMANO downwards. *RRC* 13/2.
HN Italy 267 (NAC 72, 16 May 2013, lot 396).10 mm. 0.66 g.

In the last years of the fourth century, the Campanian region was also responsible for the minting of the so-called 'Romano-Campanian' emissions, the first silver coins issued in the name of the Romans, including some rare fractions (Figs. 3-4).[77] Table 1 shows how the weight standard adopted in the Romano-Campanian production was in line with the Campanian one, i.e., with the Neapolitan one.[78]

77 Chronology: Burnett and Crawford 2014, 236 gives ca. 310. Bernard 2018, 150-51 argues for a date closer to 300. Mint: Crawford 1985, 28–30; Burnett 1998 argues for an identification of the mint with Rome; also Rutter 2001, 45–50. Yarrow 2021a, 29–34 argues that *RRC* 13 has a different trace gold content to later Roman didrachms meaning it was likely created at a different mint; it has a similar trace gold content profile to coins struck at Naples, and like these coins *RRC* 13/1 has a random die-axis (see Burnett 2016b, 13). Burnett 2016b, 25 suggests that the early Roman silver coins were indeed 'Romano-Campanian', made in Cales. There are strong links between the symbols and letters used as 'control-marks' on the coins of Cales and the Roma/Victory ROMANO coins. Coinage of Cales: Pantuliano 2011.

78 Burnett 2016a, 145 Tab. 1, Burnett 2016b, 25.

	Neapolis Obols group II Mid 4th century	Neapolis Obols group III c. 330-10	Fistelia c. 310-00	Anonymous (Fistelia) c. 310-00
0.80-89	-	-	2	-
0.70-79	-	5	24	8
0.60-69	7	8	92	83
0.50-59	4	16	90	91
0.40-49	1	11	40	22
0.30-39	-	2	-	-
0.20-29	-	2	1	-
Average	0.61 (12)	0.54 (44)	0.59 (247)	0.58 (203)

Table 1. Compatibility between Roman (*RRC* 13/2) and Campanian obols. Burnett 2016a, 145.

For what concerns southern Italy, after the end of Pyrrhic War the weight standard for the Tarentine *nomos* was reduced from ca. 8 g. for the didrachm to ca. 7 g, approaching the standard in use in the Neapolitan mint (Figs. 5-6).[79] Tarentum, Livius' fatherland, and one of the major mints of the region, thus adopted a silver weight standard compatible with the Neapolitan one.[80] The so-called Campano-Tarentine coinage, an interesting series of didrachm with the Neapolitan head of a nymph on the obverse and the young horseman of Tarentum on the reverse, was also issued in the years immediately following the Pyrrhic War (Fig. 7).[81] These didrachms, probably minted in Naples, represent coordinated issues between these two important mints and show the extent of the monetary integration at the end of the Pyrrhic War.

Fig. 5. Calabria, Tarentum. Silver nomos, ca. 302-280 BCE.
Obv. Youthful nude jockey on horse standing r., holding, with his right hand, a wreath to crown the horse's head and the reins with his left; above, ΣA. Rev. ΤΑΡΑΣ /ΑΓΑ Phalanthos seated astride dolphin to l., holding bunch of grapes in his right hand.
HN Italy 960. *SNG ANS* 1052. Vlasto 673-75. (Nomos 20, 10 July 2020, lot 24). 23 mm. 7.86 g.

79 Pre-280 Tarentine *nomoi*: *HN Italy* 957–974. Post-280 reduced standard *nomo*i and drachms: *HN Italy* 997–1046.

80 Neapolis: *HN Italy* 586-588.

81 *HN Italy* 1098.

Fig. 6. Calabria, Tarentum. Silver nomos, reduced standard, ca. 272-240 BCE.
Obv. The Dioskouroi on horseback riding r.; ΝΙΚΥΛΟΣ below. Rev. Phalanthos, nude, holding kantharos in extended right hand and cradling trident in left arm, riding dolphin l.; AP monogram to r., ΤΑΡΑ[Σ] below.
HN Italy 1046 (Triton X, 9 Jan. 2007, lot 35). 21 mm. 6.54 g.

Fig. 7. Calabria, Tarentum. Campano-Tarentine series. Silver nomos, ca. 281-272 BCE.
Obv. Diademed head of Satyra l. Rev. Nude youth crowning horse he rides r.; crescent to l., dolphin below.
HN Italy 1098 (Pegasi 27, 6 Nov. 2012, lot 21). 19.5 mm. 6.50 g.

At the same time, there was a notable decrease in the number of mints producing silver coinage in central and southern Italy. Croton, Thurium, and Metapontum had ceased their production by the end of the Pyrrhic war.[82] In Lucania, the mint of Velia also ceased its production during the Pyrrhic period.[83] Only Heraclea continued its production on a reduced standard until the end of the First Punic War.[84] The hoard of Oppido Lucano, likely buried in the course of the Pyrrhic War, represents a good sample of pre-280 circulation patterns and shows a considerable variety of mints, though dominated by Neapolitan and Tarentine issues.[85] On the other hand, the end of the Pyrrhic War represents the end of this variety and a significant increase in the standardisation of the silver weight standards.

82 Croton: *HN Italy* 2195–2201; Thurium: *HN Italy* 1924–1934; Metapontum: *HN Italy* 1702–1716.

83 Velia: *HN Italy* 1316–1318.

84 Heraclea: *HN Italy* 1428–1435.

85 *IGCH* 1961 (http://coinhoards.org/id/igch1961?lang=en). The hoard includes thirteen coins from Naples, five from Tarentum, further pieces from Heraclea (3), Metapontum (1), Thurii (20), Velia (28), Kroton (3), Locri (1) and Terina (1) and one Roman-Campanian didrachm (*RRC* 13/1).

It is difficult not to see a sign of growing Roman influence in the decrease of the number of mints producing silver coinage and in the enhanced and coordinated production of the Neapolitan and Tarentine mints.[86] The same conclusion is suggested by one of last silver issues from Locris Epizephyri, on a reduced Achaean standard compatible to the Tarentine one.[87] The reverse of this series of coins depicts the goddess Roma being crowned by *Pistis*, the Greek equivalent of *Fides* (Fig. 8). The Roman conquest of southern Italy, initiated by the treaty with Neapolis in 326 [88] and culminated in Pyrrhus' defeat at Heraclea in 280, created the conditions for the establishment of a sort of monetary *koiné*, where coins of similar standards circulated together.[89] It is worth noting that the mints enabling this monetary integration under Roman hegemony are the ones of Neapolis and Tarentum, the cities of origin of the first authors of Roman literature.

Fig. 8. Bruttium, Lokroi Epizephyrioi. Silver nomos, ca. 275-270 BCE. Silver Nomos.
Obv. Laureate head of Zeus l. Rev. ΡΩΜΑ left, ΠΙΣΤΙΣ r., ΛΟΚΡΩΝ in exergue, Roma seated r. on pile of arms, being crowned by Pistis standing l.
HN Italy 2351 (Busso Leu 380, 3 Nov. 2004, lot 140. 20 mm. 7.15 g.

At first sight, the fact that the first Roman silver issues (*RRC* 13/1-2) circulated in southern Italy alongside coins from other mints, without replacing them, could be perceived as a paradox. Indeed, Roman issues were designed to enter an existing system, not to compete with or replace it.[90] In the hoards in which Roman types are present, they make up an almost negligible portion of the value of each hoard and there are no known hoards made up primarily of these types.[91]

However, the paradox only becomes apparent if we consider that during both the Pyrrhic War and First Punic War, Roman colonies and allies engaged in coordinated striking, clearly to support the Roman war effort, but rarely with any direct reference

86 Rutter 2001, 8.
87 *HN Italy* 2347–2351.
88 Livy 8. 32–35
89 An example of this integrated circulation is represented by the hoard of San Martino in Pensilis, buried around 240; Burnett 2006.
90 Yarrow 2021a, 31–33.
91 Burnett 1977; Vitale 1998; Burnett 2006; Burnett and Molinari 2015, esp. 92–96.

to Rome on the coins themselves (Figs. 9–10).[92] In this same period Rome was engaged in other political actions that required economic expenditure, namely colonisation and road-building projects, which required military control and defence fortifications. As shown clearly by Yarrow, there is a strong correlation between the findspots of the first Roman silver coinage and the distribution of Roman colonisation and road-building initiatives in southern Italy.[93]

Fig. 9. Campania, Cales. Silver didrachm, ca. 268-260 BCE.
Obv. Head of Athena-Minerva to r., wearing crested Corinthian helmet decorated with a coiled serpent on the bowl, triple-pendant earring and necklace; behind her neck, small wing; below, H. Rev. CALENO. Nike-Victory driving fast biga to l., holding kentron in her right hand and reins in her left.
HN Italy 434 (NAC 13, 8 Oct. 1998, lot 31). 23 mm. 7.35 g.

Fig. 10. Campania, Suessa Aurunca. Circa 265-240 BCE. Didrachm (Silver, 21 mm, 7.24 g, 5 h). Laureate head of Apollo to r., with his hair long and flowing down his neck; behind, spear head upwards. Rev. SVESANO Dioscouros, wearing pileus and holding a palm branch tied with a fillet, riding to l., with a second horse beside him.
HN Italy 447. (Nomos 20, 10 July 2020, lot 18). 21 mm, 7.24 g.

Silver coins were thus issued *for* Rome on the Neapolitan-Tarentine standard, but they were not produced *in* Rome. As Yarrow states, "the products of these mints are not symbolic gestures; they are intensive efforts to fund the defence of Rome, the dominant

92 For issues of funding the First Punic War, see Tan 2017, 93-117. Some of the mints included in this coordinated striking see Cora (*HN Italy* 343), Cales (*HN Italy* 434), Suessa (*HN Italy* 447) and Teanum Sidicinum (*HN Italy* 451–52); Yarrow 2021a, 34 Map 1.4. For the circulation patterns of these issues, especially relative to the silver coinage issued in the name of the Romans see Burnett 2006.

93 Yarrow 2021a, 33 map 1.2; 34 map 1.4; Coles 2020.

regional power to whom these communities owed not just allegiance, but real resources and manpower."[94] Silver coinage was thus minted *for* Rome and, in some limited cases, in the name of Rome by Roman allies, especially Campanian. Tarentum was at the same time issuing a significant amount of silver coinage on the same weight standard. However, no silver coinage was actually produced in Rome. Recent studies focusing on the comparison of the die axes of Roman and Italian didrachms suggest that the actual production of silver coinage *in* Rome did not begin before 240.[95] The beginning of silver coinage in Rome is thus clearly shown to go hand-in-hand with the end of silver coinage production in the central and southern Italian mints.

