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[¶] To the reader.

What is humanities computing? Toward a definition of the field.

For Lloyd Reynolds,
who stained the water clear

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"What philosophy worthy of the name
has truly been able to avoid the link
between poem and theorem?"

Michel Serres,
*Conversations on science, culture, and
time*

The application of computing to the humanities originated about 50 years ago, in the late 1940s, when the Jesuit scholar, Father Roberto Busa, began work toward the *Index Thomisticus*, a concordance with critical edition to the works of St. Thomas Aquinas.[1] His enquiry into the idea of "presence" in St. Thomas had led him to the conviction that to understand the idea he had to examine not only the obvious words *praesens* and *praesentia* but also all occurrences of the preposition *in*, a very common item in the Latin of this 10.6 million word corpus. Since no hand-made concordance could do more than sample such a common word, his was obviously a job for the then new technology of computing. In the annals of our field Busa's story is a remarkable one, not the least because of his insights into the implications and consequences of the technology for scholarship so long before most of us now living could pronounce the word "concordance".[2]

One of his more important observations was that computing the humanities is not about speeding up conventional scholarship, or making its performance more efficient or accurate, although all those

improvements can occur, because what we mean by scholarship itself changes in the process. At base this is very old knowledge about what happens to praxis when the practitioner picks up a new tool. To the craftsman a tool is only a mere object when it is in the hands of a novice or an incompetent; mastery of it means that the tool becomes a mental prosthesis, an agent of perception and instrument of thought. [3] If the mind of the woodcarver or calligrapher is not at the edge where tool meets material -- or, more accurately, is recreated at their meeting -- then the job is botched. Whatever was originally meant by the term, crafts are "mysteries" for that reason (*OED* sv 'mystery' 1,2).

We cannot, therefore, rest content with the comfortably simple definition of humanities computing as *the application of the computer to the disciplines of the humanities*, for it omits the very heart of the matter. It fails us by deleting the agent-scholar from the scene and, in the spatial metaphor implied by the preposition *to* (as in "apply pencil *to* paper"), by overlooking the mediation of thought that his or her use of the computer implies. We had forgotten until quite recently that our older scholarly technologies, such as alphabetic writing, the codex and printing, *were* technologies, and that they shaped thought. The cultural sea-change of which the computer is our most prominent manifestation has reminded us. As Régis Debray and others have pointed out, the coming of the new media and, particularly, the growing prominence of the 'electronic book' have suddenly made us aware of the degree to which our disciplines are contingent on the "media-sphere" we inhabit. [4] (Strange that we should have to learn again, and again, the inextricable interdependence of form and content.) Thus it is thankfully more and more difficult these days to speak of the computer as 'just a tool' (ignoring what tools are), and equally difficult to rest content with a definition of humanities computing that omits its mediological essence.

Not long ago the problem we had as intellectual children of Busa was attracting the interest of our colleagues, and thus the promotional mode characterising our public discourse for so long. But, with the massive attention now directed at computing, the age of promotion is over, or at least should be in the academy. Our problem now is not just what to do with this attention; specifically it is balancing the pressing need for training colleagues and students in the ABCs of computer-use, and for supporting them subsequently, against our fundamental responsibility as scholars to understand how computing the humanities alters the sociology and epistemology of knowledge. It seems to me that the three imperatives, pedagogical, collegial and scholarly, must go hand-in-hand, indeed that we cannot properly discharge our duty to be involved with the basics without knowing what kind of a tool the computer is and what its effects are likely to be.

This pressure to provide "IT training" and support means that humanities computing can no longer be left as a hobby or even passion of senior colleagues, to come and go with their health and political fortunes. An institutional response, locating the activity firmly within the academic infrastructure, is required. The danger here is that this response will be made uninformed by the disciplinary, intellectual issues at stake. If it is made in ignorance, we in the humanities stand to lose perhaps our best opportunity of connecting ourselves with a central preoccupation of the age in which we live. This imperative of the moment, and the wide-spread impatience of our colleagues with mere promise and promotion, pushes computing humanists to 'come up with the goods', to spread out the wares so that stock can properly be taken.

Within humanities computing and those individual disciplines most nearly affected by it, this stock-taking is in fact now underway, with encouraging results. Confining myself just to the events in which I am involved, I can cite for example the Conference on Editorial Problems last November in Toronto, Canada, on "Computing the Edition"[1]; two colloquia in London, one on "Computing in Classical Studies"[2] in early February, the other on Computing in the Academy,[3] this May; the conference on Cultural Attitudes toward Technology and Communication,[4] also in London this August; and the now annual U.K. gathering, Digital Resources in the Humanities, next in Glasgow[5]. Among the several book-length studies worthy of our attention and suitably interdisciplinary are Régis Debray's *Media Manifestos* and a collection of essays, *The Future of the Book*, originating from a conference held 4 years ago in San Marino, California.[6] These events and books, along with numerous others, point to the coming of age of the medium and to the conclusion that every aspect of what we do is affected by it. Here I will sketch what I think the broad outlines may be, but knowledge of the details will have to await studies that draw together the insights currently surfacing here and there in writings across the disciplines.[7] The fifty years since Busa began is a good chunk of a human life, but it is only a brief span in the history of a technology, especially one as complexly human as computing. Patience, please, these studies will come.[8]

Meanwhile, the evidence we have suggests that the kind of project Father Busa undertook is where our genius as computing humanists lies. We are tool-makers and students of their effects; we furnish scholarly *resources* (for example, methodological guides, data archives, critical editions, lexicons and other reference works), which invest scholarship in providing materials for others to use, and develop an understanding of what they can do. Such, for example, is the purpose of the highly successful Digital Resources conference to explore; it is also the rationale behind projects such as the international Text Encoding Initiative[9], the national Arts and Humanities Data Service[10] in the U.K., the Michigan Humanities Text Initiative[11], the Perseus Digital Library[12] for classical and Renaissance studies and the ARTFL Project[13] of French language materials. Resource-provision is also a recurrent theme of the American Council of Learned Societies[14], whose past president, Stanley Katz, has identified computing as its most important focus for the next decade.

Nothing can be done without the ABCs, of course, and in a sense teaching them is a task for a master of the language that they spell, not for a novice, because motivation to learn the rudiments comes most significantly from the wisdom they yield. This is one reason why the ABCs of computing are seldom well taught by the usual computing centre model of 'short courses' and fragmented workshops on this or that topic, because these (viewing the ABCs as merely technical) tend to focus only on button-pushing, not also on the methodology of application and the consequences for one's subject. Their lack of continuity cheats both student and instructor of the overview out of which arises the capacity to abstract and generalise from the minute particulars of this or that software to the principles of applied computing. Since hardware and software come and go at an alarming rate, this cheating is a serious matter.

To do better for our students and ourselves, as we must, requires individuals with the right sort of training and in academic positions that will allow them to develop intellectually and professionally. The

problem we have at the moment is that even the most experienced of us are just now coming, often haphazardly, to understand how the computer mediates knowledge, and so to be able to justify the commitment of serious long-term resources, such as academic appointments in humanities computing. Such understanding comes very slowly, through sustained involvement in the kind of project that allows one to observe the mediological effects as well as to conduct research into the material directly under investigation. Especially under the pull to which a technological discipline is subjected and in a field where every step is further into *terra incognita*, we must remind ourselves and everyone else about the meaning, requirements and crucial necessity of pure research. Where would we be if Busa had not had the liberty to pursue his work without demonstrable product for so long?

