Literature, Language, and the Rise of the Intellectual Disciplines in Britain, 1680–1820

ROBIN VALENZA

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The current divide between the sciences and the humanities, which often seem to speak entirely different languages, has its roots in the way intellectual disciplines developed in the long eighteenth century. As various fields of study became defined and to some degree professionalized, their ways of communicating evolved into an increasingly specialist vocabulary. Chemists, physicists, philosophers, and poets argued about whether their discourses should become more and more specialized, or whether they should aim to remain intelligible to the layperson. In this interdisciplinary study, Robin Valenza shows how Isaac Newton, Samuel Johnson, David Hume, Adam Smith, Samuel Taylor Coleridge, and William Wordsworth invented new intellectual languages. By offering a much-needed new account of the rise of the modern disciplines, Robin Valenza shows why the sciences and humanities diverged so strongly, and argues that literature has a special role in navigating between the languages of different areas of thought.

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CHAPTER 1

The Economies of Knowledge

A contradiction lurks at the core of ideals of enlightenment. The resolution to generate new knowledge is often incompatible with a simultaneous desire to share this knowledge with an ever-expanding pool of readers.[1] While eighteenth- and nineteenth-century writers took up Francis Bacon's seventeenth-century rallying cry to advance learning across fields of study, the commitment to this Baconian project often ran at cross-purposes with the Addisonian wish, articulated on the pages of the early eighteenth-century *Spectator* papers, to illuminate the minds of the widest possible readership. Francis Bacon himself encouraged limiting the publication of and access to knowledge.[2] The discordance between these two goals was only rarely voiced straightforwardly in the eighteenth century, but nonetheless their dissonance came to define the development of the republic of letters.

In one of the few trenchant treatments of enlightenment's dilemma, physician, playwright, poet, and novelist Oliver Goldsmith explains,

> We now therefore begin to see the reason why learning assumes an appearance so very different from what it wore some years ago, and that instead of penetrating more deeply into new disquisitions, it only becomes a comment on the past; the effort is now made to please the multitude, since they may be properly considered as the dispensers of rewards. More pains [are] taken to bring science down to their capacities, than to raise it beyond its present standard, and his talents are now more useful to society and himself, who can communicate what he knows, than his who endeavours to know more than he can communicate.[3]

These lines argue that efforts to pursue individual topics more deeply keep knowledge out of the broad grasp of the "multitude." In Goldsmith's estimate, the author who recognizes that this multitude is the wellspring of fame and financial gain would eschew the pursuit of new knowledge in favor of appealing to a wider audience. Goldsmith allies this profit motive with social benefit – the more readers who reap the benefits of learning, the more useful the learning is to society. In a bit of Mandevillian sleight of hand, Goldsmith proposes that a writer with a self-interested eye to

fame and fortune is also looking out for the public good because authorial decisions based on a desire to secure the widest audience guaranteed that knowledge is made available simultaneously to as many readers as possible.[4]

Popularizations, Goldsmith writes, "may justly give a scholar disgust, yet they serve to illuminate the nation." Some modern historians of Great Britain have followed suit in adopting the values of writers such as Goldsmith, lauding a country and a century of writers who were not "ivory-towered academics but men (and women) of letters who made their pitch in the metropolitan market place and courted the public."[5] The anachronism of the ivory tower metaphor notwithstanding, such constructions tend to gloss over the scourging difficulties that writers across the intellectual disciplines had in bringing or refusing to bring the written expression of scholarly researches into concord with these communicative goals. When, alternatively, intellectual historians have rejected the essayists' values, they have often also thrown out most of the intellectual production of eighteenth-century Britain. It is a mistake to believe that most essayists, or popularizers, espoused a complete sacrifice of learned discourse. It is equally misguided to believe that specialized study did not make tremendous leaps and bounds forward during this century. To complicate matters, not everyone agreed with the project of making the scholarly and sociable worlds linguistically coextensive. Disciplinary fields often benefited from having expert languages that were inaccessible to practitioners of other disciplines and to the reading public at large.