2b. Roman fiduciary bronze and fiduciary bronze coinage for the Romans

The production and circulation patterns of Roman coined bronze in the course of the third century presents some striking elements, some of which are complementary to what has been observed up to this moment for the silver coinage. While the mints producing Italian silver coinage steadily decreased in these years, the number of Italian mints producing bronze coinage greatly increased in number and in geographical distribution. Rutter calculates that the number of mints producing bronze coinage in central and southern Italy sky-rocketed, from seventeen in the fourth century to fifty in the third century (Fig. 11).[96]

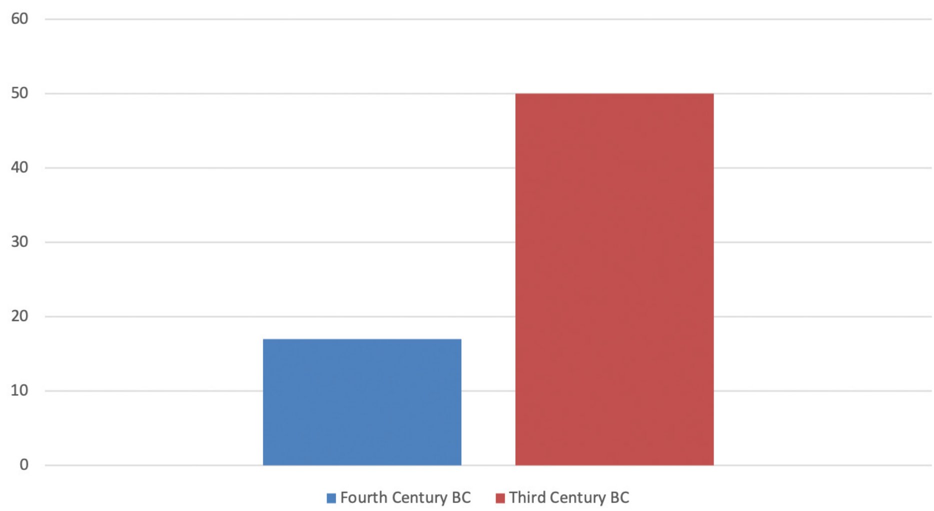

Fig. 11. Increase in the number of Italian mints producing bronze coinage during the third century. Source Rutter 2001.

94 Yarrow 2021a, 32.

95 Bernard 2017 reviewing Coarelli 2013; Burnett and Crawford 2014. For the evidence derived for die axis analysis see Burnett 2016b, 19–26.

96 Rutter 2001, 8.

While Neapolis and Tarentum enjoyed an almost continuous production until the end of the century, most mints had occasional rather than continuous production, so these coins could be interpreted as serving specific purposes such as financing Roman campaigns in the course of the Pyrrhic War and the First Punic War.[97] The coordinated striking for at least some of the mints located in southern Latium and northern Campania in the course of the first century is suggested by the shared Minerva/cock types and by the fixed die axis, which greatly differ from the rest of the Italian bronze coinage produced at the time (Figs. 12- 13).[98] The coordinated striking of cities allied to Rome once again helps explain the absence of a Roman production, after the two Greek-inspired bronze issues with the ROMANO inscription, presumably struck in Neapolis at the end of the fourth century.[99] This relationship of course finds parallels in the production patterns of silver coinage in the area, as both silver and bronze coinages were used to support the Roman campaigns.[100]

Fig. 12. Campania, Suessa Aurunca. Bronze, ca. 265-240 BCE.
Obv.Helmeted head of Minerva l. Rev. Cock standing r.; star to upper l.
HN Italy 449 (CNG E- Auction 350, 6 May 2015, lot 4). 19.5 mm. 6.12 g.

Fig. 13. Campania, Teanum Sidicinum. Bronze, ca. 265-240 BCE.
Obv. Helmeted head of Minerva l. Rev. Cock standing to r.; TIANO before, star to upper l.
HN Italy 453 (Roma Numismatics XV, 5 Apr. 2018, lot 7). 20 mm. 7.88 g.

97 Rutter 2001, 9; Yarrow 2021a, 34 Map 1.4.
98 Minerva/cock types: *HN Italy* 435 (Cales), 449 (Suessa), 453 (Teanum Sidicinum). Fixed die axis: Burnett 2016b, 16–17 Tables 7–9.
99 *RRC* 1 & 2. Taliercio 1998.
100 Yarrow 2021a, 32.

A further clue to the connection between coin production and war efforts is offered by the small issue of coined bronze types with head of goddess/eagle (*RRC* 23/1; Fig. 14), which was likely minted in Sicily around 240, or possibly earlier.[101] The connection with the Roman campaign in the island is made even more likely by the compatible weight standard with the Mamertine coinage.[102] Most of the bronze coinage coined by the allied cities in Campania was, thus, *for* the Romans, who seemed to have avoided minting their own coinage unless absolutely necessary, as in the case of *RRC* 23/1.

Fig. 14. Sicily, Messana (?). Bronze double Litra. Obv. Head of Minerva left, wearing Corinthian helmet; behind, symbol. Rev. Eagle standing left, wings outspread, head reverted, on thunderbolt; before, legend and sword. *RRC*.23/1. RBW 31. (ANS 2015.20.2036, bequest of R.B. Witschonke). 26.9 mm. 16.55 g. The reverse legend is ROMA and not ROMANO as letters are well visible, the coin not very worn and there would be no space for the 'NO' at the end. As such, this is a variant of *RRC* 23.1 in a period where ROMA was used concurrently with ROMANO.

The end of the First Punic War represented a threshold for the production of Greek-inspired bronze coinage, with the Roman mint beginning fully-fledged production after 240; this second phase in the production is signalled by the transition from the inscription ROMANO to ROMA on the coins.[103] Coined silver and Greek-inspired bronze coinages, therefore, followed similar patterns between the end of the fourth and the mid-third century.

After some initial and limited issues in the Campanian area, the Roman state seems to have mostly relied on the coin production of the allied cities in the course of the first half of the third century. Only after 240 the coin production of the Roman mint took the front seat through the enhanced production of both silver and bronze coins. After this date Roman coinage minted in Rome, outnumbered for number and volume of issues, the coinage minted *for* the Romans by the allied cities.

101 Burnett–McCabe 2016.
102 Burnett–McCabe 2016, 251–57.
103 Bernard 2017; Burnett and Crawford 2014.

2c. A mixed circulation pattern for currency bars

The First Punic War also represents the likely historical context for the production of the Roman currency bars (Fig. 15–16).[104] The dating of these bars to those years is based on the following elements: 1) metallurgical testing at the British Museum, which showed that all the currency bars, with the exception of *RRC* 5/1) have a similar composition;[105] 2) the bars with naval imagery are probably connected to Duilius' distribution of booty after his *triumphus navalis* in 260.[106] Given their consistent composition and the fact they were produced in a relatively short amount of time, it is likely that the currency bars represented a way to facilitate the distribution of booty in the aftermath of Duilius' triumph, rather than a regular form of currency.[107] While the naval imagery on the *RRC* 10 – 12/2 bars is probably related to the naval battles fought in the First Punic War, the cocks represented on *RRC* 12/1 suggest a relationship to the already mentioned coin series with the Minerva/cock type, issued by the Campanian cities of Cales, Suessa and Teanum Sidicinum in the same years (Fig. 17).[108] Currency bars and Italian fiduciary bronze coinage seem thus to represent two elements of the same funding effort in the course of the First Punic War.

104 *RRC* 3/1-12/2. For the discussion of *RRC* 12/2 (originally considered a forgery in Crawford 1974, 548 n. 23, then recognized as an original following metallurgical testing see Ghey, Leins, and Crawford 2010). Italian currency bars: Haeberlin 1910, 12 2 pl. 6, 4, 19 no. 1 pl. 7,1, 20–21 nos. 1-3 pl. 8, 1–3, pl. 32, 2; Vecchi 2013 nos. 4–9. For the up-to-date scholarship overview for the date of introduction of the Roman currency bars see Yarrow 2021a, 38–39. For a discussion of the dating of the Roman currency bars to the First Punic War (with the exception of *RRC* 5/1) see Yarrow 2021b.

105 Burnett, Craddock, and Meeks 1986.

106 *RRC* 10-12/2. Kondratieff 2004, cf. Polyb. 1.21-24. The subsequent discovery of the Egadi rams from a sea battle around 241 further strengthened the argument (Cutroni Tusa 2013, esp. pl. 31). Most recently, Yarrow 2021b.

107 Yarrow 2021b.

108 See *supra*. Minerva/cock types: *HN Italy* 435 (Cales), 449 (Suessa), 453 (Teanum Sidicinum). Yarrow 2021b.

Fig. 15. Rome. Bronze currency bar, ca. 260- 240 BCE.
Obv. Trident tied with fillet. Rev. Caduceus tied with fillet.
RRC 11/1. (BNF REP-423).97.5 –188 mm. 1,680.1 g.

Fig. 16. Rome? Bronze currency bar, ca. 280-240 BCE.
Obv. Bull, l. Rev. Bull, r. Haeberlin 1910, p. 144 no. 4 table 57,3 (this bar).
RRC 5/1. (MKB 1891/26). 95-163 mm. 1,347 g.

Fig. 17. Rome. Bronze currency bar, ca. 260- 240 BCE.
Obv. Two chickens facing each other. Between them stars above and below. Rev. Two tridents with two dolphins between.
RRC 12/1. (BNF REP-424). 93.4-169 mm. 1,526.1 g.

In the early years of the third century, the Roman mint began producing *aes grave*, cast heavy bronzes (Figs. 18–19).[109] In the words of Burnett, *aes grave* coinage represented "an amalgam of the central Italian idea of heavy metal currency with the south Italian (and Greek) idea of round coins."[110] The coins were round and two-sided with fixed denominations, but their value was determined according to their weight, not their position into a denominational system.[111] Recent archaeological investigation pursued at the sanctuary of *Sol Indiges* at Lavinium suggested that the first *aes grave* was deployed to fund Roman fortifications of the Tyrrhenian coastline, especially after the Pyrrhic War.[112] As rightly noted by Yarrow, "the coin evidence helps us see Rome preparing for a potential conflict with Carthage before it actually manifests, and in doing so, creating and deploying a new form of coinage on an economically significant scale."[113] This form of currency circulated together with currency bars and *aes rude*, a non-coin type of money, which consisted of unworked pieces of bronze (Fig. 20).[114] Since these three forms of currency were all based on metal weight rather than denominational value, their mixed circulation comes as no surprise.

Fig. 18. Rome. Libral bronze as, ca. 280–275 BCE.
Obv. Janiform head of Dioscuri, hair tied with band. Rev. Head of Mercury in petasus, l.
RRC 14/1. (ANS 1969.83.386, Gift of E.R. Miles). 70 mm. 325. 89 g.

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109 Vecchi 2013 nos. 10–114. For a summary of scholarly discussion on the chronology of *aes grave* see Burnett 2012, 304 (with bibliography).

110 Burnett 1987, 5.

111 For partial corrections to this statement see Bransbourg 2011 and 2013.

112 Jaia and Molinari 2011; key to dating these early *aes grave* has been establishing that they are contemporary with a Roman small stamp workshop (atelier des petites estampilles) of black glaze pottery (*vernice nera*). For a map showing the correlation between *aes grave* finding spots and Roman fortifications see Yarrow 2021a, 37 map 1.5.