I am arguing, then, that the institution's best response for everyone concerned is to take humanities computing seriously as an intellectual activity and to provide for its long-term future. To date only a few remarkably far-sighted institutions have appointed scholars to positions in humanities computing, established academic units in the field or made joint appointments between computing and a conventional academic department.[8] The bulk of the work, however, is still carried on by those whose primary responsibilities lie elsewhere. Most of these, some precisely because of their preoccupation with computing, have had to find their niche in the academic *demi-monde*, all too often saddled with heavy administrative responsibilities, or outside the academic orbit altogether. Brain-drain to the commercial world and mind-numbing frustration from academic mis-employment are problems we can hardly afford to perpetuate, since they mean loss of considerable energy and talent to the academy. Junior academics, needing to prove themselves, are under great pressures of time to perform well in their areas of appointment and so tend prudently to work only on those low-risk, short-term projects certain to gain approval from their departments. Thus it has happened that advances, such as the Dartmouth Dante Database[9], have been made by senior academics, who can afford to take the risks incurred by investing significant time in such a new way of working. Their achievements are admirable, but since they tend not to need anyone's permission, the basic institutional commitment tends not to be made.

The situation needs changing rather more rapidly than may happen on its own because of the urgent social need for a critical understanding of the new medium, the need of the disciplines to be refurbished for the modern world and of course our own need to meet the demands put on us by students. Amidst the clamour let us be reminded, however, that as Gaston Bachelard has said of human evolutionary psychology, we are creatures of desire, not of need.[10] In other words, if we cannot see and be stirred by the great intellectual adventure with which computing presents us, and in turn excite our students with it, then perhaps we should find some other line of employment.

Allow me to illustrate the nature and demands of this adventure briefly by describing my own research and teaching in the field during the last decade.

My research has been directed at building a reference work entitled *An Analytical Onomasticon to the Metamorphoses of Ovid*, i.e. a comprehensive guide to all devices of language by which persons are indicated in Ovid's poem.[11] Ovid is increasingly on the centre stage of contemporary culture,[12] so it is perhaps no longer necessary to justify devotion to a long-dead poet in a long-dead language. In any

event, those familiar with the historical influence of Greco-Roman culture will know how fundamental the *Metamorphoses* is to European art and literature. The poem has, however, been a problem for literary critics during the last century because of its elusive coherence (if not outright subversion of the very idea), but times have changed and, it seems, we now have the right sort of mental model with which to appreciate it.[13] Even if there is no single principle from which to construct the unity or unities of Ovid's complex mythological compendium, making the attempt is clearly how the poem is meant to be read. My *Analytical Onomasticon* is intended to help by supplying a rigorously consistent and explicit accounting of the largest body of evidence for the interrelation of persons in the poem and so of its component stories. It is a resource for others to use in constructing the unities of the poem.

The *Onomasticon* is compiled automatically from a densely encoded electronic text of the poem.[14] All of the scholarship is invested in the metalinguistic encoding that identifies each appellative in the text with the person or persons to which it refers, and does so in such a way that software can sort and format the information reliably. The translation of poetic phenomena into computational metalanguage is governed by the twin computational principles of total explicitness and absolute consistency. Hence all relevant ambiguities are resolved, with the obvious consequence that much is lost in the translation. The practical benefit for the user is, as in all modeling, that an otherwise elusive reality can be reached more closely than before by exercising the model. The immediate scholarly benefit (which is where humanities computing comes into its own) lies with the significant discrepancy between the mechanical precision of the computational model and the imaginative precision of the poetry. This discrepancy — i. e. what is lost in translation but legible in the poem — raises the most important question of how we know what we know. For Ovid in particular it puts into sharp relief his undermining of order, or more helpfully, the escape of his art beyond any current set of rules, inviting us to pose better, less easily answerable questions. Therein is the great intellectual adventure I referred to earlier and, I would argue, the generative principle by which the Ovidian world became and becomes ours.

The computational perspective, then, polarises the dialogue between interpretation and poetry by offering a radically reductive, mechanically flawless, empirical tool whose apparent weakness is its real strength. Allow me to illustrate this polarisation with a specific example drawn from the *Onomasticon*, namely personification.

Personification is literally "person-making", i.e. the rhetorical creation of a person out of an abstract, inert or otherwise subhuman entity by attributing characteristics normally associated only with humans, as when the trees assemble to hear Orpheus sing (*Met.* 10.86ff). Because of the ontological flux deeply characteristic of the *Metamorphoses*, in which persons are coming into and going out of being from beginning to end, personification needs to be tracked very closely. The problem is that personification as conventionally understood does not fit the *Metamorphoses* very well: change itself is clearly far more important to the poem than any altered states-of-being that may result. Hence the *Onomasticon* focuses not on fully established anthromorphic personifications, which are in fact not very numerous in the poem, but on the upward ontological shifting that is often, in fact normally partial and momentary. This means attention to the mechanics of how personification happens and to the difficult question of how to describe the linguistic and meta-linguistic conditions responsible for it. Previous scholarship is of very

little help here, as the classicists have devoted themselves chiefly to historical correlatives, e.g. from the cultic evidence, and literary critics to sustained personifications in narrative.[15] Only a handful of scholars, beginning with the medievalist Morton Bloomfield in the 1960s[16], have speculated on a "grammar" of personification, which is the right way to begin an enquiry into these mechanics, though it is ultimately frustrated by the fact that personification is a matter of context, and context (in the sense used by literary critics) is not a grammatical concept.

Hence the notion of "grammar" will not work as a way of describing how poetic language behaves at the level of personification -- yet at the same time we need something very much like it to yield useful results from a computational encoding. In other words, we need rules. If, however, one turns the notion of a grammar inside out, *applying the idea of systematic rules to the encoding rather than to the text*, then the road ahead is unobstructed. Many grammars of personification thus become possible, in fact. The subsequent task then becomes to find the most useful ones, those that are "true" in the craftsman's sense of "accurately placed, fitted, or shaped" to the poem, period, genre or other defining condition, such as critical perspective.