In other words, our critical perspective has made too simple a densely tangled phenomenon. While Elizabeth Eisenstein's "print culture" and Benedict Anderson's "imagined communities" remain useful ways to conceptualize an era, their critical paradigms are often taken out of context by scholars wishing to celebrate the unlimited potential of print to share information with the widest of audiences.[6] Abuses of these analyses have had the unfortunate side effect of cementing in the literary-critical mind a conception of a public literary realm with a consistent and idealized notion of audience and an equally shared system of objectives, even when the authors they cite gave attention to fragmentation and discord.

Along the same lines, when Jürgen Habermas and Reinhart Koselleck gave their respective accounts of the European Enlightenment, each confronted the weakness of public access to the political process in 1950s Germany, and both looked to the eighteenth and nineteenth centuries for the origins of and alternatives to the present condition. For their purposes, finding a unified, Weberian ideal type of what constituted "society" or a

"public sphere" in opposition to a "state" before the nineteenth century in Europe was an effective and necessary measure.[7] But taking Habermas's public sphere or Anderson's national community as givens and asking how those social formations were realized in the eighteenth century often twists these paradigms to the breaking point.

Another problem emerges from uncritical appropriations of these models. Because science does not figure centrally in either Habermas's or Anderson's portrayal of the eighteenth and nineteenth centuries, latter-day Habermasians or Andersonians tend to assume that by default science followed a fundamentally different, and separate, course from the humanities.[8] Modern academic tunnel vision thus comes with a high price: a scholar who focuses on the origins of his or her particular field of study avoids exploring in any depth what the disciplines had in common with one another both before and during the centuries-long process of differentiation. Literary scholars in particular treat their field as a special case in the emergence of the disciplines because, they argue, literary criticism had a peculiar responsibility to create a national community by explaining and creating a shared literary heritage, and therefore the field had much more difficulty in specifying both its potentially universal audience and its potentially limitless object of study than other disciplines.[9]

But while it is safe to say that no two disciplines followed identical courses, I argue that practitioners across all disciplines – both those that are now known as humanities and those currently classed as sciences – found the process of defining and describing their fields of study to non-experts both wrenching and difficult. And most struggled to negotiate how print could help them reach targeted audiences of fellow experts at the same time that it could help them gain wider public support for their work.[10] Recent academic writers who propose reuniting several academic disciplines under the common heading "science," may wish to consider this early history of modern disciplinary differentiation.[11]

Although the growing distance between the expert and the reader may have been overlooked by later historians, it was a signal preoccupation of the eighteenth century. The public perception of intellectual specialization created a crisis of relevance. Critics of specialization pointed out that if disciplines became narrower in their focus, it would no longer be clear how their research pertained to the daily lives of individuals, or to the political life of the state. This was exactly the problem the long eighteenth century had identified as the fault of the medieval scholar: his researches bore not at all on the world outside his study. Now eighteenth-century thinkers faced the same difficulty in a new form: they ran into roadblocks in arguing for

the importance of what they did when it had no obvious or immediate bearing on individual lives.

From the eighteenth century into the present day, the real-world applications of scholarly research have been held up as the standard for measuring its importance. Indeed, it was those who worked in specialized fields who most vociferously propagated this standard. In examining attempts to link theory and practice, I argue that the connection between scholarly work and life was often manufactured precisely to gain public attention for a discipline. Popularizers and promoters of Newtonian physics, for instance, made broad claims for the applicability of the new physics to problems in engineering and navigation, although the solutions to these problems had little to do with Newton's own contributions to science. Such an emphasis on practical results and public benefits was often the means by which specialized fields both announced and defended their own expertise even while closing it off from general access.[12]

When managed well, popularization and specialization could thus be complementary phenomena, two sides of the same coin. By the late eighteenth century, many writers believed that the ability to bring specialization and popularization into productive tension was necessary because specialization had already become so pervasive as to prevent turning back. Individuals had already come to be limited intellectually by their occupations so that even known intellectuals required occasional assistance from a popularizer or teacher.

Efforts to create a *lingua communis* to describe a common knowledge, or to appeal to a common sense – so often seen as characteristic of the eighteenth century – had their origins in the need to build bridges between the difficulty of learned writing and the abilities of an often ill-educated body of readers. It is perhaps all too common a practice to mistake Addison's familiar claim in *Spectator* No. 10 to bring "Philosophy out of Closets and Libraries, Schools and Colleges, to dwell in Clubs and Assemblies, at Tea-Tables and in Coffee Houses" for a more republican statement than it is. Marshaled alongside a few key lines from the preface to Locke's *Essay Concerning Human Understanding*, this sentence has often been used to argue that the reaction against monastic scholasticism in the long eighteenth century entailed widespread participation in philosophical conversations that came to shape the course of British letters.[13] But such readings downplay the early century essayists' explicit claims to expertise in contradistinction to the abilities of their audience.