113 Yarrow 2021a, 37.

114 On the regional tradition of using *aes rude*, unshaped pieces of bronze, and *aes formatum*, variously (roughly) shaped pieces of bronze, as money: Bertol and Farac 2012. On metallurgical composition, Burnett, Craddock, and Meeks 1986; Baldassarri et al. 2007; and DeCaro, Ingo, and Salvi 2005. Hoards with *aes grave*, *aes rude,* and currency bars: *CHRR* 13. Hoard with *aes grave* and currency bars: *CHRR* 13,16, 21 and Molinari 2011.

Fig. 19. Rome. Reduced libral bronze as, ca. 275–264 BCE. Obv. Head of Apollo, right, with hair tied back with band. Rev. Head of Apollo, l., with hair tied back with band.
RRC 18/1. (ANS 1969.83.411, gift of E.R. Miles). 69 mm. 325.16 g.

Fig. 20. Aes rude. 17.17 g. ANS 0000.999.563.

A more surprising element is represented by the presence of mixed hoards where full-value and fiduciary bronze coinage circulated together (Fig. 21).[115] While the circumstances that allowed the mixed circulation of full–value and fiduciary coins still need to be investigated, these hoards show a remarkable monetary integration between coinages of different provenience and different nature.[116] These integrated circulation patterns are certainly enabled by Roman power, whose hegemony over the central and southern part of the Italian peninsula is secured by the end of the First Punic War.

115 *CHRR* 20 (Ardea), 24 (Pietrabbondante), 30 (Rome), 50 (Carife), 51 (Castagneto), 52 (Cava dei Tirreni).

116 Crawford suggests that 1 didrachm (7.3 g) = 3 asses (972-840 g) implying a 1:120 AR/AE ratio. The problem begins if the fiduciary bronzes (ca. 4 g.), usually considered *litrae,* were exchangeable with didrachms. In that case, 1 didrachm (7.3 g.) = 10 litrae (40 g.), implying a 1:5.5 AR/AE ratio. The presence of mixed hoards shows that full-value and fiduciary bronze interacted with each other (Crawford 1985, 41). Crawford (weakly) explains this in the following way: "It is remarkable that those to whom cast bronze issues were paid did not, as far as we know, use them to forge token bronze coin issues; that they did not is remarkable evidence of the moral cohesion of Roman Italy in the third century BCE." (Crawford 1985, 41).

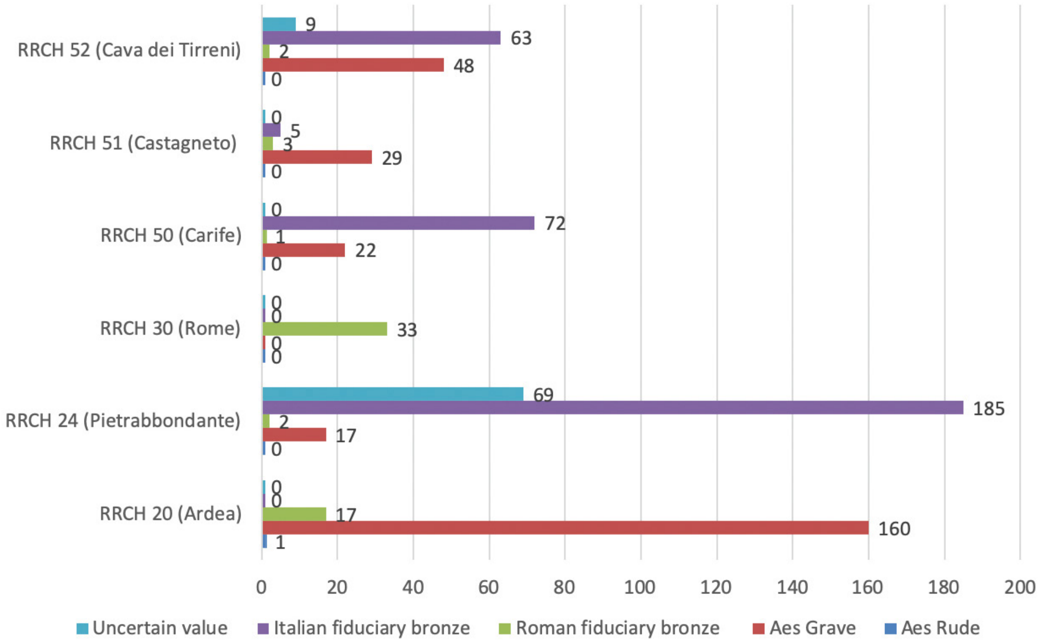

Fig. 21. Mixed hoards of fiduciary and full value bronze coinage. (*RRCH*)

3. Conclusions

Latin literature and Roman coinage can only be fully understood in the frame of the constant dialogue between Roman tradition and that of central and southern Italy in the course of the third century. Having secured their control over the central and southern part of the Italian peninsula in the third century, the Romans faced the problem of having to define what was 'Roman,' especially in connection with the emergence of the provincial system represented by Sicily and then Sardinia.[117] The creation of a literature and a coinage of Roman production were both pivotal in this process of self-definition. As the first literary text of Roman literature is the *Odusia*, a translation from a Greek original made by a *semi-Graecus*, an Italian of Greek descent, in the same way (even if the chronology is slightly different) the first Romano-Campanian issues (*RRC* 1-2) are an adapted form of Greek models made by the Neapolitan mint, a Greek mint under Roman hegemony.

Minting efforts by cities allied to Rome supported Rome's campaigns well before 240, but the years after the First Punic War seem to be a transformative moment for Roman coinage. After 240 the Roman mint began to issue its own silver and bronze fiduciary coinage, instead of relying on the Campanian mints.[118] In these years there is a remarkable transition from coinage produced *for* Rome, to the one produced *in*

117 For the creation of Italian identity see Carlà 2017, esp. 164–74.
118 Bernard 2017; Burnett and Crawford 2014.

Rome. In the same way, the beginning of Latin literature in 240 marks a fundamental watershed in Roman culture, the pivotal importance of which did not escape Roman intellectuals in the centuries to come.[119]

Tarentum and Campania, Andronicus' and Naevius' places of origin, the first poets of Roman literature, were also the mints that provided a 'model' for Roman coinage and, in the case of the Campanian mints, actually produced it. During the third century, the growing power of the Roman state provided the conditions for establishment of a cultural and monetary *koine*, which finds its attestations in the Hellenised Latin words appearing in the works of the Tarentine poet Rinthon and, for what concerns coinage, in the adoption of compatible weight standards for the coinage produced by different mints and in integrated circulation patterns. Indeed, literature and coinage represent two complementary and deeply interrelated heuristic tools to better understand Roman civilisation.

Both literature and coinage originated in the middle ground between Greek and Roman tradition that characterised the end of the fourth and the third century. At the same time, literary texts and numismatic artefacts concur in indicating the aftermath of the First Punic War as being a transformative moment for the emergence of Roman identity. It is after this date that Roman history and Roman mythical past became worthy of literary treatment and it is only after the naval victories over Carthage that Roman coinage became a relevant element in the central and southern Italian monetary circulation patterns.

240, the year after the end of the First Punic War, was thus a semantically ideal starting point for both literature and coinage, as Rome had become by then a Mediterranean superpower, whose literature and coinage, though grounded in Greek tradition, began to speak a new language.

Author

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119 Cowan 2015 (with bibliography).

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History from the edge: teaching early Islamic history from sub-Sasanian coins

Khodadad Rezakhani

Abstract

The history of the fall of the Sasanian Empire (224-651 CE) as a result of the Muslim conquests has been told mainly through the evidence of later Muslim historians such as al-Tabari and al-Baladhuri. These histories, meant to be universal histories of Islam or internal accounts of the rise of Islam, often normalise events and obscure details of the events. These narratives can be dominated by a centralising effort, showing the march of the Islamic system toward a centralised caliphate dominating an empire stretching from Afghanistan to Portugal.

Non-narrative sources, including coins, can provide a useful corrective to this normalised narrative, shedding light on details of the events and bringing to light many unknown characters. By relying on the latest research into coinage of the late Sasanian and early Islami Ērānšahr, this paper provides examples of the stories that coins can tell us. From sub-Sasanian rulers to those issuing coins on the peripheries of the Islamic empire, the coins show a fascinating picture of the levels of authority in the region and the growth of power in the lands of the eastern caliphate.

Keywords

[Sasanian Empire] [Islamic Empire] [Iran] [Iraq] [Arab-Sasanian Coins] [Islamic Conquest]

The events of the middle of the seventh century in the Near East are some of the most recognisable watersheds in world history.[1] The rise of a new power in Arabia, that of the Islamic Caliphate, and its ascent to imperial status controlling territories between the Pamirs in the east and the Pyrenees in the west, is phenomenal and fascinating. Historians attempting to answer questions of why and how the Muslim administration and military were so successful have arguably failed to offer convincing answers.[2] Apart from the complicated nature of the events themselves, a great part of the difficulty in

1 For their help in the course of writing the present short essay, I would like to thank Hodge Mehdi Malek and Nikolaus Schindel for their help with citations and some of the discussions, and Dan Sheffield and Shervin Farridnejad for their assistance in locating PDFs – the saviour of scholarship in the age of Covid-19. Also, thanks to Lee L. Brice for his help and guidance in the process, and for his extreme patience.

2 For an outline of the events under consideration, see Donner 1981. In turn, Hoyland 2014 provides a different narrative and re-contextualises many of the events. Malek 2019, 1-33, provides a convenient summary of the events as they concern Ērānšahr (the former Sasanian territories), under discussion here.

explaining them, or even understanding their sequence, has been the nature of the historical sources. Mostly basing themselves on narrative accounts historians have grappled with questions of structural weakness in the Sasanian and Byzantine empires resulting from continued wars when explaining the failure of these ancient states to withstand the Islamic assault.[3] But considering the late date of many of these narrative sources, their testimony in explaining details must be treated with much caution.[4] At the same time, alternative sources commonly not used by historians, must be brought into consideration and evaluated for what they can contribute to the historiographical understanding of the early Islamic history. In this contribution I would like to bring attention to the numismatic material from the middle to late seventh century to understand the process of waning Sasanian control over their imperial territories.[5] In particular, I will concentrate on the coins issued in the Sasanian *kust* of South (Nēmrōz) and the information contained therein about the late Sasanian and early Islamic period.[6] These examples will demonstrate the way coins can be used in order to teach historical events in a narrative form, something that we usually expect only from chronicles and histories.

Specifically, the coins of the local authorities in southern Iran in the second half of the seventh century and following the death of the last Sasanian emperor, Yazdgerd III, might convey a different story from the standard tale of the establishment of the caliphate in the former Sasanian territories. These coins, here dubbed "coins from the edge", are unusual issues borrowing their iconography from previous Sasanian issues and occasionally even Byzantine coins current in Syria, as well as many innovations. By considering their evidence, they can be used to teach the history of the period of transition away from the vision of a quickly centralising system exerting power from Medina, Kufa, or Damascus. Indeed, these issues suggest the fragmentation of authority from the local rulers to provincial governors and eventually to the person of the caliph. Similarly, their iconography, often placing them outside the standard issues of the Arab-Sasanian governors like ʿUbaidallah b. Ziyād, provides examples of layers of compromise and power negotiations that prevailed in the early Islamic period, and is often missed in the available literary sources.