My grammar is the result of an empirical-inductive method by which I have reduced the identifiable features of context to ten factors that seem adequately to fit the approximately 520 Ovidian personifications catalogued in the *Onomasticon*.[17] In constructing the grammar I have proceeded recursively, from obvious cases to descriptive factors, then to less obvious, more challenging cases and again to factors, and so on, refining as I go until the law of diminishing returns advises an end to it. These factors serve the user of the *Onomasticon* by providing a clear explanation of what I have done. I also very much hope that they will serve literary studies as a whole by improving our understanding of a rhetorical trope and figure of thought that some modern critics, such as Paul de Man, regard as "the master trope of poetic discourse" .[18]

I noted earlier that the success of such constructs, however great the practical benefits, are overshadowed in their importance to scholarship by their failure to match readerly perception. In the case of personification, for example, there are an indefinitely large number of cases that do not qualify because the contextual evidence does not meet our criteria. Saying no to these means a loss of the indistinct ontological penumbra, which is in large part created by the inherent tendency of human language to be anthropocentric, and so to personify. A line must be drawn somewhere because to admit every flicker of sentience would make any accounting of personification meaningless. Wherever one draws this line, the rich and ambiguous interplay of being against non-being is turned into a stark binary opposition. Simultaneously, however, our awareness of the banished penumbra is sharpened. For perfectly good reasons the *Onomasticon* focuses on process rather than product, and so has illuminating trouble with those entities who are ontologically unusual by nature rather than in their alteration. Cataloguing metamorphoses in the poem (to shift to another example) forces us to terms with the ambiguous relationship between a person and what he or she is changed into; resolving the ambiguity, as I must, again simultaneously banishes the penumbra and deepens our understanding. We are made forcibly aware of the figurative kinds of metamorphosis (such as mistaken identity or cross-dressing) by the very fact that the rule of consistency will not allow them. In sum, the *via positiva* out of which

comes a useful tool is complemented by a *via negativa*, the illuminating path of failure by which insight comes.

The mediological effects of computing are perhaps especially clear in a project as computationally simple as mine, for which the physical device is used only to sort, select and reformat the tags. Because the flawless precision of the machine makes mechanically imprecise data obvious and obviously a problem, working with it imposes an exacting mental discipline in the tagging of the onomastic phenomena. This discipline is, again, characterised by the two computational principles of total explicitness and absolute consistency of the data. In other words, serious scholarly engagement with the computer means internalising it so that it becomes, as I said before about tools generally, an agent of perception and instrument of thought. Thus the mind of the scholar becomes a battleground in the creative *psychomachia* between the computational and the poetic.

It is not, however, entirely correct to say that we internalise the machine, rather we re-internalise the product of our own imaginations. We are apt out of ignorance to regard the computer as if it were an object essentially alien to the concerns of the arts and humanities, and so to think it either a threat or a salvation from beyond our ken. Of course whatever happens culturally is our business, but the relationship between machine and human runs much deeper than turf. As the history of automata shows, our kind has been dreaming of a mechanical other more or less continuously since Hephaistos' robotic toys in the *Iliad* of Homer. Work in cognitive science on the role played by the externalisation of intelligence in human evolution,[[19](#)] and studies such as Bruce Mazlish's on "the co-evolution of humans and machines"[[20](#)] demonstrate how intimate the relationship is. Northrop Frye has observed that humanists of the Renaissance owed their ascendance in part to a superior command of the then new technology of printing, and in one of his last public addresses noted that were he beginning his work today he would pay a great deal of attention to software as a way of understanding literature.[[21](#)] We may have come somewhat slower to computing than our colleagues in the sciences, but then computers have only recently become sophisticated enough to handle our more challenging data. Even if the machine is crude as Caliban, we must say with Prospero, "this thing of darkness I / acknowledge mine" (*Tempest* 5.1.275f).

Where, then, should we place the humanist's machine within higher education?[[22](#)] Institutions, of course, vary a great deal, some being essentially colleges of the humanities. Broadly speaking, however, consensus is now that the place for it is not in the computing centre, whose role increasingly is to manage the network infrastructure and other mass services. The individual departments themselves are a possibility, but there are very good reasons to regard this option as a bad one as well.

The argument for the departmental home takes two principal forms. The more radical but weaker position is that as computing simply becomes what everyone does, the need for an extra-departmental centre or specialist unit disappears. This is naïve, however, because it assumes, contrary to all evidence, that the technology will stop changing in any significant way soon (thus eliminating the need for instruction in the subject), or that department members can without sacrifice keep up with technological change as well as maintain their own careers. The other position, which is unimaginative but

considerably harder to unseat, is essentially that we should maintain the status quo of many institutions: a non-academic, technical unit whose direction and activities are driven by regular members of the faculty appointed in conventional departments. Given the right conditions, units of this kind can work and have been judged successful, but it is difficult to see any argument for their exclusion from the academic core that is not reducible to short-term (and I think short-sighted) political expediency. In a time when the survival of the humanities appears to be at stake, we simply cannot afford convenient myopia. The interests of humanities computing and those of the academy as a whole converge.

The fundamental reason for locating humanities computing within the institution as an interdisciplinary scholarly activity in its own right is rooted in the fact that from the computational perspective of data and explicit procedures, the arts and humanities overlap methodologically to a very high degree. Humanities computing reveals a substantial common ground of technique from which to address research and teaching problems across the disciplines. This common ground, tended by those who combine academic training and perspective with technological sophistication, by nature fosters exchange and collaboration; applications of computing to one discipline typically inform approaches in others, or even inspire new ones. Data and analytic procedures, rendered explicit for computing, become sharable in ways not possible before. The interdisciplinary forum tends to encourage discussion of fundamental matters, for example the nature of what we consider to be scholarly (which varies remarkably from discipline to discipline); such questioning may be used to provoke rethinking of basic purposes for the intellectual life -- a subject in which students are keenly interested. The focus on techniques in scholarship turns attention to the *how* rather than the *what* of knowledge, and so to the kind of reform in higher education for which we hear a persistent call.

All this sounds terribly upbeat, but in the seven years I have been teaching the subject as described I have seen the common ground become only more fruitful and more stimulating.

Among the system-wide effects of computing in the academy is, as Jaroslav Pelikan has observed,^[23] a weakening of the boundary separating those who use information from those who provide it. This weakening is most welcome, especially to service-providers within the academic hierarchy, but the matter is more complex than a throwing off of chains. A reconfiguration of the academy, redefinition of roles and re-education of those in them are implied.^[24] Let me focus here, however, only on humanities computing. To bring it into the core of the institution means not merely adding another unit but rethinking how units interrelate. For humanities computing a central idea in such a rethinking is *collegial service* -- not a new concept, of course, but fundamental to the resource-orientated research, to teaching and to the assistance provided for colleagues in other departments, from advising to full-scale collaboration. Humanities computing is by nature in everyone else's business, and thus a communal instrument for the probing and strengthening of community. It is the *yenta* among disciplines.

But is it a discipline? Even a brief survey of the literature on the history of scholarly disciplines reveals how historically and socially contingent they are.^[25] The complexity of this history, the debates surrounding creation of the younger disciplines and the self-doubt vexing the academy as a whole make it difficult for us to discern any principle or test by which we may determine if a field of activity

qualifies. Indeed, as Pauline Yu (Dean of Humanities, UCLA) argues for the disciplines of the American academy, quoting Bill Readings, we may want "'a certain rhythm of disciplinary attachment and detachment': intentionally impermanent collaborations that resist institutional entrenchment and inertia" rather than yet another fixed boundary.[26] Again the question of humanities computing moves us in yet another way from seemingly restricted, pragmatic concerns of hardware, software and where to put them, to fundamental issues in the sociology of knowledge. As Pauline Yu goes on to say, "Without a persistent willingness to rethink traditional categories, we may only delude ourselves about what it means to cross disciplines. And without a conviction to adjust modes of analysis to newly perceived realities, to question what seems obvious or without question, and to reaffirm what seems of enduring value, we risk forgetting wherein lies the essence of the humanities. We cannot afford to take the risk of losing the insights into ourselves, our pasts, and our futures that they teach us."