Even within the confines of *Spectator* No. 10, Addison describes his readership as a vacant, occupationless body of persons – "Blanks of Society" – who

must wait for an infusion of thought and opinion from those more intellectually focused than themselves. He imagines not a participatory readership but an absorptive one. And Richard Steele's *Tatler* is built on the premise of *reporting* news from the learned world to the sociable one. He does not undertake the task of making his readers as learned as he.[14] The career of the popularizer depended on having something to bring to a popular audience, or at least on making that audience believe he could do so.

This attitude toward the abilities of the average reader raises its head again in the mid-century essays of David Hume, who suggests that most readers are shallow thinkers only capable of the superficial cogitation requisite for "coffee-house conversation." In his account, these mental lightweights depend on a separate class of abstruse philosophers to provide them with new information. Addison, Steele, and Hume depict the reading public as participating in learned discourse only at a remove, consuming it secondhand as fed to them by those capable of digesting learned discourse and regurgitating it for a broad audience. In their portrayals, knowledge chiefly moves only in one direction, downslope from the learned to the unlearned.[15]

This book aims to confront the double-edged sword of enlightenment by telling a story of the intellectual disciplines' emergence in their modern form. Perhaps surprisingly, it is a story that has yet to be told. No single, general description of how intellectual disciplines form, evolve, or die has – to date – been written. My account assembles a band of strange bedfellows. It puts Adam Smith and his compatriots of the Scottish enlightenment alongside twentieth-century sociologist Talcott Parsons, Immanuel Kant next to Benedict Anderson and John Guillory, Karl Marx with Richard Feynman, Mary Poovey in the company of Emile Durkheim, and Lorraine Daston beside all ten members of the Gulbenkian Commission on the Restructuring of the Social Sciences. An account born of these forced couplings may remain somewhat Frankensteinian, connecting, perhaps crudely, pieces from economic, sociological, historical, political, philosophical, biological, and literary-critical writings. But I nonetheless put forward my effort at forming such a creature, this intellectual monstrosity, to draw attention to where disciplines come from, how they function, and why they sometimes slip away.

I propose here a working definition of "discipline." A discipline is a field of study that has a recognized community of researchers who have in common most of the following: an agreed-upon name, a loosely identified object of knowledge, shared research goals, a finite set of methods of

inquiry, a generally accepted intellectual tradition, a group of institutions that persist and remain stable over time (such as university departments and academic journals), a system for perpetuating the discipline by training new practitioners, a group of working concepts and rules for adding new rules and concepts, and an established manner for communicating their findings.[16]

While much of the existing work on academic disciplines has been based on an analysis of natural and social sciences, part of this book's motivation lies in determining how concepts of disciplines change when the histories of the humanities and the arts enter into the disciplinary conversation. I have borrowed from Parsons's classic sociological definition of a discipline, which requires the following three characteristics: "formal technical training accompanied by some institutionalized mode of validating both the adequacy of the training and the competence of trained individuals"; "mastery of a generalized cultural tradition … in a manner giving prominence to an *intellectual* component – that is, it must give primacy to the valuation of cognitive rationality"; and "institutional means of making sure that such competence will be put to socially responsible uses."[17] This definition is both broader and narrower than my own; I aim to be more precise about what practitioners of a discipline do in their working hours and give a bit less emphasis to their training. I also try throughout to heed Foucault's cautions in *The Archaeology of Knowledge* about the difficulty of identifying stable "objects of knowledge," and the equally trenchant advice of Ellen Messner-Davidow, David Shumway, and David Sylvan to "refuse to equate disciplinary knowledge with 'truth.'"[18] I treat each discipline's proposed object of knowledge in combination with an aggregate of properties, methods, and means of expression.