3 Howard-Johnston 2004, among others, for the Sasanian case; Kaegi 1995 for the Byzantine case.
4 Such caution was the root cause of Crone & Cook's 1977 venture. Ever since, many contemporary sources, although never as complete as later Islamic narratives, have been made available and studied by scholars, many of which are gathered in Hoyland 1997. See Howard-Johnston 2006 for a specific case study.
5 Album 2011 provides an easy to access overview of most of the coins discussed here. For a deeper consideration of Arab-Sasanian coins, see Gyselen 2000 (for copper) and Malek 2019 for detailed studies, frequently referenced in the current paper.
6 See Gyselen 2001 for an explanation of these major, sixth century divisions of the Sasanian Empire.

Islamic conquests, Arab conquests, and 'the fall of the Sasanians'

Before embarking on questions of historical events and ideas, I shall first clarify what I mean by the events of the middle of the seventh century. The series of military, political, economic, and social changes that happened between ca. 635-695 CE are variably called 'Islamic Conquests', 'Arab Conquests' from one side and 'Fall of the Sasanians' and 'Loss of Byzantine Near East' from the different historical vantage points.[7] These are the events, known mainly through later Conquest (Ar. *Futūh*) narratives, written by Muslim historians such as al-Tabari and al-Baladhuri, as well as many others.[8] These later narratives, which form the basis of our understanding of events – for both Sasanian and Byzantine contemporary accounts are curiously poor in this regard – have to be scrutinised in order to render answers to the questions we ask about the period. Among these questions are: who was responsible for the conquests, who in fact carried out the conquests, and what events contributed to changes in political settings in the conquered territories? Closer scrutiny of sources, more accurate questioning, as well as use of alternative sources, have resulted not in more accurate answers to the above questions, but at least in our increased consciousness of the existence of such issues.

While the Arabic sources, as well as later Greek/Byzantine ones, have often driven the bulk of our inquiries into these questions, an understanding of other sources has created a different approach to the issue at hand. In particular, Syriac and Armenian sources, as well as Coptic and occasionally Ge'ez ones, have increased our awareness of different narratives for the period of conquest and the establishment of the early Caliphate.[9] It is perhaps surprising that the same attention is not afforded to Iranian sources in Middle Persian, New Persian, or Bactrian and Sogdian. The result of this latter neglect is that even newer narratives of conquest show more deference to the events in Egypt and Syria – former Byzantine territories – than to Iraq and Iran, the domains of Ērānšahr, the Sasanian Empire.[10]

Perhaps as a result of this lack of attention to Iranian sources, we still see an inaccurate understanding of the process of conquest in the Sasanian territories, the roles of different actors in the process, and even the basic question of who was involved in it. I have previously argued that we must see the process of the 'fall of the Sasanian dynasty' separately from the 'end of Sasanian rule' over these territories.[11] Furthermore, the conquest of Iraq – Sasanian *Asūrestān* with its capital of Ctesiphon – must be considered

7 Hoyland 2014, 1-6 for a discussion of the intricacies of these differences. All dates are CE.
8 For a by now outdated, but in a sense classical, summary of these sources and their narrative of the events, see Zarrinkoub 1975.
9 Hoyland 1997.
10 Material sources, in the form of archaeology, are not evenly available for the period, with the bulk of work done on former Byzantine territories in Egypt, Syria-Palestine, and Anatolia. Works such as Walmsley 2007 are simply missing for the Sasanian domains; Morony 2013.
11 Rezakhani 2019.

distinctly from the conquest of the Iranian plateau and the east.[12] If these proposals are heeded, we will also arrive at an understanding that calling the conquests 'Islamic conquests' or 'Arab conquests' can be both accurate and inaccurate, depending on the situation and event in question. But as a whole I have preferred to discuss the period, here and elsewhere, as one of 'the End of Sasanian rule' and the 'Rise of the Islamic Caliphate' in the Sasanian territories.[13] This, perhaps influenced by my training as a late antique historian and a willingness to see institutional transformation instead of collapse and sudden change, is part of how I wish to describe the period under consideration here and the transition from the late Sasanian to the early Islamic periods in the Sasanian territories of Iraq, Iran, and Central Asia.

The waning of Sasanian power: the death of Khosrow II

The extensive wars between the Sasanians and the Byzantines following the murder of Emperor Maurice by Phocas, essentially changed the face of the Near East in the early seventh century. The campaigns of Khosrow II, starting around 603 and continuing until 619, resulted in the Sasanian conquest of Anatolia, Syria, Palestine, and Egypt. These territories stayed securely in Sasanian hands for another decade or so, while from 625-626, the Byzantine emperor Heraclius undertook a series of counter attacks aimed at removing Khosrow II from power. These counter attacks, and the political intrigues that went hand in hand with them, resulted in the removal of Khosrow from power in February 628 and his execution shortly after. This, essentially, was the end of effective Sasanian rule over their territories, including the newly conquered territories on the eastern Mediterranean.[14] Henceforth, the control of the successors of Khosrow II over territories, particularly those outside Iraq, was indeed nominal.

12 For the conquest of Iraq, see Morony 1982. For the conquests of the plateau, see Zarrinkoub 1975 and the many correctives offered by Daryaee 2003 and 2010; Pourshariati 2008; and Rezakhani 2017.

13 Rezakhani 2019 and elsewhere.

14 For a more detailed discussion of these events, as well as their larger global context, see Howard-Johnston 1999 & 2004; for a summary, see Rezakhani 2020, 254-58.

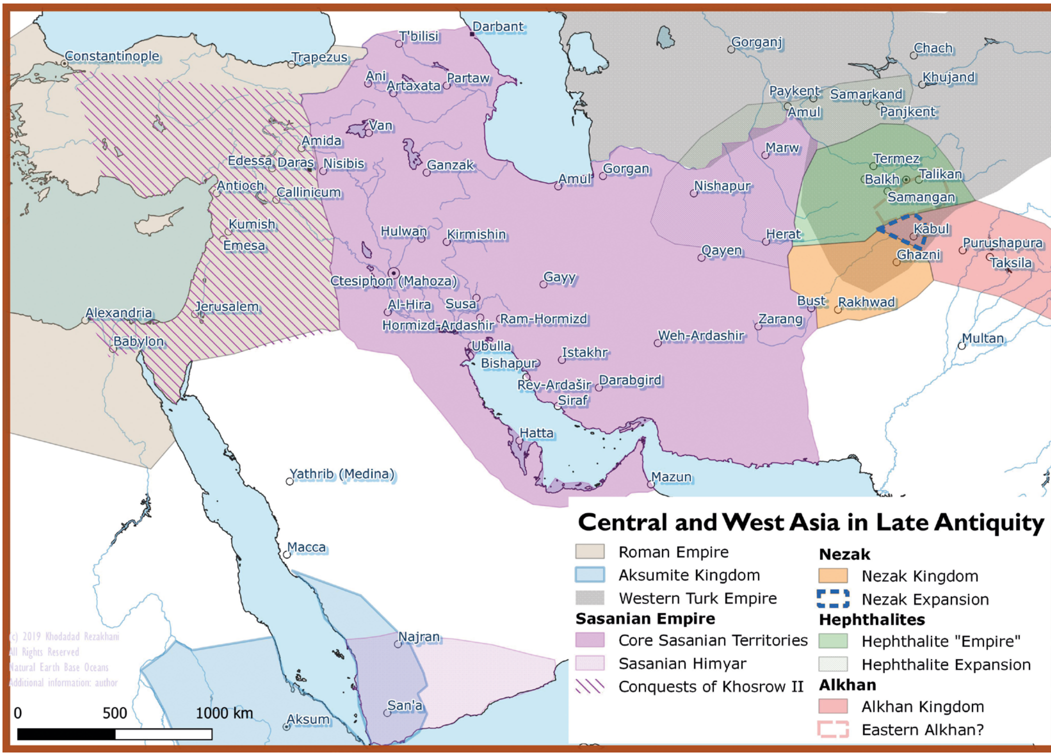

Figure 1: the Sasanian empire and its neighbours in the early seventh century. Map by the author.

The confused state of affairs following Khosrow's death was essentially the cauldron in which the subsequent events, including the early Islamic conquests, brewed. While Heraclius' counterattack seems to have been successful in making inroads into Sasanian holdings in the Caucasus, as well as routing Sasanian forces in Azerbaijan and eastern Anatolia, it appears not to have been permanent. Following the death of Khosrow II, Heraclius took the quickest route back to Constantinople, and subsequently appears to have regained control in Anatolia and perhaps northern Syria. But there is little evidence for the re-establishment of Byzantine control in lower Syria, Palestine, and Egypt. There territories appear to have continued under the control of Sasanian generals (by now, 'war-lords') like Shahrbaraz and then passed directly to the hand of the Muslims who started their campaigns in the region from around 632-33.[15]

The history of the period – from the end of Sasanian control in 628 to the proper establishment of the Islamic Caliphate in the region following the Second Fitna in 692 – is a confusing and poorly documented time span.[16] Later Muslim historians often provide a normalised and highly edited version of events presenting it as a purposeful march

15 The role of Shahrbaraz in re-establishment of peace and regaining of Byzantine control might be gazed through his secret meeting with Heraclius; see Kaegi and Cobb 2008.

16 For a possible vision of the place of Ērānšahr in this context, see Daryaee 2016.

of progress. The few contemporary sources that we have, including Syriac chronicles, focus on details that either cannot be reconciled with the later narrative sources, or are too community specific to have a bearing on the greater political history. Even when these sources are of some use for the region of Syria and upper Mesopotamia (Islamic period *Jazeera*), they contain little information about the events further east, the former Sasanian territories, and important regions like Jibal, Fars, Sistan, or Khurasan.

It is here that taking our gaze away from narrative sources and seeking information from numismatic material might prove more useful. While coins do not provide answers to all of our questions, reading them separately from the literary sources can provide an alternative narrative of events which can then be adjusted when corroborated by other sources and information. This provides a useful teaching tool that can effectively involve students in the process of research, allowing for a first-hand introduction to the historian's craft and source evaluation.

Late Sasanian coins and history

Khosrow II was the most prolific authority issuing coins amongst the Sasanian monarchs. Mints of Khosrow were located over the entire Sasanian territories. He centralised coin production and used new mints, expanding the monetary economy.[17] The coins of Khosrow II are remarkably uniform and except for ceremonial and special issues which included rare gold issues, use a uniform iconography and production method (Fig.2).[18]

Figure 2: A late silver issue of Khosrow II, mint WYH, year 626 (RY[19] 36)
(Ira and Larry Goldberg Coins, auction 120, lot 1081)

The issues of the immediate successors of Khosrow II, his son Kavad II and grandson Ardashir III, continued the progression of Sasanian coinage, displaying new crowns identifying each ruler, and preserving the star and crescent sign on the margins that

17 In the late Sasanian period, dies were cut at a central workshop and sent to different mints for coin production. Vondrovec 2014, 532.