The *Oxford English Dictionary* notes that etymologically 'discipline' pertains to the disciple or scholar, and in the history of words is concerned with praxis rather than theory. In a sense, then, there are only two questions we can address on behalf of humanities computing: is it a coherent practice? do we have the imagination and political will to give it license in whatever form will best open the mind to this great intellectual adventure I have described? I think the answer to the first question is clear. The second is up to us.

[[apud WM](#)] -- [¶] Grammar of personification

A provisional grammar of personification for the *Met*

The following is a provisional grammar (i.e. systematic guide to practice) that describes the basis for my tagging of personification in Ovid's *Met*. It is accompanied by a set of examples[¶] from the text so that you may see how it is related to actual practice.

I. Definitions

The critical term 'personification' is commonly taken to mean "the representation of a thing or abstraction as a person" (OED), i.e. something recognisably human. (For its long and complex history see James J. Paxson, *The Poetics of Personification*, Cambridge 1994). I use the term here in the rhetorical rather than the anthropological sense and am specifically concerned with personification figures rather than characters, i.e. the local rhetorical ornaments, "for the most part self-contained in a phrase or line", rather than the "extension of the first into a complete narrative world" (Paxson 35).

In order to capture ontological change in the *Met* in as much detail as possible, I redefine the term "person" radically to include all entities to whom higher-order characteristics are ascribed. Thus I define the term "personification" to mean any rhetorical act that transgresses normal ontology by investing an entity with a human imaginative component, whether or not the result is anthropomorphic.

II. Major groups

Given the above definition, I divide Ovidian personifications into two major groups:

- A. **Implicitly personified.** These are the purely fictitious creatures (such as Medea's *dracones volucres*), which are ontologically unusual by nature. I include these as poetically-made persons because they are wholly the product of a human and so humanising imagination. Since these are not explicitly marked in any systematic way, I simply declare them to be persons and pay no further attention to them here. They account for approximately 5% of the total.

B. **Explicitly personified**, i.e. personifications proper, which account for the remaining 95% of the total. I ascribe their personification to a varying mixture of ten local factors in the broader context of usage within and to some degree beyond the *Met*. Four of these local factors are called "strong" and six "weak", depending on whether they are always or only sometimes associated with personified entities. (I advisedly refrain from saying that these factors *personify*, rather claim only that they are found *in situ* and constitute the only consistently reliable evidence.) Note that the categorisation has nothing whatever to do with frequency of occurrence, which may serve as a rough guide but at least in the *Metamorphoses* proves unreliable for determining whether any particular candidate qualifies.

III. Contexts

Five closely related kinds of context affect the success of local factors in personifying an entity. These are as follows:

A. Onomastic

In considering any particular candidate for personification, I take into account its broader onomastic context. Even when this context strongly favours personification, however, local evidence must still justify it.

This context takes two forms:

1. Association with an established person

Certain entities are within and/or beyond the *Met* so often associated with established persons that they require much less in the way of local evidence for their personification. (Consider, for example, *sol*, closely bound by nature to Phoebus; in contrast, note that *luna*, though associated with Diana closely, is mostly inert in the *Met*.) At the same time, because an unpersonified instance of such an entity (e.g. *sol* when it is the inert celestial object) is as matter of policy captured as an attribute of the associated person, there is less of a pragmatic impetus to argue that marginal entities should be identified as persons -- in order not to lose them to the *Onomasticon*.

I consider a person to be "established" if he or she bears a proper name, i.e. a name that is not already a common noun in the language. Proper names, such as *venus* and *bacchus*, may of course become in effect common nouns through fossilisation, though this requires a poetic act. In other words, I treat fossilisation as de-personification and so require evidence for it.

2. Frequent personification elsewhere

Other entities within and/or beyond the *Met*, though they lack a proper name, are so often treated as persons that they are especially prone to personification wherever else they are found. A good example is the entity named either *tellus* or *terra*, which is by turns a person and a natural substance or location. Other entities, of which *cupido* is the most obvious example, are so consistently treated as a person that the common noun that names them is in effect a proper name.

B. Narrative

Personifications are affected by the nature of individual stories or sections of the poem. Thus they appear to be especially populous in episodes that take place on the temporal, geographical or existential periphery, most prominently the creation and early beginnings (book 1, 11% of all instances); Phaethon (book 2, 9%); Medea (book 7, 11%); Orpheus (books 10-11, 17.5%); Aeneas (books 13-14, 7%); and Pythagoras (book 15, 6%). These episodes are intriguingly nested. Thus person-making in the early stories, attesting to an aboriginally animate, speaking world of strong gods and *semidei*, is paired with Pythagoras' concluding vision of human spiritus interpenetrating and so humanising all animal life: *...eque feris humana in corpora transit / inque feras noster...* (15.167f). Phaethon and Aeneas are similarly paired in their wanderings beyond the geographical verge of the known and settled world to the monstrous creatures inhabiting the fringe. Likewise, Medea *Colchis barbara* and Orpheus *vates Threicius* (both thus also creatures of the geographical periphery) are figures identified by a common power -- the *carmen* that is both charm and song -- to disturb settled reality around them (for which see below).

C. Poetic-mythological

The poetic and mythological associations of an entity strongly affect its capacity for personification in a given context, as do its physical properties. Thus, for example, among inert objects (which account for over half of all personifications) celestial objects have a long association with divine beings, and earth a history as a mother goddess; both water and winds invite personification because of their constant, lively movement, and winds in addition because they manifest an invisible power. Animals and vegetation (together less than 20%) individually each have their mythological associations and particular resemblances to human beings. Since Homer mental and physiological states and behavioural qualities (together about 12%) have been depicted as sentient powers independent of their hosts, as have physical qualities (about 3%).

D. Ontological

In general as one progresses up the chain of being toward the human state personification

becomes increasingly demanding. Thus abstractions (slightly less than one-fifth of the total) are the easiest of all entities to personify, since any concrete attribute or attributed action (including in some cases the verb *sum*) will tend to violate their ontology and so qualify them as personified. Inert physical objects require the properties of vegetable, animal or human life; vegetables requires animal or human properties; and so forth.

E. Personal

Medea, Orpheus and a few others evidently cause ontological disturbance in their immediate proximity, whether this is by direct action or spontaneously. Orpheus (whose case I take to be normative) shows that we are not dealing with puppet-like control of inert objects, rather with a kind of resonance that awakens dormant potential to sentient life. A context for personification is thus established.

IV. Local factors

A. Strong

Three out of the four strong factors on occasion occur alone, without the aid of any others strong or weak, and so might be regarded as especially potent. The factor that does not is, however, strengthened by other means. Details are given below.

