Introduction

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Latin and the Roman Empire

Language, Technology, and the pax Römäna

When Latin emerged as a spoken language, in Italy sometime in the first millennium BCE, it expressed the needs and the world view of people who lived in small farming or sheep- and goat-herding communities, lived in stick frame and mud huts, in communities of perhaps 300 people. By the height of the Roman Empire, c. 160 CE, Latin had become the working language of an empire that stretched from England to North Africa, Egypt and the Persian Gulf.

The cultural and economic dominance of the Roman Empire was in many ways comparable to the cultural and economic influence enjoyed by first-world countries today. Under the Romans’ extensive system of local administrators and military “peace-keepers,” an unprecedented level of cultural and economic exchange was taking place. The pax Römäna (Roman peace), maintained by the Roman military and administrative presence throughout the Empire, allowed material goods, culture, ideas and people all to travel from place to place within the (more or less) safely patrolled areas of the Empire. Well-constructed roads, some of which remained in use until modern highways replaced them, led between provinces; aqueducts brought water into the increasingly large cities, and sewers brought out the waste. Technology flourished; the demands of urban engineering and the need for military dominance provided impetus for technological development. Medical science, a focus of Greek intellectual pursuit since the days of Hippocrates (5th century BCE), was a hot area, as doctors published and discussed their theories of how the human body worked. Astronomy, horticulture, marine science, and meteorology, were all at a crux where traditional knowledge was increasingly questioned and incorporated into more scientific systems of thought. Some scholars believe that Rome was on the verge of an industrial revolution by the 3rd century CE. But it didn’t happen; it didn’t happen, in fact, until 1500 years later.

* This text uses the terms CE (common era) rather than AD, and BCE (before the common era) for BC.
When the Roman Empire began to disintegrate, it was not so much because of the rampaging barbarians of our romanticized imaginations, but because of changing economies, bureaucratic difficulties, and the inevitable processes of social change. The fading of the *pax Rōmāna*, and the lessening of the material prosperity that had fueled such major technological developments, meant a step backwards in material and scientific endeavors. The failure of international prosperity meant a lessening in international travel and communication. As the international scene faded, the Latin language evolved over time into the Romance languages of Europe (*Romance* is from Roman). Latin itself ceased to be a primary language (one learned at birth by native speakers), but it remained alive as both the language of international communication, and the shared language of science, religion, and literature.

The achievements of the *pax Rōmāna* continued to guide the intellectual endeavors of Europe through the Greek and Roman works of science and literature that were preserved (copied laboriously by hand in monasteries). The science and technology of the Roman Empire continued to offer wisdom and advice to Europeans throughout the Middle Ages and Renaissance. Handbooks such as Vitruvius on architecture, Soranus on medicine, or Columella on farming, were still relevant and still consulted. And when, in the Renaissance, scientific inquiry enjoyed its own rebirth, Latin remained the language in which astronomers and physicians, explorers and cartographers, botanists and zoologists, exchanged their ideas and published their discoveries. In fact, it was not until the beginning of the 20th century that modern languages finally replaced Latin as the means of communication in fields of advanced knowledge.

Because of its privileged position at the beginnings of modern scientific inquiry, Latin remains embedded in modern scientific language, in medical terminology, in the scientific names of plant and animal species, in the names of planets and their features – as well as in philosophy, literature, and particularly the “legal science,” law. And even today, when English has become the language for much scientific and other international communication of knowledge, Latin remains a founding element of the fields of medicine, biology, physical sciences, and law. Latin and Greek have been so important in these fields that it is hard to find a scientific term or biological name that is not related to one of these ancient languages.

Perhaps the most obvious scientific survival is the system of biological nomenclature pioneered by Carl Linnaeus in the 18th century, still in effect today, which uses a two-part descriptive Latin (and sometimes Greek) name for each plant or animal based on its genus (from Latin *genus*, *generis*, *n*, type) and species (from Latin *species*, *speciei*, *f*, kind). Many of the most basic medical and scientific terms come from Latin, as for example, the terms for front and back: ventral (from *venter, ventris m*, the belly) and dorsal (from *dorsum, dorsi, n*, the back). Latin even appears in less formal terms like the medical command “stat” (meaning, right now!, from Latin *statim*, immediately). In astronomy, the names of the planets are the same as in Roman antiquity, the features of the Moon have Latin names (e.g. *Mare Tranquilitatis*, the Sea of Tranquility), and many terms arise from Latin as well.
Rērum Nātūra

Rērum Nātūra is a phrase coined from two Latin words: rēs, which means thing, matter, and nātūra, which means nature or character. When rēs becomes rērum, it changes from singular to plural (things) and also shows possession (of things) – an example of how important endings are to Latin words. The phrase rērum nātūra, then, can be translated as the nature of things. But actually, it is the phrase the Romans used to describe the natural world, or nature itself, as a force that moves the world and the entire universe, surrounding and incorporating human lives. Rērum Nātūra means simply, nature: the incalculably powerful force that makes the world go around.