18 See Göbl 1971, table 12.

19 RY= Regnal Year.

had become a standard on the issues of Khosrow II. The coins of Ardashir III show a youthful face, without beard, which corroborate the narrative of al-Tabari and other Muslim historians that he was a child when he ascended the throne.[20]

In 629/630, Ardashir III was removed from the throne through a *coup d'état* instigated by general Shahrbarāz who then crowned himself as king, the third non-Sasanian person who had dared to do so. No coins of Shahrbarāz are known, but rare coins of a beardless authority also named Khosrow (III/IV?) show the chaotic state of affair in the Sasanian domains.[21] Khosrow III was most likely making a claim from Khurasan (the eastern province), although his third-year coins bear the mint mark of WYHC, usually associated with the area of Ctesiphon, the capital of the Sasanians in Asurestan/Mesopotamia (Fig.3).[22] The continuation of coins under this authority might show a limited area of influence allowing for longer control and minting of coins.

Figure 3: Silver coin of Khosrow III/IV, mint WYHC, year 636-637
(CNG, auction Triton XXIV, lot 877)

Perhaps contemporary to Khosrow III, Bōrān, a daughter of Khosrow II, issued coins for nearly three years.[23] It is significant that the coins of Bōrān depict the Queen in female garb with braided hair, clearly presenting her as a woman, despite later interpretations of the succession of a woman as a sign of weakness (Fig. 4).[24] The extent of Bōrān's control, as demonstrated by the number of mints where her coins were issued, from Abarshahr in Khurasan to Ctesiphon in Asurestan, shows the relative stability of her rule compared with those of Kavad II and Ardashir III, as well as the chaos that was to ensue following her early death.[25]

20 Heidemann 2013; 2014.
21 Malek 2019, 10.
22 Malek 2019, 10.
23 Malek & Sarkhosh Curtis 1998, 120, table 1.
24 For example, see Malek and Sarkhosh Curtis 2018, 115; or Malek 2019, 10 n. 43; for a more in-depth study of the reign of Bōrān, see Emrani 2009.
25 Malek & Sarkhosh Curtis 1998, 119-22.

Figure 4: Silver coin of Queen Bōrān, mint APL, 630 (RY 1)
(The New York Sale, auction 37, lot 655)

Upon her death in 630/31,[26] a few other authorities, most likely competing pretenders to the throne, followed Bōrān onto the throne. All of these authorities issued coins in the style of Khosrow II, occasionally even re-using his remaining dies. Chief among these is Azarmidoxt, a sister of Bōrān, who issued coins on which the queen is depicted as a bearded man, resembling that of Khosrow himself, with a similar winged crown topped with a star and crescent.[27] The confused state of coinage, from authorities sometimes not even known from written sources, is indicative of the disintegrating Sasanian state.

It was probably during this time that another pretender to the throne, Yazdgerd III, appeared in Istakhr, the traditional seat of the Sasanians in their homeland of Fars. From later evidence, including the Yazdgerdi Era dated from his coronation year 632, we know the date of his accession (Fig. 5).[28] The distribution of Yazdgerd's mints in the south, almost all of them from the Sasanian *kust* of Nēmrōz (South) indicates the limited extent of Yazdgerd's control and the fact that his power lay mostly in Fars and Sistan, as well as Khuzistan.[29] The coins of Yazdgerd III show the king of kings in two stages, one series as a beardless youth and the other one as a mature bearded man. The most prolific mint for Yazdgerd was SK which has been identified as Sistan, on the eastern side of Nēmrōz.

26 Malek & Sarkhosh Curtis 1998, 116.
27 Daryaee 2004; Malek 2019, 11.
28 See Kholdani 2013 for a historical consideration of the time reckoning. Malek 2019, 687-89 provides a useful guide and charts.
29 Rezakhani 2021.

Figure 5: Silver issue of Yazdgerd III, mint SK, year 17 (648-49), with a control mark
(CNG electronic auction 486, lot 310)

Whatever power Yazdgerd III might have possessed in Asurestan/Mesopotamia was rendered ineffective with the conquest of the region between 636 and 637 when Ctesiphon, the imperial capital, fell to the conquering Muslim armies. Coins of Yazdgerd continued to be issued in Khuzistan, Fars, and Kerman. In 642, a last stand in Nihawand, spearheaded by Yazdgerd's government in Istakhr and involving a wide array of allies from all around Ērānšahr, was unexpectedly defeated by the Muslim armies. Yazdgerd's power fell apart and the king appears to have sought help from allies further east, while still issuing coins in Fars and Sistan.

With Yazdgerd's death in 651 in Merv (Marv, Margiana) in the southeast of Erānšahr, while he was on his way to seek reinforcements, the official Sasanian coinage issues came to an end. His year 20 issues from Sakistan, however, continued to be issued, probably by various claimants, including his elder son Pērōz, who appears to have sought a restoration of the crown to himself with the help of Tang forces.[30] These coins then became the basis of later coin issues in the region, including the coinage of Phrom Kesar which will be discussed below.[31]

In the East (Sasanian *kust* of Khurasan and further east in Bactria/Tokharistan and beyond), outside the direct influence of the Sasanians, coins were issued in the style of Sasanian king Hormizd IV, as well as imitations of the coins of Wahram VI Chobin, an early 590's non-Sasanian rival of Khosrow II.[32] The later coinage of Bactria, issues of the early Islamic rulers of the mountainous areas of western Hindukush, are almost exclusively based on types issued by Khosrow II.[33] These coins, as well as those of Khurasan, most likely issued to the south of the Hindukush and in the regions of Kabul and Zabulistan, appear to be imitating the Arab-Sasanian issues of Fars and 'Iraq/

30 Daryaee 2006-2007.
31 Tyler-Smith 2000.
32 Vondrovec 2014, 525; Tyler Smith 2007.
33 Vondrovec 2014, 527-36.

Asurestān.[34] Many stylistic details, including the use of the portrait of Khosrow II and reverse borders, point to the influence of these early Islamic coins on the east, and this is where we shall turn now.

Arab-Sasanian coins: Sasanian governors to Muslim amīrs

The earliest Muslim rulers of the former Sasanian territories, including caliphs ʿUmar, ʿUthman, and ʿAli, did not issue any coins of their own. Instead, the earliest coins of the nascent Islamic state in Ērānšahr were issued by local governors of the early Umayyad Caliphs, namely that of Mu'awiyya, and the coinage of authorities like ʿAbd-allah b. ʿĀmir, Ziyād b. Abīhī and the latter's son, Ubaydallay b. Ziyād. These coins, essentially local issues in Basra, Kufa, and other Muslim garrison towns, as well as some older mints in the Sasanian 'South' (Nēmrōz), are essentially continuations of late Sasanian issues of Khosrow II and Yazdgerd III.

Coins of Yazdgerd III, particularly his year 20 (651 CE) from SK (Sakistan mint), continued to be issued after the king's death in 651 (Fig. 6). While the coins minted during Yazdgerd's time were dated, in the established Sasanian convention, by the king's regnal dates (Yazdgerdi Era, YE, starting at 632), the king's death in 651 gave birth to a new reckoning. This is called the Post Yazdgerdi Era (PYE) by which various coins in the east of Ērānšahr, as well as the north, the area of Tabaristan, are dated. As such, the early post-Sasanian and early Islamic coins could have been dated by either Hijri (year one: 622 CE), Yazdgerdi (starting in 632) or Post Yazdgerdi (year 1 at 652) eras.[35]

Figure 6: Early Arab-Sasanian issue with the bust and name of Khosrow II, with a marginal crude, Pahlavi style *bismillah* on obverse 3', mint ŠY/ŠB (?), year 29 YE (661)
(Leu Numismatik AG, Web auction 14, lot 1773)

The coins of Muslim governors of Ērānšahr, mostly governors of Kufa and Basra with various levels of authority in Khuzistan, Fars, and further east in Kerman and Sistan,

34 Vondrovec 2014, 527-44.
35 Malek 2019, 687-89.

reflect a period of struggle for authority in the region.[36] The earliest of these are coins issued in the name of the Sasanian king of kings, Khosrow II, which cover a wide range of mints and years, and are most likely the result of a re-use of old dies from the mints that slowly fell into the hands of the Muslims. These coins are normally only identifiable as Arab-Sasanian because of the inclusion of various Islamic formulae, including *bismillah* 'in the name of God,' normally on their margins.[37] The earliest coins issued are by the governor of Basra (mint mark BACLA) 'Abdallah b. 'Āmīr. The coins of 'Abdallah mostly bear the date in Yazdgerdi Era, following the Sasanian conventions,[38] and carry the name of the governor in the Pahlavi script, either as 'pdwl' or occasionally, even "translated" into Middle Persian as 'pdwl' y 'amwl'n.[39]

The most prolific issuers of Arab-Sasanian coins, however, are a father and son pair who dominated the rule of the Muslim-controlled parts of Ērānšahr during the rule of the Sufyanid caliphs (661-684). Ziyad b. Abīhī (or ibn Abu-Sufyān) and his son 'Ubaidallah were governors of Basra and often Kufa from 665 to 684, helping organise the former Sasanian domains under the new government. Ziyad b. Abīhī[40] a newcomer with little connection to the higher echelons of power, was adopted by the caliph Mu'awiyah I as his brother, evidently the result of an affair of Abu Sufyān with a prostitute, perhaps of Iranian background.[41] Ziyad, as governor of 'Iraq based in Basra, struck coins early on, but became prolific after 670. Early coins were issues in Basra, as well as places further east in Fars, including Bishapur (BYŠ) and Dārābgird (DA/DAP).[42]

In 674, after the death of his father and a brief interregnum of other governors, 'Ubaidallah b. Ziyād succeeded his father as the governor of 'Iraq and the rest of the former Sasanian territories.[43] 'Ubaidallah was an energetic governor with prolific issues covering many of the known Sasanian mints, as well as new mints such as Basra (BCLA) and Kufa (AKWLA) (Fig. 7).[44] Among these, Basra, the most prominent centre of Muslim control in the former Sasanian territories, dominates issues in range of years and in total production.[45] Coins of 'Ubaidallah use Yazdgerdi, Post Yazdgerdi and Hijri eras depending on the place of issue and year. Limited issues of copper from mints

36 For a general survey, now see Malek 2019, 25-33.
37 Malek 2019, 288-98 (sec. 9.32); Gyselen 2000, 70 for the limited copper issues.
38 Malek 2019, 251-54.
39 Malek 2019, type 251.
40 Malek 2019, 329-33.
41 Hasson 2002; Malek 2019, 25-26.
42 Malek 2019, 26.
43 Robinson 2000.
44 Malek 2019, 315-20. Although 'Ubaidallah issued coins in Khurasan as well, many of the coins from Khurasan during his governorship are issued by his brother and sub-governor in Khurasan, Salm b. Ziyād (Malek 2019, 311-313).
45 Malek 2019, 318.

of Ardashīr-Khurra/Gūr (ART) and Stakhr (ST) in Fars[46] also exist for ʿUbaidallah, although usually copper issues appear to have been left to local governors and rulers.