1. **Apostrophe.** Any address to an ordinarily non-sentient entity I interpret as sufficient for personification, however contrafactual, e.g. Narcissus' to the trees, "*ecquis io silvae crudelius*", inquit "*amavit?*" (3.442), Pyramus and Thisbe's to the separating wall, "*invide*" *dicebant* "*paries, quid amantibus obstas?*" (4.73) and Thisbe's address to the mulberry tree, "*at tu quae ramis arbor miserabile corpus / nunc tegis unius...*" (4.157ff). Such apostrophes, often but not always marked with the vocative, are found in about 8% of the total number of personifications. In about one-fourth of its occurrences, apostrophe is the only factor, as in the first and third instances just quoted. Note that with respect to personification we thus do not distinguish between the poet's words and those of his characters.
2. **Familial relationship.** Any inanimate entity said to have a familial relationship or status is tagged as a person. Thus when Juno summons *sorores nocte genitas* (4.451f), ambiguous *nox* is personified by the familial, generative connection with the dreaded sisters, instrumental ablative notwithstanding. (The fact that *nox* is elsewhere clearly personified does have some bearing, though the familial relationship here is determinative.) Familials occur alone somewhat less than 20% of the time and altogether are involved in about 15% of the personifications.
3. **Locution** In 5% of personifications, the entity speaks or is said to speak. Although

speech is never the only personifying attribute, it is always associated with persons and is quite clearly a most significant factor. Its importance is not merely inherent in the fact that only humans speak; in the *Metamorphoses* its role is negatively underscored throughout by the close connection if not identity of silencing with downward metamorphosis. Thus Aglauros, *nec conata loqui est nec si conata fuisset / vocis habebat iter* (2.829f); Philomela, whose brutal silencing, as it were, pulls her and her sister down into the lower world of her ravisher (6.555ff); and the dead, traditionally known as the *silentes* (e.g. 5.356, 14.411).


4. **Mental activity.** Expressions of mental activity, such as emotion, cognition and volition, are found in slightly less than 15% of all personifications. In a small number of these instances (somewhat less than 10%) they occur alone and always personify. Emotions, for example, can be attributed to and help to personify other emotions, e.g. *timores consternati* (12.60).

B. Weak

1. **Action.** As repeatedly emphasised by Bloomfield et al. for literature as a whole, attributed action is the most common of the personifying factors in the *Metamorphoses*, accounting by itself for 13% of all cases, with one other factor (chiefly the parallel) for 37%, and with two or more for 75%. Since in Latin verbs are more highly polysemous than the other parts of speech associated with personification, determining the personifying force of a verb is often not at all simple. Here I have used the *OLD* as a rough guide to whether a given verb is, as Bloomfield says, "normally only used of living beings" (1963: 163), but not taken its word as final.
2. **Body-part.** Corporeal features are associated with just over 12% of personifications. In all but 15% of these cases, the body-part is associated with a personified entity, making this the strongest of the weak personifiers. Thus, for example, *ora* attributed to fountains (1.281) or a river (15.54, Aesar), *cornua* to the moon (2.453, 3.682, 8.11) and *vultus* to nature do not personify because they are so commonly used in an inanimate sense and nothing else in the cited passages suggests otherwise.
3. **Parallel.** We consider two or more entities to be in parallel when they occur in a coordinate series or are otherwise treated in the same way grammatically or narratively, e.g. as objects of the same action. In the *Metamorphoses* such parallels are commonly involved in personification, occurring in nearly 60% of all cases. The parallel is a tricky factor to resolve, however. Broadly speaking, it appears to work by amplifying existing tendencies rather than introducing new ones. Thus the effect can be to strengthen or to weaken a candidate for personification, or where

the candidate displays no tendencies to personification at all, there may be no effect.

4. **Possession.** We consider voluntary possession, whether conscious or otherwise, to be chiefly a human characteristic and always relevant to an ontology. Thus possessions, especially when unnatural, may indicate personification. Possessed objects turn up in just over 13% of all cases, in three instances as the only factor, though there are extenuating circumstances in each of these solo instances. In the remaining cases the possession accompanies two or more other factors, and when there are only two, the other is much the stronger.
5. **Quality/role.** Qualitative aspects of an entity or the role it is said to play in some action can be ontologically unusual and so indicative of personification. (In practice these are difficult to distinguish, so we group them together here.) They are found in 10% of all cases, on three occasions alone. They attest to an anthropomorphic quality of mind or body, or to a human role.
6. **Self-reference.** The reflexive pronouns *ipse* and *se*, the corresponding possessive adjective *suus* and other pronouns used reflexively are found in 3% of personifications, never as the sole factor.

 What is... - [\[Examples\]](#)

To the reader

THIS ESSAY is currently in development. It will change, likely in small details only, whenever inspiration, good advice or new information conspire with opportunity. Every attempt will be made to mark changes by a revised version date.

NOTES TO THIS ESSAY are of two kinds:

1. **Full-page**, as in this example, used primarily for presenting cited online resources. These are marked by a paragraphus in square brackets, thus: [¶]. Such notes, which occur both in the main body of the text and in footnotes, appear as here in a separate window of the browser, which may be kept or dismissed as you wish. Note that if you keep the separate window, it will simply be updated when you click on another such reference.
2. **Footnotes**, in the bottom frame of the main window.

Comments are welcome and should be sent to willard.mccarty@kcl.ac.uk.

Notes

1. Published in Stuttgart-Bad Cannstatt by Frommann-Holzboog, 1974-1980 (70,000 typeset pages); CD-ROM 1992.
2. See, for example, R. Busa, "The Annals of Humanities Computing: The Index Thomisticus", in *Computers and the Humanities* 14:83-90.
3. Etymologically and in some current usage the term *prosthesis* (Gk. "addition"). takes on more than the surgical sense of an artificial replacement for a missing body-part or other corporeal deficiency. See Gabriel Brahm and Mark Driscoll, eds., *Prosthetic Territories: Politics and Hypertechnology*, Politics and Culture 3 (Boulder, Co.: Westview, 1995); George Landow, *Hypertext: The Convergence of Contemporary Critical Theory and Technology* (Baltimore: Johns Hopkins University Press, 1992): 170-1; David Wills, *Prosthesis (Meridian: Crossing Aesthetics)* (Stanford: Stanford Univ. Press, 1995). I have yet to examine the relevant literature in the history of science, where the idea of instrumentation as prosthesis has been developed.
4. See Régis Debray, *Media Manifestos: On the technological transmission of cultural forms*, tr. Eric Rauth (London: Verso Books, 1996); Geoffrey Nunberg, ed., *The Future of the Book* (Berkeley: Univ. of California Press, 1996). The term "media-sphere" is Debray's.
5. One serious impediment is the lack of any up-to-date bibliographical means of tracking the published work relevant to humanities computing. Previous attempts in print notably include Ian Lancashire, *Humanities Computing Yearbook 1989-90* (Oxford: Clarendon Press, 1991); and Giovanni Adamo, *Bibliografia di informatica umanistica*, vol. 5 of *Informatica e discipline umanistiche* (Roma: Bulzoni Editore, 1994). See also Willard McCarty *et al*, *Selective bibliography for humanities computing*[\[1\]](#). It seems obvious that any future attempt must be online but that gathering information from existing online sources is radically insufficient to produce a reliable accounting.
6. An early negative and highly polemical article, together with responses, is Mark Olsen, "Signs, Symbols and Discourses: A New Direction for Computer-aided Literature Studies", *Computers and the Humanities* 27 (1993).
7. See the *ACLS Newsletter* 4.4, "Internet-Accessible Scholarly Resources for the Humanities and Social Sciences"; and ACLS Occasional Publications 36, "New Connections for Scholars: The Changing Missions of a Learned Society in an Era of Digital Networks" by Douglas C. Bennett; and 37, "Information Technology in Humanities Scholarship: Achievements, Prospects, and Challenges -- The United States Focus" by Pamela Pavliscak, Seamus Ross, and Charles Henry. (The latter publication is based on M. Feeney and S. Ross, *Information Technology in Humanities Scholarship: British Achievements, Prospects, and Barriers* [London: The British Library Research & Development Department and The British Academy, 1993]). These are accessible from the ACLS Publications page.[\[1\]](#) Note also the ACLS sponsored projects, particularly the American Arts and Letters Network;[\[1\]](#) the National Initiative for a Networked Cultural Heritage;[\[1\]](#) and the international electronic seminar *Humanist*.[\[1\]](#)
8. In the U.K. these are most notably King's College London[\[1\]](#) and Glasgow[\[1\]](#), both of which have made appointments at the lecturer and senior lecturer levels and teach academic courses in