My definition of a discipline can be roughly construed as a Weberian ideal type, but, more precisely, it is what biological taxonomists now call a *species* – "an entity composed of [individuals] which maintains its identity from other such entities through time and over space, and which has its own … evolutionary fate and historical tendencies," or, as the organizational systematists have put it, "a form of organization that exists through generations of individual[s] … which are members of the species."[19] Turning to a biological definition of species as a model for "discipline" has the additional advantage of providing an account of speciation, or specialization, the tendency for a species to come to occupy a particular niche in an environment by "performing a few activities well" instead of "many activities poorly."[20] The modern systematist's descriptions of species or types are polythetic; that is, they do not require that every member

possess a single, defining characteristic that can distinguish a member of one species from members of all others. Although such singular qualifications were demanded by earlier, Aristotelian systems of classification, modern taxonomic systems define groups by using a network of properties, each of which will be possessed by many, but generally not all, members of the species. For my study, this means that not every disciplinary species will fall into exactly the same mold, meet the same set of specifications, or possess a single quality that separates it from all other disciplines. Rather, each discipline and its members will have many, if not most, of the qualities enumerated above in common, which unite their practitioners over time and over geographical distances.[21] Though most practitioners of a discipline, living and dead, will never have met one another, their connections, their "invisible colleges" as Robert Boyle famously called them, remain closer than one of Benedict Anderson's "imagined communities" because those working in a discipline are few enough in number to know the research of many of their colleagues, thanks to the implicit requirement that research be circulated in at least a limited manner.

Changes in manners and methods of publication were key to the rise of new structures of disciplinary organization that began to coalesce in the eighteenth century. My study of the intellectual disciplines, their literary productions, and their relationship to public culture begins in the late seventeenth century and follows the development of three disciplines – physics, philosophy, and poetry – through the early nineteenth century.

My study thus focuses on three particular cases, cases which bear the considerable burden of standing in both for other examples within the disciplines represented here and for disciplines that are not represented here at all. My justification follows one that Auerbach gives in his work on literary language: "It is patently impossible to establish a synthesis by assembling all the particulars. Perhaps, however, we shall be able to do so by selecting characteristic particulars and following up their implications."[22] In other words, I have chosen here to cover an immodest topic in modest form in the hope that it will be suggestive, not comprehensive.

These three disciplines are the necessary first nodes of analysis for the long eighteenth century in Britain, and, I argue, can stand in for the rise of the intellectual disciplines in their modern form more generally. (I return later to the significance of each of these particular fields.) This book could but does not contain chapters on biology, chemistry, painting, musicology, history, and rhetoric, among other disciplines. Material for (and in a few cases drafts of) these potential chapters occupies much of my filing

cabinet and could easily have swelled (or bloated) this book to enormous proportions. Those other disciplines have been left out in part for the sake of keenness of focus and because they have failed at least one of two tests: either their modern disciplinary center of gravity is not the British Isles, or their signal move into modernity arrived later than the early nineteenth century. A book that concentrated more centrally on the European Continent or reached further into the nineteenth century might, as Michel Foucault's *The Order of Things* has done, name "life, language, and labor" as the three flashpoints of disciplinary change.

Biology does not have a chapter in this book because it fails both tests. The eighteenth-century developments in the sciences of life resided primarily in Scandinavia with Linnaeus and in France with Buffon and Lamarck. And all of this work was turned on its metaphorical head in Britain and elsewhere by the Darwinian revolution of the later nineteenth century.

Like biology, chemistry also saw two major shifts between 1700 and 1900. Although some of chemistry's key players (Boyle, Priestley, Kirwan, Davy) worked in the English-speaking world, the story about the establishment of chemistry as a discipline that distinguished itself from alchemical research comes to its climax in pre-Revolutionary France, with the formal transformation of chemical nomenclature and the definitive rejection of the phlogiston theory. The complete story of chemistry's disciplinary modernization, including the erosion of the Vitalism hypothesis, would need to include the quiet rise of organic chemistry, where no single, revolutionary shot was fired. Rather, the history of organic chemistry is diffuse – both temporally and geographically: it emerges from a gradual accumulation of knowledge across western Europe over the nineteenth century.

All this is to say that the first wave of disciplinary modernization in Britain was felt more palpably in some disciplines than in others. In much the same way, the eighteenth-century writing of history in Britain saw major works produced by Hume, Smollett, Robertson, and Gibbon, among others, but the emergence of the modern academic historian was a creation of later years that moved outwards to the rest of the globe from its center in the German university among Leopold von Ranke and his students.