Figure 7: Silver coin of ʿUbaidallah b. Ziyād, mint DA, year 43 (PYE = 674 CE)
(Leu Numismatik AG, web auction 15, lot 2583)

In 683, and with the death of Yazid I, Basra and the rest of lower ʿIraq (Ar. as-Sawād), fell into the hands of Mus'ab b. Zubayr, the brother of Abdallah b. Zubayr, a claimant to the caliphal position.[47] The Revolt of Ibn Zubayr in Mecca had started after the disputed succession of Yazid I. After Yazid's death in 683, the legitimacy of Ibn Zubayr, strengthened by the military success of his brother Mus'ab, started what is called the Second Fitna in Islamic history.[48] Lasting until 692 and only crushed by the famous al-Hajjaj b. Yusef al-Thaqafi on behalf of the Umayyad caliph Abdulmalik b. Marwan, the claim of Ibn Zubayr found much reception in former Sasanian territories. Various governors sent by Ibn Zubayr issued coins in Kerman, Fars, Khuzistan, and as-Sawad.[49] The name of Ibn Zubayr, written as 'pdwl' y zubyl'n or a variant, appears on coins issued in major mints such as Bishapur (BYŠ), Ardashir-Khurra (ART) and a prodigious number of mints in the Kirman region.[50] These coins were issued mostly by the local governors sent by Mus'ab to rule over these regions. Mus'ab's own coins, issued from a number of mints including Basra and possibly as east as Nishabuhr (NYŠ) in Khurasan.[51]

46 Gyselen 2000, type 1.
47 Bahramian & Lahouti, 2008.
48 Madelung 1981.
49 Malek 2019, 30-31.
50 Malek 2019, 259-62.
51 Malek 2019, 305-306.

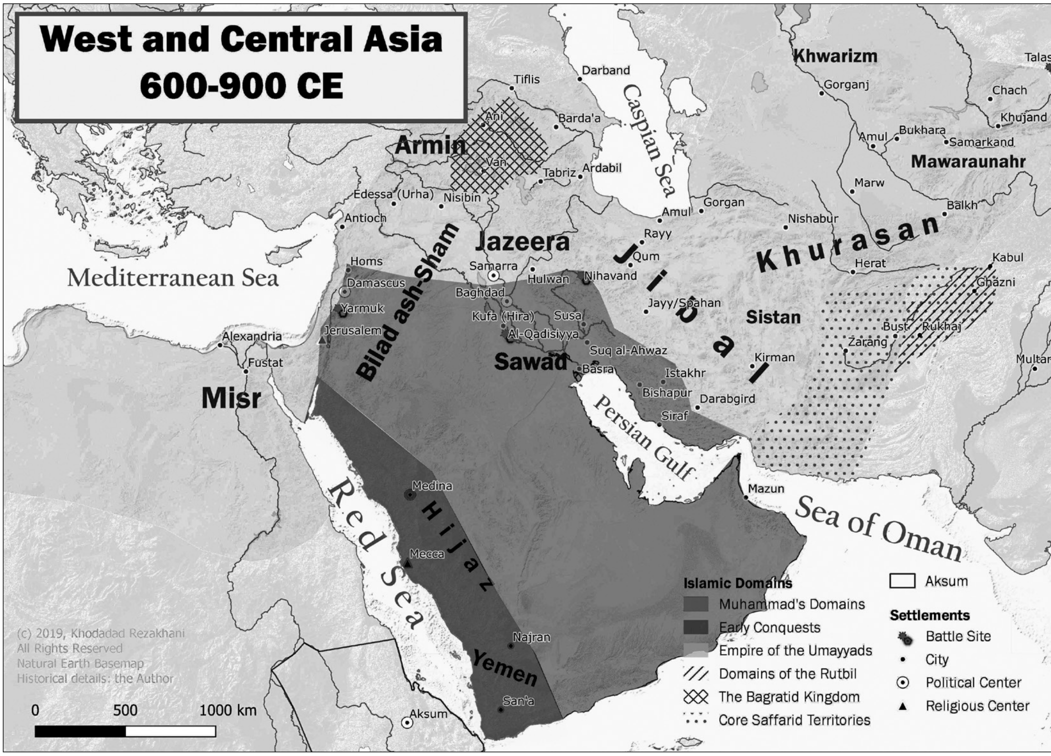

Figure 8: Early Islamic West Asia. Map by the author.

The reversal of the Zubayrid fortunes in 692 resulted in the final establishment of the Marwanid ʻUmayyad power. Al-Hajjaj b. Yusef who had defeated and executed Ibn Zubayr in 692 was appointed to the governorship of ʻIraq and the east. Hajjaj's coin issues include fewer mints, but appear to have a wider range of designs, creating great variations on their Sasanian models.[52] They also mention the names of local governors whose identity we know from copper issues, including a certain Mansūr.[53] While the coin reforms of the caliph Abdulmalik, first introduced by gold issues from Syria in 696,[54] eventually became the dominant form of currency in the Muslim world, Arab-Sasanian coins issued by al-Hajjaj and others continued at least until 700. These coins were also issued from peripheral regions of the empire at least for another century, marking the independence of rulers in Tabaristan, Bactria, Kabul, and Zabulistan long after their ceasing in the centre of the caliphate.

52 Malek 2019, 277-83.
53 Malek 2019, 281; Gyselen 2000, types 20 & 22.
54 Treadwell 2009.

Coins from the edge

In reconstructing the history of the early Islamic rule over former Sasanian territories, the testimony of later historians such as al-Tabari are regularly taken as primary.[55] In these narratives, the role of the central government – whether in Medina, Kufa, or Damascus – is assumed to be primary. However, considering that these histories are products of many centuries after the events,[56] it is useful, and perhaps necessary, to make use of contemporary sources. While the textual sources such as Armenian and Syriac testimonies have been used in this way,[57] the evidence of the coins is less considered for what it can teach us about the period.

The coins issued by the governors (Amīrs) of the new caliphal system, such as Ziyād and his son ʻUbaidallah, provide a glimpse into the spread of caliphal power into the Sasanian territories. However, they also convey the image that the governors were in fact in effective charge of the newly conquered or capitulated territories, without much resistance.

An example of how coins can bring forth an image different from the centralising narrative can be gleaned by considering local issues of southern Iran. These are a group of coins, mostly localised in the areas of Fars and Khuzistan, minted in parallel with the early Arab-Sasanian coins of the Muslim governors such as ʻUbaidallah. The coins, almost exclusively issued in copper,[58] are generally listed as part of the Arab-Sasanian series, partly because of the appearance of the name of a few of their authorities on contemporary Arab-Sasanian coins.[59] Stylistically, however, they should probably be called a Byzantine-Sasanian series, as they are often influenced by both Byzantine and Sasanian coins.[60] They occasionally include a double portrait of the Byzantine emperor Heraclius and his son Constantine III and even carry the cross signs on the crowns and in the field between the two portraits. Some coins also bear the Byzantine reverse legend of a capital M or a cross on the pedestal on their reverse, replacing the normal Sasanian reverse of the fire altar with attendants.[61] These issues sometimes bear the names of local Iranian officials such as a certain Yanbūd/Gyānbūd, the reverse of whose coins in fact bears neither a fire altar nor a cross and is rather dominated by Pahlavi legends (Fig. 9).[62]

55 For a detailed study, with a concentration on al-Baladhuri's Futuh al-Buldan, see Lynch 2019, particularly chapter 3.

56 Donner 1998, 174-82.

57 Hoyland 1997 for a comprehensive study, as well as Palmer 1993, Thomason's translation of Sebeos 1999, as well as Hoyland 2011.

58 Some of the authorities, including Farrokhzad (Malek 2019, 356; Gyselen 2000, Type 2), Mansūr (Malek 2019, 357) and Gyānbūd (358) are also mentioned on silver coins of Muslim governors.

59 See Gyselen 2000, 60-68 (and table 15c for different types) and Malek 2019, 358-360 for some examples and studies of these coins.

60 Gyselen 2000, 60.

61 Gyselen 2000, 66-68.

62 Malek 2019, 358.

Figure 9: copper issue of Gyanbud, found in Qasr-ī Abu Nasr (Old Shiraz, Fars)
with double Byzantine busts (Heraclius and Constantine?) on the obverse and a single attendant and diminutive altar on the reverse, accompanied by a large Pahlavi inscription
(Stephen Album Rare Coins, auction 39, lot 78)

At the same time, other local copper issues of Fars and Khuzistan carry icons and legends that have references to local Iranian symbols of power and authority, including legendary figures such as Gōpatšāh.[63] Other coins depict the bust of the issuing authority in frontal pose (Fig. 10), rare for Sasanian coins but more common for Byzantine ones.[64] Some coins also bear a mixed iconography of Byzantine, Sasanian, and Islamic ('standing caliph') figures, while their legends include both Arabic and Pahlavi.[65] Some of these coins, bearing mint marks, appear to be local issues made only for local circulation, and benefitting from greater stylistic freedom.[66]

Figure 10: Undated copper issue from the mint BYŠPHR (Bīšāpur, Fars)
The obverse has a full bust with bust and the legends DARAY (Dārāi), while the reverse includes a Gopatshah wearing a late Sasanian (Khosrow II?) crown and bearing the mint mark ABAD BYŠPHR ('Prosperous Bīšāpūr')
(Leu Numismatik AG, web auction 14, lot 1795)

63 Gyselen 2000, 64-65, and types 6-8; Malek 2019, 358.
64 Gyselen 2000, 59 (table 15b).
65 Gyselen 2000, 91-98 for a full range of these legends and formulae.
66 For example, Gyselen 2000, types 37-40 from Susa, where the local scope is specified by Pahl. *Šuš ravāg* "valid/current in Susa." Also type 36 for Rayy.

On the margins of the Sasanian world, and outside the direct control of Muslim governors, various local authorities issued coins in both Sasanian and Arab-Sasanian styles. Chief among these are the authorities in Tabaristan who, despite the late start of their coinage, continued to issue coins in Sasanian style. The earliest authority to issue coins in Tabaristan was a local ruler named Farrukhan who issued silver drachms starting in 711 (Fig. 11).[67] Supposedly a descendant of Gīl Gāvbāra, the governor of the southern Caspian coast region of Padishkhwargar during the rule of Yazdgerd III, Farrukhan's coins show a revival of Sasanian coinage, even after the reforms of the coinage introduced by the caliph Abdulmalik I in 696.[68]

Figure 11: silver issue of Farrukhan, the Dabuyid Ispahbed of Tabarestan, mint Tabaristan, PYE 75 (727 CE) (Stephen Album Rare Coins, auction 39, lot 2115)

Aside from Tabaristan, and contemporary with the early Muslim governors such as Ziyād b. Abīhī and ʿUbaidallah, the authorities in east Iran, including the regions of Bactria/Tukharistan, Ghur, and Zabulistan, were also issuing coins. These coins are continuations of local issues of the "Hunnic" (Nezak, Alkhan, and Hephthalite) dynasties of the region, as well as Sasanian influenced issues.[69] The earliest of these issues, the Sri Shahi group, are devoid of any Arab-Sasanian or Sasanian influences (aside from the older Sasanian influence on silver issues of the East).[70] These cannot be dated with certainty, although it is safe to assume that they were issued before any Muslim campaigns in the east.