humanities computing. Note also Oxford[[1](#)], whose Humanities Computing Unit shares an appointment with the English Faculty. In Canada note the Humanities Computing Centre at McMaster[[2](#)], which at the time of writing is in process of making a second appointment at the assistant professor level; and the Canadian Institute for Research Computing in Arts, University of Alberta at Edmonton, which shares an appointment at the full professor level with English (contact the Director, [Professor Susan Hockey](#)). In the U.S. I am aware only of the Institute for Advanced Technology in the Humanities, University of Virginia[[3](#)], which shares a tenured appointment with English and is about to share another with computer science (with emphasis on computer vision and image analysis). Corrections and additions welcome.

9. See "Dante Project" in the Dartmouth College index[[4](#)] and the Dartmouth Dante Project information page at Princeton[[5](#)].
10. "Aussi haut qu'on puisse remonter, la valeur gastronomique prime la valeur alimentaire et c'est dans la joie et non pas dans la peine que l'homme a trouvé son esprit la conquête du superflu donne une excitation spirituelle plus grande que la conquête du nécessaire. L'homme est une création du désir, non pas une création du besoin." *La Psychanalyse du feu*, Cinq. edn., Collection Psychologie 7 (Paris: Gallimard, 1938): 39; trans. *Psychoanalysis of Fire*, tr. Alan C. M. Ross (Boston: Beacon Press, 1964): 16.
11. See the Onomasticon Project WWW site, "Who's Who in the *Metamorphoses* of Ovid" (London [[6](#)] or Princeton[[7](#)] mirror). References to parts of the WWW site will be made in the following.
12. Note the Whitbread Award for Fiction to Ted Hughes for *Tales from Ovid* (1997); the two fictional biographies, David Malouf's *An Imaginary Life* (1978) and Christoph Ransmayr's *Die letzte Welt* (1988), tr. *The Last World* (1990); David Wishart's historical novel, *Ovid* (1995); and numerous works that deal with metamorphosis or are otherwise Ovidian in spirit, such as Marie Darrieussecq's *Truismes* (1996), tr. *Pig Tales: A Novel of Lust and Transformation* (1997).
13. See, for example, Michel Serres, *Genèse* (1982), tr. *Genesis: Studies in Literature and Science* (1997), in which he deals with the interplay between order and disorder.
14. For a brief look at the encoding, go to the relevant page, "The tagging scheme used to encode these names" at either the London[[8](#)] or the Princeton[[9](#)] sites of the *Analytical Onomasticon* Project homepage. For more detail, see my conference paper, "Theft of fire: meaning in the markup of names" at either London[[10](#)] or Princeton[[11](#)]; note that this paper contains a tutorial that allows you to examine the tagging strategy in detail, "Ovid in the metatext: an exercise in close-reading through tags".
15. See Willard McCarty, "Encoding Persons and Places in the *Metamorphoses* of Ovid: 1. Engineering the Text", *Texte: Revue Critique et de Théorie Littéraire*[[12](#)] 13/14 (1993): 133ff (though note that the details of my approach to the problem have been superseded); on the literary critical view of personification, see James J. Paxson, *The Poetics of Personification* (Cambridge: Cambridge University Press, 1994).
16. See in particular Bloomfield's first article on the subject, "A Grammatical Approach to Personification Allegory", *Modern Philology* 60 (1963): 161-71. Other references are given by Paxson.
17. The details of the grammar do not matter to the argument of this paper, but those who are interested in personification itself may wish to refer to the attached description.[[13](#)]

18. Paul de Man, *The Resistance to Theory* (Minneapolis: University of Michigan Press, 1986), 48; see also *The Rhetoric of Romanticism* (New York: Columbia University Press, 1984).
19. See, for example, Merlin Donald, *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition* (1991), and his online keynote address for the 1996 ACH/ALLC conference, "Symbolic Technologies: Challenges and Dangers for the Humanities".[\[¶\]](#)
20. Bruce Mazlish, *The Fourth Discontinuity: the co-evolution of humans and machines* (New Haven: Yale University Press, 1993); note in particular chapter 3, "Automata"; see also Willard McCarty, "Language, learning and the computer: desultory postprandial investigations", *CALL: Theory and Application*, ed. Peter Liddell (Victoria, Canada: Univ. of Victoria Language Centre, 1993): 37-55.
21. See Northrop Frye, "Literary and Mechanical Models", in *Research in Humanities Computing 1. Papers from the 1989 ACH-ALLC Conference*, ed. Ian Lancashire (Oxford: Oxford University Press, 1991).
22. I have omitted here any consideration of the relationship between humanities computing and computer science. Anecdotal evidence suggests that in institutions in which the humanities predominate, computer science can take on humanities computing as a major emphasis, as has happened at Oberlin College (in the U.S.) with the Third Stream programme of Professor Chris Koch.[\[¶\]](#) and at Trent University (in Canada) with the Computer Studies Programme[\[¶\]](#). In institutions with large, strong computer science departments, applied computing tends to get very little if any attention, and when it does the courses offered are not the kind I would identify with humanities computing; see, for example, CSC104H, "The Why and How of Computing" in the CS department at Toronto[\[¶\]](#). For other examples, see the CS and the Humanities sections of the World Lecture Hall, a Web-based resource for teaching.[\[¶\]](#) This is not, of course, to say that a mutually beneficial relationship between CS and humanities computing is impossible, merely that it is rare to date.
23. *The Idea of the University: a Re-examination* (New Haven: Yale Univ. Press, 1992).
24. For a consideration of the system-wide effects of electronic publication, see Willard McCarty, "The shape of things to come is continuous change: fundamental problems in electronic publishing", King's College London: Office for Humanities Communication, 1997.[\[¶\]](#)
25. For an overview of the history and strong argument for the kind of changes to which a scholarly commitment to computing could significantly contribute, see Stanley Chodorow, "Taking the humanities off life support"[\[¶\]](#), in *The Transformation of Humanistic Studies in the Twenty-First Century*, American Council of Learned Societies Occasional Paper 40 (New York: ACLS, 1997), 17-19). The following desultory bibliography may also be helpful.
 - Pierre Bourdieu, *Homo academicus* (Stanford: Stanford Univ. Press, 1988).
 - Terry Eagleton, *Literary Theory: An Introduction* (Oxford: Blackwell, 1983), chapter 1.
 - Gerald Graff, *Professing Literature: An Institutional History* (Chicago: Univ. of Chicago Press, 1989).
 - Clyde A. Holbrook, *Religion, A Humanistic Field*, Humanistic Scholarship in America: The Princeton Studies (Englewood Cliffs, NJ: Prentice-Hall, 1963).
 - Julie Thompson Klein, *Interdisciplinarity: history, theory, and practice* (Detroit : Wayne State University Press, 1991).