To the list of chapters that did not make it into this book, I must add one on linguistics: the modern discipline of linguistics arrived in Britain much later than the other disciplines discussed in this book. The discipline that has the strongest claim to demand its own chapter is political

economy, Foucault's "labor." As a discipline, it is often visible throughout this book, but as one of the tools of disciplinary analysis rather than an object of it. The eighteenth century saw the mere glimmering of what political economy would become in future centuries.

Medicine, law, and theology are not candidates largely because they are professions as much as or more so than disciplines, and in most respects their key attributes were already well established before 1650. I should pause to note that although one can reasonably speak of the professionalization of a discipline if one is referring to increasing levels of organization and internal cohesion in a disciplinary field, a distinct difference persists between a discipline and a profession. Disciplines are committed to research and to the advancement of knowledge. Some professionals attached to universities may also serve this function; when they do, we say that their research and teaching belong to the discipline of law, medicine, or theology. But by and large the professions of law, medicine, and the clergy are primarily committed to providing a public service, rather than pursuing research. Similarly, the teaching of law, medicine, and religion is first and foremost designed to shape those who will perform the services of lawyer, doctor, priest, rabbi, minister, or imam. Most professionals will never do first and foremost research in their field and will not consider teaching future professionals to be a primary function of their professional activity. This division between the intellectual disciplines and the professions was already very much alive in the eighteenth century. Kant's *Conflict of the Faculties* finds the separation of professions from disciplines salubrious for scholarly research. In Kant's reckoning, the "lower faculty" – the professoriate committed to scientific and humanistic research – do not directly answer to public needs. But the higher faculty – which educates future doctors, lawyers, and clergymen – and their students are ultimately beholden to the populations that they serve and as such are subject to governmental regulation to a much greater degree than the practitioners of the intellectual disciplines.[23] This study pertains almost exclusively to the development of the intellectual disciplines, and not the professions, because the courses of their respective developments do not always run parallel, especially with respect to financial compensation and training.

Though the western university has actively resisted being conquered by economic forces since well before the seventeenth century, the modern articulation of disciplinary forces and the simultaneous change in the structures of knowledge are coeval with eighteenth-century theories of market capitalism and with modern notions of labor. It is also not coincidental that the terms in current use to describe biological species bear

a strong resemblance to those that describe economic specialization: the term "ecology" was coined in the nineteenth century by analogy with "economy." The evolutionary pressures that lead towards biological specialization (or away from it) seem to operate by mechanisms similar to the market pressures that produce specialists in different fields of human labor. Scottish academic philosophers of the long eighteenth century were well aware of market forces at work in their field at the same time that they were theorizing this market. Writers of this period across disciplines represented scientific and humanistic researches as intellectual *labor* supported by investments of financial capital. Isaac Newton's work, for example, was characterized by early historians of science as being composed of "many vast and laborious trains of research" that were "confirmed, illustrated, and completed, by the labours of succeeding philosophers." And such investment of human labor likewise demanded "an expenditure of private and public resource" – both financial and intellectual.[24] Similarly, in arguing for chemistry's status as a full-fledged science on a par with mathematical physics, early nineteenth-century chemists and historians of chemistry emphasized "the months of incessant labour" required for even the smallest of chemical discoveries followed by "months in detailing" the experimental results for publication, all supported by the budgets of newly formed research institutes and private fortunes. The intellectual exertion and monetary expense demanded by the project of scientific enlightenment were frequently defined against the perceived cerebral laxity of previous generations of scholars who had only produced "dark speculations," unfounded in systematic, mental and experimental toils.

This emphasis on cerebral labor is notably absent from discussions of fields that failed to gain university disciplinary status, such as the writing of poetry. While poetry had, over the preceding centuries, competed with history as the most important means of representing knowledge for a general readership, nineteenth-century British poets opposed the idea that "labor and study" could produce better poetry.[25] While the inspired genius of a philosopher also entailed an attendant amount of difficult cranial work, the poet's inspired genius was portrayed as existing in a realm that took no account of the value of labor, mental and otherwise. However, the poets did have in common with the natural and moral philosophers the observation that over the course of the eighteenth century individuals had increasingly adopted narrow intellectual frameworks in which they pursued their vocations. Poetry was thus deaccessioned, undisciplined.