The next series of coins from the region, the so-called Later Nezak coins,[71] are similarly devoid of Arab-Sasanian influences. However, at least one copper type that can be

67 See Malek 2004 for a complete treatment of Tabarestan coinage.
68 Treadwell 2009; Malek 2019, 337-45.
69 As Vondrovec (2014, 511) reminds us, it is a good idea to keep in mind that the entire silver issues of the "Iranian Huns" (including issues under the Western Turk dominance) followed the Sasanian monetary system.
70 Vondrovec 2014, 512-15.
71 Vondrovec 2014, 515-18.

attributed to this series, types 217 and 271B, bears the Bactrian legend ζοναδο "Zonado".[72] If correctly attributed, this is the same person as *Zhulad Gōzgān*, known from his sub-Arab-Sasanian coins from approximately 683 (Fig. 12).[73] This and other issues from the east, both Arab-Sasanian (or the so-called Arab-Hephthalite)[74] and local productions continuing Hunnic issues[75] show an independent line of power in the region. In fact, the Arab-Hephthalite influenced coins continued to be struck in the east long after the purely epigraphic reform coins were issued by the caliph Abdulmalik b. Marwan in 696. Among these are the issues of Tegin, "Khurasan Shah" and his successors, including his son Phrom Kesar "the Caesar of Rome."[76] These issues, similar to the coinage of Tabarestan, extended beyond the rule of the Umayyads, both geographically and temporally, as they were minted well into the ʿAbbasid period as well.

Figure 12: silver issue of Zhulad Gozgan, mint ANBYR, year 68 AH (688 CE)
(CNG auction 106, lot 926)

Conclusion

The numismatic evidence for the history of the late Sasanian and early Islamic Ērānšahr (the Sasanian domains) provides us with fascinating alternative stories of the rise of Islamic rule in this region. Considering the complex local history of the region in the second half of the seventh century, these coin types reflect the power negotiations between various actors in the period of early conquests. Ranging from the issues of the Sasanian pretenders to the Arab-Sasanian issues, and a bewildering array of local issues, these coins can be used to construct a narrative of the waning of Sasanian power that might provide correctives to the stories given by later historians.

72 Vondrovec 2014, 520.
73 Malek 2019, 334; 403-405.
74 Malek 2019, 399-408
75 Vondrovec 2014, 411-535.
76 Vondrovec 2014, 538-55.

I have elsewhere suggested that the transition from the late Sasanian conquests in the Near East to the early Islamic conquests can be viewed from a different viewpoint.[77] This revolves around the presence of mercenaries and warlords in the southern theatre of war, the Sasanian *kust* (military province) of the South/Nēmrōz. These warlords brought about the first wave of the conquests or reshuffling of control which was later attributed to the early Islamic armies. The numismatic evidence, some of which is laid out in this paper, provides evidence to support this speculation. The presence of Byzantine influenced local copper issues, as well as a wide range of local authorities using various iconographies, tells the story of autonomous actors in this arena. The interactions of these authorities, viewed in the context of the efforts of various Muslim governors of Basra and Kufa to take control of the region, provides a fascinating picture of competition in Khuzestan, Fars, and beyond in the late Sasanian and early Islamic periods.

Author

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77 Rezakhani 2019, 243-44.

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The creation of the Australian Centre for Ancient Numismatic Studies, Macquarie University[1]

Kenneth A. Sheedy

Abstract

The Australian Centre for Ancient Numismatics was established at Macquarie University in 2000. This was an unusual event for there are few numismatic research centres in any university around the world. It was also an important new institution within Australia for ancient world studies. This article reviews its establishment through a bequest from Dr. W.L. Gale and his wife Mrs. Janet Gale. It looks at their aims and plans. It also examines the means by which ACANS seeks to pursue the goals set out in the centre's constitution. Special note is made of the role of the Gale numismatic collections in promoting research and the teaching of numismatics. Finally, the article examines something of the diverse activities which ACANS pursues to encourage student involvement and public interest in the discipline of numismatics.

Keywords

[ACANS] [Australian Centre for Ancient Numismatic Studies] [Macquarie University] [Numismatics in Australian Universities] [Dr W.L. Gale and Mrs Janet Gale].

The foundation of a new numismatic research centre is a remarkable event. It is even more remarkable as a numismatic centre within a university. There are few centres for numismatic research. Perhaps the most famous, the American Numismatic Society, a private body founded in 1858, houses a large numismatic collection, an extensive library and a curatorial staff which conducts the teaching of numismatics.[2] One could also mention *L'Istituto italiano di numismatica* founded in Rome in 1912 and its creation, the *centro internazionale di studi numismatici* in Naples.[3] The *Institut für Numismatik und Geldgeschichte der Universität Wien* was founded in 1965; until the beginning of the 21st century this was the only numismatic centre to reside within a university and to integrate its activities within a university's teaching and research profile.[4] It describes itself on its webpage as "the only independent university institute of this orientation in

1 I wish to thank Mrs. Janet Gale for her valuable contribution to the writing of this paper. In particular I wish to thank her for outlining the steps by which the idea of a numismatic centre in Australia came into being.

2 American Numismatic Society n.d. (web addresses in bibliography)

3 *L'Istituto italiano di numismatica* n.d.

4 Emmerig, 2005.

Europe and at the same time the only place where numismatics and monetary history can be studied in its full methodological and technical breadth…."[5] The launch of the Australian Centre for Ancient Numismatic Studies (ACANS) at Macquarie University in 2000 then marked only the second occasion on which a university, in any part of the world, had made the decision to create a centre for research and teaching in this discipline.[6] Furthermore, it might claim to be one of a very first small group of ancient world studies research centres in Australia offering facilities (notably a world-class collection and a library of the first rank focused on the discipline), funding opportunities for visiting scholars and students, a program of public engagement through lectures and publications, and an involvement in the teaching units and general research profile of the university.[7] Its nearest equivalent is the Trendall Centre, established at La Trobe in 1998 on the basis of a bequest from Professor A.D. Trendall (who died in 1995), to address Mediterranean Studies but with a particular focus on Southern Italy, especially the painted pottery from the region.[8] To celebrate the fact that ACANS has now been in operation for some twenty years it is worth reviewing the circumstances of its creation and the history of its early activities.

ACANS came into existence because of the determination and wishes of Dr William (Bill) L. Gale and his wife Janet, both from Sydney (Fig. 1). Bill studied Arts and then Law at Sydney University and graduated as a lawyer in 1960. He practised law for about five years when he decided to work more actively in the family business which he continued to do until his father's death in 1991. Over the intervening years he and Janet travelled extensively indulging their joint passion for ancient history and the arts.

Fig.1. From l. to r.: Dr W. L. Gale. Mrs Janet Gale, Professor Edwin Judge, Ass/Prof Kenneth Sheedy, and Ass/Prof Ted Nixon.

5 *Institut für Numismatik und Geldgeschichte*, *ueber-uns* n.d.
6 Sheedy 2015.
7 Australian Centre for Ancient Numismatic Studies n.d.
8 A.D. Trendall Research Centre n. d.

In 1995 Bill enrolled in an Arts Degree at Macquarie University where he continued his studies in the Department of Ancient History, eventually submitting his doctoral thesis “Procedure in the Roman Republic Senate” in 2005.

Bill started collecting coins during the 1980s, but it was not until the 1990s that he formulated the view of setting up a Foundation for the study of ancient coins which he originally thought could be implemented after his death. In 1992, Bill and Janet attended a Mycenean Seals Conference in Hobart, Tasmania and it was then that Bill thought if they can study Mycenean Seals in Australia, then why not study ancient coins in Australia as well? So, the thought of ACANS was born.

During the two decades 1980 to 2000 he undertook an ambitious program of collecting coins in three areas. These were the Greek cities in Southern Italy, the Roman Republic and the issues of the mint at Rome under the Emperor Hadrian. His studies under the charismatic teachers Associate Professors Tom Hillard and Lea Beness at Macquarie fired a strong enthusiasm for the moneyers of Republican Rome. The Roman Emperor Hadrian was a personal hero in history.

Bill Gale was an early member of the Australian Society for Ancient Numismatics, a body of enthusiastic Sydney collectors who met monthly at the office of Noble Numismatics.

By 1999 Bill had changed his plan and decided a better option was to set up the Foundation in his lifetime so he could personally address any problems that may occur in regard to a possible university home and with the various governmental bodies that might be involved. So, he approached Macquarie University with the proposal that a numismatic research centre be established at this institution based on an appropriate endowment and with the donation of the Gale numismatic collection. The Vice-Chancellor of Macquarie University at the time, Professor Di Yerbury, saw the potential of this centre to enhance the work and reputation of its already flourishing Department of Ancient History. After some discussion, focused on the wording of the centre’s constitution, the university moved to bring this new body into existence by establishing a Board of governance (as set out in the constitution). The founding members of the Board were Professor Di Yerbury as vice-chancellor of the university, Dr and Mrs Gale, Professor Sam Lieu, Assoc. Professor Ted Nixon, and Mr Colin Pitchfork.

In 1999 the Board conducted a search for a director for the Centre, and appointed Dr Kenneth Sheedy, then working on a British Academy project (*Sylloge Nummorum Graecorum*) at the British Museum and a former Deputy Director of the Australian Archaeological Institute at Athens. He arrived at Macquarie in 2000.

The Constitution for the Centre which had been drawn up by the University and Dr Gale provided the following aims:

- To establish a Centre of international excellence in the study of ancient numismatics.
- To act as a major linkage to national and international research programs in the study of ancient numismatics.
- To facilitate reciprocal visits by staff members with other Universities, Museums or similar bodies in support of the Centre's objectives.
- To assist qualified Macquarie University students to participate in the study of ancient numismatics both at Macquarie University and elsewhere.
- To arrange publication of the results of the Centre's research, and to publish catalogues of Macquarie University's ancient coin collection.
- To arrange lectures on ancient numismatics for Macquarie University Ancient History students.
- To undertake such ventures, incidental or conducive, that would bring about the achievement of the above objectives.