- Noel King, "'The Teacher must exist before the Pupil': The Newbolt Report on the Teaching of English in England, 1921", *Literature and History* 13:1 (Spring 1987): 14-37.
- Clayton Koelb and Susan Noakes eds., *The Comparative Perspective on Literature: Approaches to Theory and Practice* (Ithaca: Cornell University Press, 1988).
- Robert Kohler, *From Medical Chemistry to Biochemistry* (Cambridge: Cambridge University Press, 1986).
- Bruce Mazlish, *A New Science: The Breakdown of Connections and the Birth of Sociology* (New York: Oxford University Press, 1989).
- Francis Oakley, *Community of Learning: The American College and the Liberal Arts Tradition* (Oxford: Oxford Univ. Press, 1992).
- David John Palmer, *The rise of English studies: an account of the study of English language and literature from its origins to the making of the Oxford English School* (London: Oxford University Press, 1965).
- Fritz K. Ringer, *Fields of knowledge: French academic culture in comparative perspective, 1890-1920* (Cambridge: Cambridge University Press, 1992).
- George Stocking, Jr., *After Tylor: British social anthropology, 1888-1951* (University of Wisconsin Press, 1995).
- -----, *Anthropology at Chicago: tradition, discipline, department*, an exhibition marking the fiftieth anniversary of the Department of Anthropology, October 1979--February 1980, (Chicago: Joseph Regenstein Library, 1979).
- -----, ed., *Functionalism historicized: essays on British social anthropology* (University of Wisconsin Press, 1984).
- Peter Widdowson, *Re-Reading English* (London: Methuen, 1982).

26. "The Course of the Particulars: Humanities in the University of the Twenty-first Century" [1], in *The Transformation of Humanistic Studies in the Twenty-First Century*.



The Text Encoding Initiative

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The Text Encoding Initiative (TEI) Guidelines are an international and interdisciplinary standard that enables libraries, museums, publishers, and individual scholars to represent a variety of literary and linguistic texts for online research, teaching, and preservation.

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The [Guidelines](#) are the chief deliverable of the TEI Consortium, along with a range of [tutorials](#), [case studies](#), [presentations](#), and [software](#) developed for or adapted to the TEI. The latest release of the Guidelines under development is [P5](#). The web versions of the Guidelines, the schemas and DTDs are released under the GPL (General Public Licence), and associated XSLT stylesheets are released under the Lesser GPL; this is explained in the [TEI licencing](#) document.

The TEI was originally sponsored by the Association of Computers in the Humanities (ACH), the Association for Computational Linguistics (ACL), and the Association of Literary and Linguistic Computing (ALLC). Major support has been received from the U.S. National Endowment for the Humanities (NEH), the European Community, the Mellon Foundation, and the Social Science and Humanities Research Council of Canada.

Want to become active in the TEI Community? Join a [Special Interest Group](#), sign up for the [mailing list](#), and come to our annual meetings. For help including the TEI in your next grant proposal, consider our [grant assistance program](#).

The seventh Annual Members' Meeting will be held *November 1-3, 2007*, at the University of

Maryland, USA. See the [announcement and call for papers](#).

News

- [ETE Volume published](#) A volume of essays on Electronic Textual Editing edited by Lou Burnard, Katherine OBrien OKeefe and John Unsworth is now available from the MLA Bookstore at <http://www.mla.org/store/CID4/PID301> (0 comments)
- [Electronic Text Editing](#) Electronic Textual Editing is a volume of essays jointly sponsored by the Modern Language Association and the TEI Consortium, and scheduled for publication in paper form in late 2005 by the MLA. Preview versions of all individual articles in the volume, which was itself prepared in TEI XML format, are now available at <http://www.tei-c.org/Activities/ETE/Preview/>. (1 comments)
- [Web site redesign](#) This is a new look for the TEI web site, with XML pages dynamically rendered using Apache Cocoon where possible. Comments are welcome. (5 comments)

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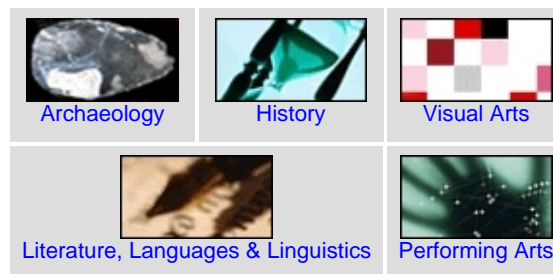
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ahds **AHRC Announcement – 14 May 2007**
The AHRC's announcement to grant applicants about the future of the AHDS

Enabling Digital Resources for the Arts and Humanities

The Arts and Humanities Data Service (AHDS) is a UK national service aiding the discovery, creation and preservation of digital resources in and for research, teaching and learning in the arts and humanities. Currently, we cover five subject areas:



Organised via an [Executive](#) at [King's College London](#) and five AHDS Centres, hosted by various Higher Education Institutions, the AHDS is funded by the [Joint Information Systems Committee](#) and the [Arts and Humanities Research Council](#).

The Arts and Humanities Data Service is funded by



From the AHDS Blog
The AHDS Blog

[AHDS Performing Arts Summer School on Digital Representations of Performance](#)

Dates: 18 20 July 2007. Venue: e-Science Institute, Edinburgh, UK AHDS Performing Arts has been successful in its e-Science Programme bid to hold a summer school on digital representations of performance at the e-Science Institute, Edinburgh in July 2007. AHDS Performing Arts will bring together a range of speakers to explore the collaborative possibilities that exist [...]

[East London theatre history to be digitised](#)

Lord Rix the actor-manager Brian Rix of Whitehall farce fame his wife Baroness Rix (the actress Elspet Gray) and Roland and Claire Muldoon, theatre pioneers with the New Variety group at the Hackney Empire, were among more than 100 guests from showbusiness and education at the launch of the East London Theatre archive at [...]

[AHDS Features in Preservation Review](#)

Long-running digital newsletter RLG news features two interesting articles in its latest edition. One is the self-explanatory Digital Imaging - How Far Have We Come and What Still Needs to be Done? The other, A Digital Decade: Where Have We Been and Where Are We Going in Digital Preservation? looks at past and future preservation issues, [...]