The Romans’ knowledge of the natural world was based on a long tradition of research and contemplation which extended back into the ancient Greek world. Philosophers like Democritus (ca. 460-370 BCE), who proposed that the world was made up of atoms, and Aristotle (384-322 BCE), who wrote extensively about nature, including the functioning of the human body and the classification of animals, were founders of scientific thought. Romans continued the Greek tradition of scientific enquiry, and authors such as Gaius Plinius Secundus (known as Pliny), in his encyclopedic work Historia nātūrālis (Natural History), continued the tradition of incorporating science and education.

The Romans, like modern scientists, investigated nature and tried to describe the world scientifically, but their perspective on such studies differed from ours in several important ways. Perhaps the most important was that they were under no illusions that humans were more powerful than nature, or that human science could conquer the natural world in any way. Today we are used to creating and witnessing ecological disasters that threaten plant and animal species, and even our own ultimate survival; we are aware that nuclear war, for example, could render the world uninhabitable for ourselves. The Romans, although they were proud of their technological achievements such as aqueducts and international paved roads that visibly changed the landscape - did not feel they could threaten nature. They were all too aware that nature, with its immutable laws and unstoppable processes, its violent weather, rampaging diseases, and embracing wilderness that made up so much of the non-cultivated world - was far more a threat to civilization than civilization is to nature. Nature, they felt, would always offer new marvels, and humans were always dependent on nature’s cooperation for their prosperity and even survival. (All the same, the Romans did make an impact on the environment of Italy. The need for farmland caused the deforestation of much of the Italian wilderness. Hunting for sport and to get animals for the arena, led to drops in some animals populations. And the desire for luxury items, such as ivory-inlaid furniture, began to cause an impact on animal populations even in remote parts of the Empire.)

A second major difference between our world views is the alignment, for the Romans, of philosophy and science. We think of science as hard-edged, research oriented, and factual, while we tend to consider philosophy a more contemplative, uncertain field. The Romans, on the other hand, thought of philosophy as a desire to learn and know about the world, to form theories and test them by logical application, if not by experimentation. Understanding the universe was the ultimate
goal of both philosophy and science, so the two were really aspects of the same study. All of the Romans' writings about nature are infused with this desire to understand the functioning of the world in a complete, holistic way. While our disciplines of science and philosophy might be separate in the modern university, each of us probably has, at the core, the desire for all of our fields of knowledge and all of our curiosities to world together – for our science to open our world view, for our world view to enlighten our science.

I hope that, with this textbook, Latin language will enter the loop, so that history, world view, science, and the insights of an ancient language, run together for a while on the path to a broader understanding of “life, the universe, and everything.”

This text, entitled *Rërum N ätûra* because of its subject matter, introduces the Latin language through the Romans' experience of the natural world, including some elements of daily life and material culture. Chapter One introduces material culture and physical surroundings: the places, tools, and actions of study. Chapter Two focuses on the pattern of life most Romans shared as they made a living by working small farms. Chapter Three focuses on animals, both the wild animals of Italy, and animals from distant lands that Romans mostly encountered in stories – or in the arena. Chapter Four concerns the *mundus*, or universe, a closed system constantly rotating in complex patterns. Chapter Five centers on the sea and the shore, the coastal environment and marine life the Romans knew both from daily life near the Mediterranean sea, and from their travels throughout Europe, Asia and Africa. In Chapter Six, we examine family and civic life. Chapter Seven presents natural disasters (tidal waves, winds, and volcanoes), focusing on one well-documented natural disaster: the destruction of the city of Pompeii by the volcano Vesuvius in 79 AD. Chapter Eight, if we get that far, focuses on the workings of the human body.