As noted above, to facilitate these aims Bill offered his numismatic collection to ACANS as a loan with an eye to donation if the Centre proved successful (the collections were gifted to Macquarie University after this death in 2007). It would be no exaggeration to claim that Dr Gale had amassed one of the most important collections of ancient coins, and indeed Mediterranean antiquities, yet seen in Australia.[9] There were three principal parts to the Gale collection. The first consisted of some 1,267 coins minted in the Greek cities of South Italy.[10] The range was comprehensive. It is evident that as the plan to establish a numismatic research centre took shape Dr Gale made an effort to make each of his collections complete in a manner that would facilitate study and research. In the case of the South Italy collection, all of the earliest minting cities, from the mid-sixth to the early-fifth century BCE, are represented. This includes the main mints such as Metapontum but also the minor mints, some quite obscure such as Siris. To this end he built up a very strong showing of the different phases of the local form of coinage, the incuse coinage, with over 80 examples – giving ACANS one of the best collections in the world of this distinctly Italian form of coin. The second collection (585 coins) consisted of Roman Republic Coinage. Here Dr Gale was loosely guided by the catalogue of Michael Crawford's *Roman Republican Coinage*.[11] It features fine examples of all denarii issues that are not excessively rare. The third collection (393 coins) is devoted to the Emperor Hadrian. In the creation of this collection he was guided by the catalogue of the British Museum.[12] Each of these collections is of outstanding size and quality. There are also two 'minor' collections. The first was a collection of coins showing the portrait of each emperor and empress (except the rarest). The second was a collection of just over 130 staters and drachms of Corinth and Corinthian colonies. With the donation

9 Sheedy 2012.
10 Sheedy 2008.
11 Crawford 1974.
12 Mattingly 1976.

of his numismatic collection to ACANS and Macquarie University, Dr Gale emerged as the most important donor of Mediterranean antiquities to an Australian institution since Charles Nicholson and his bequest to the University of Sydney in 1860.

One of the clear aims of ACANS was to undertake research into the Gale collections. This was seen as a means of establishing its reputation as a centre of excellence in the discipline – a key goal if ACANS was to be successful. It was also envisaged as a means of attracting students and scholars to ACANS to pursue their own studies. Bill Gale himself had published one modest monograph on ancient coinage – selecting his favourite mint from South Italy, Kroton, for an annotated catalogue of his holdings: *The Sacred Tripod. Kroton and its Coins*.[13] Study of the South Italian collection was recognised as a priority. In 2008 the collection was published as *Sylloge Nummorum Graecorum Australia I* by Kenneth Sheedy.[14] The lengthy research involved determining the sales provenance of all coins, which in some cases could be traced back into the 19th century. It also provided a springboard into a collaborative project with the Australian Nuclear Science and Technology Organization. This project to investigate the complex processes by which incuse coinage was minted now involves the ANSTO scientists Dr Floriana Salvemini, Dr Vladimir Luzin and Mr Scott Olsen.[15] It has produced seven articles on the application of neutron tomography and neutron diffraction analysis for the study of incuse coinage and more broadly for scientific methods in archaeology (archaeometry).

The role of ACANS as a centre for learning in ancient history and archaeology was addressed on a number of different levels. In terms of teaching, lectures on numismatics were offered in a range of established courses but initially there was also a dedicated post graduate course in numismatics. More recently the numismatics course has been replaced by participation in a Master of Research Degree unit which brings interns to ACANS to work on projects (in 2020 there were five interns at ACANS preparing a catalogue of the Gale collection of Corinth and Corinthian colonies). ACANS has offered two junior fellowships for post-graduate students since 2001. These provide funding for participation in seminars on numismatics and for research on an approved topic usually linked to the student's thesis. The Centre has also funded the visits of a senior fellow and a scholar to present the Gale Lecture in Numismatics; typically, the same visitor performs both roles. The director of ACANS, who teaches courses in archaeology at the university, supervises theses in which numismatics plays a key role.

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13 Gale 1995.

14 Sheedy 2008.

15 Salvemini *et al*. 2018.

Fig. 2. The new ACANS room at Macquarie University (opened 2020).

2020 marks the 20th birthday of ACANS. In this year the centre moved to architect-designed purpose-focused premises in the newly constructed Arts Precinct at Macquarie University. The new space (Fig. 2), with its expanded facilities (workstations, seminar table, extended library shelving, enlarged vault) underlines the determination of the Department of History and Archaeology (itself formed in 2020) and the Arts Faculty to highlight ACANS as a research centre of international standing. This COVID-dominated year has also seen a significant shift in the strategies for teaching and the promotion of research. A great deal of effort has gone into making sure records of all coins in the collection (now more than 6,000) are present on an electronic management database (EMu). In 2020, these records (in an abbreviated form) were made available to staff and students with the launch of the University Collections portal. It is now possible for students to research relevant numismatic data from ACANS as part of their taught courses (mostly online) or for higher degree research. The hope is that in the future this data can be accessed by the public. An online Numismatic research seminar – NUMISMA – has been launched which is hosted by senior post-graduate students (in 2020 it was directed by Ms Charlotte Mann and Rachel Mansfield). This has quickly gained a strong online following, with a considerable international audience. The monthly series has featured presentations from leading numismatists from around the world, a line-up that we could never match in the sporadic series of seminars and lectures from visitors to Sydney. Finally, as noted above, in 2020 ACANS welcomed its first cohort of interns for studies as part of their post-graduate Master of Research Degree course.

The demands on universities have increased dramatically over the last few years, and Australian institutions have not been exempt. We are moving towards a smaller range of degrees with a more constrained range of courses, all taught by fewer staff. The relevance of ancient world studies continues to be challenged, especially given the priority to recognise the importance of Australian heritage and our Asian geopolitical setting.

A numismatic centre in Australia needs to find a role that is more than the custodianship of artefacts. The constitutional aims of ACANS stress the centre's commitment to teaching and research. Going forward, numismatics at Macquarie University must find its role within the interdisciplinary project of material culture studies. The curation of its collections now needs to be addressed within the framework of cultural heritage management.

Author

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Ray Jewell Award Recipients

Silver Medal (for services to the NAA)

Raymond T N Jewell (posthumously), 1998
John Hope, 2003
W James Noble, 2004
John R Melville-Jones, 2011
Leslie J Carlisle, 2011
Walter R Bloom, 2013
Peter D Lane, 2015

Bronze Medal (for best article from two journals)

John Sharples. Vol 7, *Catalogue of Victorian trade tokens*.
Paul M Holland. Vol 9, *Master die types of Australian halfpennies*.
Peter Lane and Peter Fleig. Vol 12, *London private museums and their tokens*.
Richard A J O'Hair and Antoinette Tordesillas. Vol 13, *Aristocrats of crime*.
Peter Lane and Peter Fleig. Vol. 15 *William Henshall*.
Christopher Addams. Vol 18, *Counterfeiting on the Bermuda convict hulk* Dromedary.
Mark Stocker. Vol. 19, *The Empire Strikes Back.*
Helen Walpole. Vol 22, *The role of sporting medals in a sports museum.*
Peter Lane. Vol 23, *S. Schlank & Co Ltd: medal and badge makers of Adelaide 1887-1971.*

Paul Simon Memorial Award Honour Roll

The Paul Simon Award was established in 1977 by Mrs Jessica Simon of Ballarat, Victoria, in memory of her late husband, Paul Simon. The award is given for outstanding contribution to the Australian numismatic fraternity.

Special Silver Award: 1977, R T N (Ray) Jewell, Australia

Bronze Award

1.	1977, J Gartner	Vic
2.	1977, W J Mira	NSW
3.	1977, R M Greig	SA
4.	1977, R V McNeice	Tas
5.	1977, G D Dean	Qld
6.	1977, S J Wilson	WA
7.	(Allocated as the silver award to Ray Jewell)	
8.	1978, O C Fleming	NSW
9.	1978, M B Keain	SA
10.	1979, T M Hanley	NSW
11.	1979, A Ware	NSW
12.	1981, C J Tindall	SA
13.	1983, D G Sandeson	Qld
14.	1984, R L Henderson	Vic
15.	1985, L J Carlisle	NSW
16.	1986, H Powell	WA
17.	1987, N Harper	Tas
18.	1989, T W Holmes	Tas
19.	1990, D G Stevens	Qld
20.	1991, L T Pepperell	Vic
21.	1991, C Heath	Tas
22.	1993, C E Pitchfork	NSW
23.	1994, L P McCarthy	Qld
24.	1995, F S Seymour	SA
25.	1996, J Chapman	Vic
26.	1997, S McAskill	WA
27.	2001, D Junge	Vic
28.	2001, F Dobbins	NSW
29.	2001, G Farringdon-Davis	Vic
30.	2003, P Lane	SA
31.	2004, F Gare	WA
32.	2006, M C Williams	Qld
33.	2006, J A Hanley	NSW
34.	2007, G Shea	Qld
35.	2007, W R Bloom	WA
36.	2008, R Sell	NSW
37.	2008, G D Snelgrove	Qld
38.	2009, M P Vort-Ronald	SA
39.	2010, J W Cook	Qld
40.	2011, P Fleig	SA
41.	2013, B V Begley	Qld
42.	2014, S Appleton	Qld
43.	2015, T J Davidson	Qld
44.	2016, F J Robinson	Vic
45.	2017, B M Newman	SA
46	2018, M Carter	Qld
47	2019, G Petterwood	Tas

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Guidelines for authors

Submitted articles can be on any worthwhile numismatic topic, keeping the following guidelines in mind:

Subject matter: should offer new information or throw new light on any area of numismatics, ancient through modern, though preference is given to Australian and New Zealand related material.

Submitted articles: should be as much as possible the result of **original research**. Articles must not have been published previously or be under consideration for publication elsewhere.

All submitted articles are refereed before being accepted for publication

Submissions:

Articles: should be sent as an email attachment as an MS Word file, .doc or .rtf format following the layout in the last volume.

Images and tables: submit article images and tables individually and separately to the text document in high resolution JPEGs or TIFFs for images, or a separate MS Word or MS Excel document for tables. DO NOT supply images and tables only within the body of your document.

Author statement: supply a brief numismatic biographical statement which will be appended to the published article with full name and email address.

Article format details:

References: the JNAA uses **footnote referencing**. Text reference numbers are placed after punctuation marks e.g. end.[3] They follow sequentially through the text.

Images and tables: all images must be referenced in the text. Text references to images should be numbered as (Fig. 1), (Figs 1 and 2), (Table 1), Tables 1 and 2) etc. The location of images and tables needs to be indicated by <Insert Fig. 'x'> with figure caption text.

Lists: all lists should be presented as tables.

Captions: figure and table captions should explain images fully and independently of the main text. **All images must be referenced and have copyright clearance**.

Quoting: use quotation marks for quotations under two lines. Italicise and indent quotations longer than two lines. All quotes need to be referenced.

Proofs: Authors will receive a .pdf proof of their article for comment by email. Author comments can be made by placing comment tabs in the .pdf, or listing corrections by page, column and line number in a separate document. Corrections must be received by email by the Managing Editor no more than five days after receiving the proof. Changes to the edited text at the proofing stage will only be permitted in exceptional circumstances at the sole discretion of the Managing Editor.

Enquiries: please direct all communications to the Managing Editor, Dr Gil Davis at editor@numismatics.org.au.


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