Featured Resources



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American Art**
A collection of
contemporary Latin
American art
available to view
online



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The Perseus Digital Library

Gregory Crane, Editor-in-Chief, Tufts University

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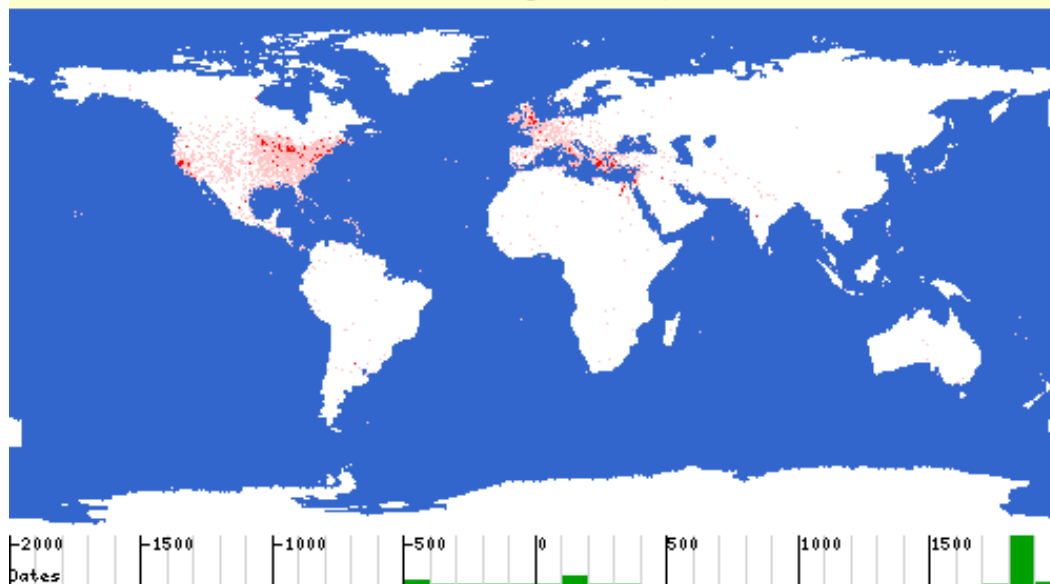
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Perseus Digital Library



A [graph of the places and dates](#) mentioned in this collection

Announcements

• Site Notice

On April 3, 2007, Perseus hardware was compromised. In order to protect our data and comply with university policy, a number of servers were removed from the network, making Tufts-hosted Perseus sites inoperable. Repairs are in progress to methodically restore services while improving their overall security. We apologize for the inconvenience.

• Classics in a Digital World

Curious about where classics might go in a digital world? See the [preprint of a new article about ePhilology](#) that will appear in The Blackwell Companion to Digital Literary Studies.

• Call For Papers

Call for Papers: the [Million Book Digital Library](#), May 22-24, 2007 at Tufts University, abstracts due Dec. 15

• Updating Perseus 4.0

We will be updating the [Perseus 4.0 Site](#) this weekend, Saturday and Sunday, October 8th and 9th. Work will take place overnight late Saturday and early Sunday morning (EST) and may result in a brief interruption of service lasting about three hours.

About Perseus

Perseus is an evolving digital library, engineering interactions through time, space, and language. Our primary goal is to bring a wide range of source materials to as large an audience as possible. We anticipate that greater accessibility to the sources for the study of the humanities will strengthen the quality of questions, lead to new avenues of research, and connect more people through the connection of ideas.

- **Update - 9/21/06**

What happened: Several weeks ago Perseus' old hardware started dying. Two of four of Perseus' backend servers died and the server that takes all incoming requests also started acting up. Most of these systems were several years old, and the project has invested in replacement hardware.

Repairing: We are replacing this hardware and installing Perseus on the new hardware. Right now Perseus is running with three backend servers and a new frontend server. If you run into any problems then please let us know so that we can fix them. We are working with Tufts staff to provide a more secure and sustainable environment. Because of the complexity of the Perseus systems and the staff time required to complete the process, we must implement this installation in several phases.

An update on Perseus 4.0 work is coming soon.

- **Hardware problems!:** A key server in the Perseus site has experienced intermittent hardware problems. We are in the process of upgrading this hardware and creating a more stable hardware environment. We apologize for the delays and hope to have the problem resolved in a few days.

>>>>>> 1.72

- **Perseus 4.0 released -- a new implementation of the Perseus Digital Library.**

Perseus 4.0, a new Java-based version of the Perseus Digital Library, is available for testing. It contains a faster, more manageable back-end and a more modern look and feel. Many features of Perseus are now available as XML services -- for example, developers can extract [well-formed XML fragments](#) of primary sources with full TEI-conformant markup in order to create their own front ends. [Read more...](#)

- What did an educated Roman know about the world? We've added Pliny the Elder's encyclopedic [Natural History](#), ([search](#)), a remarkable snapshot of the state of Geography, Ethnography, Astronomy, Biology, and Geology in the early Roman empire.
- New reference works: Smith's [Dictionary of Greek and Roman Antiquities](#) ([search](#)), and Smith's [Dictionary of Greek and Roman Geography](#) ([search](#)). Although both works are more than a hundred years old, they remain valuable sources for information about the classical world.
- Seen the movie and want to read the book? We've added Benner's commentary on selections from [the Iliad](#), including a short [Homeric Grammar](#).
- New [Roman History texts](#): [Appian](#) and [Polybius](#)
- View [all recent announcements...](#)

Exhibits



[Perseus contact and support information.](#)

Perseus is a non-profit enterprise, located in the [Department of the Classics](#), [Tufts University](#).

The Perseus Project is funded by the [Digital Libraries Initiative Phase 2](#), the [National Endowment for the Humanities](#), the [National Science Foundation](#), the [Institute of Museum and Library Services](#), [private donations](#), and [Tufts University](#).

Support for the project has been provided by the [Annenberg/CPB Project](#), [Apple Computer](#), the [Berger Family Technology Transfer Endowment](#), the [Fund for the Improvement of Postsecondary Education](#) part of the [U.S. Department of Education](#), the [Getty Grant program](#), the [Andrew W. Mellon Foundation](#), the [Modern Language Association](#), the [National Endowment for the Arts](#), the [Packard Humanities Institute](#), [Xerox Corporation](#), [Boston University](#), and [Harvard University](#).



The ARTFL Project

The Project for American and French Research on the Treasury of the French Language (ARTFL) is a cooperative enterprise of Analyse et Traitement Informatique de la Langue Française (ATILF) of the Centre National de la Recherche Scientifique (CNRS), the Division of the Humanities, the Division of the Social Sciences, and Electronic Text Services (ETS) of the University of Chicago.

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A searchable version of Diderot and d'Alembert's *Encyclopédie*.

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French and English dictionaries and other tools, including the new computerized *Trésor de la Langue Française* dictionary ([TLFi](#)), from ATILF.

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Information about PhiloLogic, ARTFL's full-text searching system.

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