Writing in the 1770s, Adam Smith urged his audience to take note of the relationship between an individual's occupation, the limitations on

his or her time and training, and the consequent limits on the intellectual contributions he or she could make to the advancement of learning. In an early draft of his great economic treatise, *The Wealth of Nations*, he writes,

> In opulent and commercial societies, besides, to think or to reason comes to be, like every other employment, a particular business, which is carried on by a few people, who furnish the public with all the thought and reason possessed by the vast multitudes that labour. Let any ordinary person make a fair review of all the knowledge which he possesses concerning any subject that does not fall within the limits of his particular occupation, and he will find that almost every thing he knows has been acquired at second hand, from books, from the literary instructions which he may have received in his youth, or from the occasional conversations which he may have had with men of learning. A very small part of it only, he will find, has been the produce of his own observations or reflections.
>
> All the rest has been purchased, in the same manner as his shoes or his stockings, from those whose business it is to make up and prepare for the market that particular species of goods.[26]

Knowledge acquired in the classroom, through private reading, or, less frequently, from direct contact with "men of learning" is knowledge purchased "second hand." Obtaining information in this manner is no different, Smith suggests, from the buying of any other product. As with the trade of material goods, there are individuals whose particular task it is to create knowledge and prepare it for market. It has long been recognized that the chief innovation of Smithian economics is its insistence that the division of labor is the driving factor behind modern social and economic systems. What is less often remarked, however, is that Smith extends his theory of the division of labor into the republic of letters itself. Adam Smith offers us the earliest statement about the division of *intellectual* labor, identifying it as endemic to the advancement of learning, the progress of societies, and the accumulation of wealth.

Smith's characterization departs from earlier descriptions of the divisions of knowledge because he argues not only that knowledge is divided among different fields of study but also that individual human beings have themselves become specialized, each eventually committing to advance a single field of knowledge. Before Smith, for example, in Bacon's *Advancement of Learning* or in the tree of knowledge at the front of Diderot's *Encyclopédie*, disparate fields of knowledge were distinguished by the different mental faculties used in pursuing each of them; however, the tacit assumption was that because every person possessed all faculties, he could thus readily participate in the range of disciplines. Chambers's *Cyclopedia* recognizes the longstanding "Distribution of the Land of Science" into "a number of Provinces, under distinct Names." But Dugald Stewart, professor of moral

philosophy at the University of Edinburgh from 1785 to 1820, explained that all evidence derived from the previous century of experience points to the mistakes in Bacon's or the *Encyclopédie*'s system of knowledge based on mental faculties. "[I]t seems to follow," Stewart writes, "not only that the attempt of Bacon and of D'Alembert to classify the sciences and arts according to a logical division of our faculties, is altogether unsatisfactory, but that every future attempt of the same kind may be expected to be liable to similar objections."[27]

What Smith adds to this sort of theoretical articulation is a recognition of the growing need for scholars to associate themselves with smaller and smaller pieces of intellectual territory, a process that had already rapidly begun to accelerate towards the moment at which a scholar who wanted to increase the store of human knowledge would need to confine his research to only one discipline. Increasingly, the Baconian model began to be replaced by Smith's,[28] as the "field of knowledge" was less often described according to the seemingly arbitrary hierarchies derived from Aristotle and more in terms of disciplinary divisions deemed necessary for advanced research.[29]

Both Smith and Stewart treat intellectual specialization as a natural consequence of the division of labor, arising from no intentional human wisdom, but rather from propensities inborn in the species itself. This innate tendency towards division and exchange does not stop at the production of foodstuffs, cloth, ships, or machine parts, but permeates all aspects of life because modernity and progress hinge on the adoption of a commercial attitude, acknowledged or not, towards every element of human existence.[30] Unlike writers of later generations who take on a tone of lament, Smith is matter-of-fact about the connection between an individual's occupation and the limits of his or her knowledge.