Throughout this exploration of Latin language through natural history, I have drawn from the *Historia Nätürälis* (Natural History) of Gaius Plinius Secundus, known in English as Pliny the Elder, a scholar, soldier and administrator who wrote obsessively on topics ranging from javelin-throwing from horseback, to astronomy, to the wars against Germany, to herbs, spices, and medical cures. He died in 79 AD, in the eruption of Mount Vesuvius, when a combination of rescue work and scientific investigation caused more physical stress than his body could take. He published his 37 volume *Historia Nätürälis* in 77 AD, dedicating it to Titus, the Emperor Vespasian’s son and heir. Another influential author in this text is Lucretius, whose poetic work, *Dë rërum nätürâ* (About Nature), is an elegant and thought-provoking study of human goals and accomplishments in the light of a complex natural world. The two writers are almost opposites: Pliny writes in a bald, inelegant, sometimes not very grammatical style, his text bursting with facts and figures, while Lucretius writes with evocative poetic brevity. Both show how deeply the Romans could feel the natural world as a metaphor and a foundation for their own lives as human beings.
Learning Styles, Learning Strategies

One of the absolute truths of learning, especially learning a foreign language in a University setting, is that your learning strategies are more important than the teacher’s teaching strategies. The teacher’s approach, philosophy, and manner can help or hinder you, appeal to or bore you, enlighten or frustrate you, reward or undervalue your particular strengths and skills, suit you perfectly or force you into every classroom activity you hate – but your own learning style, and your ability to get what you need out of your class and your teacher, is the bottom line. This section focuses on learning style and learning strategies, ideas that can help you get what you want out of this course. First, some key definitions:

- **Learning Style** Everyone has a preference for learning in particular ways, and this preference is linked on a deep level with your personality and worldview. Awareness of your innate preferences allows you to understand and help yourself direct your own education more effectively, and also gives you insight into how your teachers, work partners and classmates approach or define course material.

- **Learning Strategy** A learning strategy is a method or technique you adopt to help yourself gain mastery of course material (or anything, really). Learning strategies tend to match up with learning styles – people who have the same learning style will tend to adopt similar learning strategies. Despite this ingrained preference, though, you have control over what strategies you adopt, so you can experiment with what study methods are really working with any given course.

Learning styles: Most scholars working in education see learning style as consisting of different axes, each of which is a continuum between two opposite styles. Everyone is somewhere between the two poles. Some of the most important axes are:

- Active and Reflective Learning Styles
- Sensing and Intuitive Learning Styles
- Visual and Verbal Learning Styles
- Sequential and Global Learning Styles*

**Active and Reflective Learners:** Active learners learn best by doing something with the material as they encounter it, while reflective learners prefer to mull over the material and understand it before they begin to apply it or work with it. In the *Rërum Nätüra* program, active learners might prefer to do the Practicum sections (i.e., exercises) as they go, in order to consolidate their knowledge, while reflective learners might prefer to spend some time with the concepts, vocabulary and reading sections before doing the written exercises. Active learners tend to enjoy group work, where each group has to interact and produce a finished assignment, more

* These divisions and the descriptions which follow are adapted from Felder and Soloman.
than would reflective learners, who may not enjoy working on a project when they are not yet comfortable with the central ideas.

**Sensing and Intuitive Learners:** Sensors prefer more concrete material, and tend to be attentive to details and facts. Intuitors tend to go for the concept first and approach memorizing facts with less enthusiasm. In *Rërum Nätüra*, and in learning Latin in general, sensors have something of an advantage when it comes to learning word endings and recognizing specific forms. Intuitors are often able to put things together well in reading, though, because they enjoy the “educated guesswork” involved in reading another language whose thought world is different from their own. Both sensors and intuitors have to work counter to their preferences sometimes, because both taking intuitive plunges, and learning the nuts and bolts of the system, are important.

**Visual and Verbal Learners:** Visual learners remember and process best what they see, and are often oriented toward diagrams and charts. Verbal learners prefer to hear it. Most people learn best with both kinds of input.

**Sequential and Global Learners:** Sequential learners like to get information in sequence, following logical steps to the final results; they tend to think in steps and stages. Global learners prefer to have the “big picture” before attending to details, and often learn in “large jumps, absorbing material almost randomly . . . then suddenly ‘getting it.’” (Felder & Soloman)

**Learning Strategies**

Just as each learning style has its preferred ways of approaching material, each learning style also has characteristic flaws. For example, Sensors might spend a lot of time learning paradigms and vocabulary, but lose sight of the “big picture” of how to process it in reading. Intuitors might have a good sense of the language and the system of Latin grammar, but fail to integrate the details well enough to work out reading passages that do not make intuitive sense to them.

Because no learning preference or learning strategy is ideal for every sort of problem, students in any course of study may hit a wall at some point in the semester. This is when flexibility and consciousness of working across styles becomes important. Especially if you are feeling frustrated and feel that you have tried to use your typical strategies without success, consider alternate approaches to the material. You may learn from your fellow students - sometimes adopting the study habits of someone with a different learning style can get you over the hump.

During the semester we will spend some class time discussing which strategies are working and which are not, so that you can have a little more control over your approach to the course material.
About This Textbook

Chapter Focus and Vocabulary
Each chapter in this book is organized around a particular set of ideas about the natural world (farm life, wild animals, the cosmos, the ocean, etc.). Consequently, each chapter contains a fairly large vocabulary (about 50 words on average), most of which focuses on a set of related concepts. The chapters are fairly long as well, so you may approach several different grammar topics while working with the same vocabulary. Some essential ideas about approaching the chapter vocabularies:

- Some vocabulary is introduced in opening culture sections, which are written in English, with Latin words given in context. For some people, this is a very helpful way to encounter central vocabulary. Context – knowing something about the overarching range of ideas you will be dealing with – can be a helpful tool for remembering isolated units of meaning like vocabulary words. In these sections, not all vocabulary is introduced, and sometimes, a few of the vocabulary words noted are not included in your chapter vocabulary.
- Each chapter’s written exercises introduce chapter vocabulary and review the vocabulary of the previous chapters; most new vocabulary is translated in sample sentences before you have to translate it in reading exercises.
- In each chapter, the vocabulary list is near the end of the chapter. While we do spend class time examining vocabulary in general, and specific ideas in particular, it is basically the student’s responsibility to find his or her most congenial approach to vocabulary. For example:
  - some students prefer to start studying from the vocabulary list immediately and systematically, to have a good grip on the vocabulary before beginning any reading or grammar study;
  - some students prefer to learn words piecemeal as they go, and study systematically only when they have reached a certain comfort level with the flow of grammar and reading in the chapter;
  - but all students have the job of learning the vocabulary well enough to do well on the quizzes and maintain their reading ability for class participation and other graded work.

Reading Sections
Each chapter has at least two reading sections, which are sometimes paired with exercises that focus on the analytical aspects of reading.

- Reading sections are based on the material described in the English language culture sections. Knowing the subject matter is very helpful in addressing a reading passage in a foreign language, so it is best to go into the Latin readings with a good knowledge of the aspect of rērum nātūra the culture sections describe.
- Reading passages are designed differently. In some, all words that do not come from chapter vocabularies are glossed (translated in margin notes). But
in other passages, some words are left untranslated – generally, words with enough similarity to English, or enough familiarity from the cultural sections, to justify an educated guess. For some learning styles, dealing with unknown vocabulary words is frustrating, but it is a good skill to develop, since making educated guesses is an essential part of foreign language study.

- Because the reading sections are scattered through the chapter, you may have different vocabulary experiences with them. In the first passage, you may struggle more with vocabulary, while by the time you reach the last one you will have had the vocabulary quiz and will know the vocabulary much better.

Written Exercises (Practica)

You cannot learn a language without active practice. In a language like Latin which is generally not used for conversation, active practice means writing. In this text, written exercises called practica (singular, practicum) are interspersed in the text, because if you do not have this active practice, you cannot gain expertise in the language. Plain and simple. Some comments on the practica:

- You can approach the exercises as you like. Your preference will probably depend on your learning style. Some people prefer to do the practica as they go: read the grammar explanation, then immediately apply the knowledge. Some people might skim that day’s assignment or the whole chapter, return to various parts of it, and return to the exercises to bring it all together. Any approach that causes you to end your preparation with completed exercises, is just fine.

- Practica are meant to be completed before class. Our class sessions focus on the practica you have prepared for that day, plus other application (and play) with the material. In most situations, new material will be introduced in the class before you have to do the practica, but sometimes, your first real grappling with new material will be when you complete the exercises. For some learning styles, it can be frustrating to have to apply new ideas without spending extended class time on it, but just bear in mind that the active learning criterion will help you in the long run. Also bear in mind that:

- Mistakes are expected and are just fine in practica. Practica are never graded – the only grade you get is for doing them, period. Do not feel you have to complete all of the exercises correctly. All you have to do is complete them as best you can. Making errors is part of learning a language. Studies show that you learn more by correcting your errors, than by just trying to remember correct answers you did not struggle to arrive at. In this class, errors are part of the learning process. Quizzes and graded homeworks are the places to strive for perfection, and you will approach those only after you have had time to learn from your mistakes during class time.

A note to the students of Fall 2002: I value your feedback immensely. Please let me know what parts of the program you find most and least effective, what you would like to see done differently, what works and what does not work for you, and what you would like more practice with. Future students will thank you.