Samuel Johnson had much the same to say in a posthumously published fragment on the character and duty of an academic. He writes that although in "places thinly inhabited … necessity compels every man to exercise more arts than he can learn," the great mark of civil society is the "distribution … of employment" so each person becomes an expert in a particular practice or study.[31] In this distribution, the "task assigned" to the academic is "diligence of inquiry and liberality of communication": study, teaching, and writing. This set of duties stands in contradistinction to that of men "whose active employments allow them little time for cultivating the mind, and whose narrow education leave[s] them unable to judge of abstruse questions." In the best of circumstances, these narrowly

educated men rely on their academic teachers for finding out and certifying truth: indeed, they "may repose upon their instructors, and believe many important truths upon the bare authority of those from whom they received them." This discussion revisits *Rambler* 121 (1751), in which Johnson argues for the inevitability of intellectual specialization: "Even those to whom Providence hath allotted greater strength of understanding, can expect only to improve a single science. In every other part of learning, they must be content to follow opinions, which they are not able to examine." Bare authority may have been shunted from the eighteenth-century political stage, but it played a leading role in the public realm.

One need not wholeheartedly embrace the eighteenth-century perspective to notice that the economic model of knowledge generation and transmission still has a useful descriptive function.[32] The "balance of trade" paradigm for the disciplines describes a world in which, by marking off individual areas of specialization, more knowledge is contributed to the intellectual marketplaces. And we can likewise see that certain protectionist measures – requirements for greater levels of training, mastery of expert languages, and the like – gradually prevented lay men and women from participating in the production of knowledge and sealed their role as consumers, rather than producers, of information.

In proposing that the realms of learning were also subject to economic pressures, Smith was not making a novel argument. The relations between the advancement of knowledge and economic transaction had been examined often in the eighteenth century. In the thinking of the period, the intellectual disciplines could only advance when supported by a full and thriving commercial economy predicated on the division of labor. David Hume wrote in his 1752 essay "Of Refinement in the Arts" that "*industry*, *knowledge*" and civilized notions of "*humanity*" were "linked together by an indissoluble chain." "We cannot reasonably expect," he asserts, "that a piece of woolen cloth will be wrought to perfection in a nation, which is ignorant of astronomy, or where ethics are neglected."[33] Hume's succinct formulation captures perfectly the complex interdependence of the divided fields of labor, while at the same time confirming that their division is what makes progress possible. Only by establishing a class of individuals and an industry to make woolen cloth, a separate group to study astronomy, and a third to pursue ethical theory, could the arts and sciences – and therefore humanity itself – drive towards social and economic advancement. This, according to Hume, is what distinguished England from barbarous nations that were uncivilized precisely because they had

not instituted separate fields of activity managed by distinct (intellectual) classes of individuals who had committed themselves to progress in each field.

Fellow economist and philosopher Adam Ferguson stressed that not just science or industry, but civil society itself, benefited from the division. In his treatment of the "Separation of the Arts and Professions" (his term for the division of intellectual labor), Ferguson argues that "a people can make no great progress in cultivating the arts of life, until they have separated, and committed to different persons, the several tasks, which require a peculiar skill and attention."[34] Ferguson notes that some of this specialization is inevitable, if at times regrettable. And Hume looks back with some nostalgia at ancient Greece and Rome, when, for example, "The study of the laws was not then a laborious occupation, requiring the drudgery of a whole life to finish it, and incompatible with every other study or profession."[35] Like Hume, Ferguson expresses some reservation about the writing of *belles lettres* becoming a trade and requiring "all the application and study which are bestowed on any other calling."[36] But both men also celebrate the benefits that fall from the intensification of professional or vocational focus.

Hume goes so far as to predicate conversability or sociability – arguably the most central quality in British self-representation from Locke through Coleridge – on this division. The more the "refined arts advance," Hume argues, "the more sociable men become." As Great Britain becomes "enriched with science," its inhabitants are simultaneously awarded a "fund of conversation" that forces them among their fellow Britons for the purposes of intellectual exchange. This is what separates them from "barbarous nations."[37] If the pre-condition for specialization in the economic realm is a mechanism for exchange, the same holds true for intellectual specialization. A specialist needs to bring his knowledge to the marketplace. But where does one find such a marketplace?

Smith also implies that the division of intellectual labor depends on a mechanism for sharing disciplinary knowledge – "second-hand" – with those for whom the production of such information is not their primary responsibility. That is, a thriving press is an essential part of large-scale intellectual specialization. Smith underscores the consumerist attitude that most take towards learning. During the leisure time available to those of the middling and upper ranks, they buy and partake of knowledge in much the same way they do tea or chocolate. Knowledge for many constituted a species of entertainment, and was often represented as such.