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The Helmholtz Maneuver, or *The Idea of (Honors in) a University*

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Whoever, in the pursuit of science, seeks after immediate practical utility may generally rest assured that he will seek in vain.

—Hermann von Helmholtz

What does honors offer the university that supports it? On the NCHC list-serv this summer, a plea for help came from a colleague whose university was considering dropping its honors program. As budgets grow tight, small, expensive honors programs become vulnerable, and their defenders need arguments that administrators can hear and understand. Most campus-wide honors programs offer a general-education-based curriculum. Unfortunately, few campus units defend the idea of general education as a whole although they may fiercely guard their particular piece of it. At many schools, campus-wide honors is one of the few academic programs to be rooted in a part of the curriculum often regarded as a necessary evil; as such, it has few allies. However, if general education is really important, then bright students need and deserve a special course of study in this area that can help them develop the habits of mind and abilities that it has long been intended to produce.

Education is like science in that it is often thought to be worth pursuing because of its practical results. The promoters of STEM education are primarily interested not in the coherence or beauty of scientific theories but in the economic importance of applied science and technology. As the great German philosopher, physicist, and psychologist Hermann von Helmholtz noted in 1862, however, there is a catch to the pursuit of economic success through science: hunting for “immediate practical utility” rarely works. The unspoken argument here is that the pursuit of science for its own sake, unfettered by commercial concerns, ultimately pays off in useful if unexpected ways. Helmholtz’s maneuver has been undertaken by champions of basic scientific research to the present day. Through his interest in physiological optics, for instance, Helmholtz invented the ophthalmoscope in 1851, and his many contributions to mathematical physics and the philosophy of science

helped to create the conditions for the revolutions in early twentieth-century physics with their practical outcome, atomic fission. Like Helmholtz, scientists like Einstein, Bohr, Rutherford, and others started out wanting only to discover how nature worked. They did not aim to change the course of the twentieth century.

The same relationship we see between pure and applied science is present in ideas about education. Naturally we hope that education is useful, but, if we educate only for “immediate practical utility,” we get a different result than what we commonly expect from university study. At most four-year colleges, about a third of a student’s coursework is still given over to general or liberal education even though the perennial debate continues between those who see education’s value in terms of its usefulness and those who defend learning for its own sake. In tight economic times, utility and the bottom line loom large in the political and popular imagination. Nonetheless, we offer a general education, especially in honors, without reference to immediate usefulness because we believe that it serves an important purpose.

Is honors frivolous? Have a glance at the titles that grace the sample syllabus page of the NCHC website: “Monsters and Marvels,” “The Seven Deadly Sins,” and “Sex, Freud and Morality” all sound interesting, but not immediately useful. While there are honors programs in professional programs such as nursing and education, for many students the norm for honors is the college-wide program with a curriculum that generally substitutes for some or all general education requirements. The courses might form a coherent core sequence, shaped by the logic of a particular approach to historical, philosophical or social themes, or they might offer a constantly changing array of idiosyncratic topics developed by a rotating pool of professors recruited to teach for honors. Regardless of the model, most students experience honors as members of small classes discussing big questions with little regard to immediate utility.

This focus on ideas rather than utility is currently a problem because the attention of politicians (and so university administrators) is focused on making higher education lead directly to success in the “real world.” The rhetorical implication is that poetry, history, and culture come from a different planet than the laws of nature and economics (philologists are from Mars?). As low-enrollment programs with a tenuous connection to the reification of “reality” are cut, champions of honors should ask themselves what, if anything, they can say to defend the usefulness of honors to the university.

A decade before Helmholtz warned against the exclusive pursuit of utility in science, John Henry Newman, newly appointed as rector of the Catholic University of Dublin, made a similar appeal in his *Idea of a University* (1852). Then as now, various advocates debated the purpose of a

higher education, and many criticized the impractical, useless model of education at Oxford. In his classic response to this attack, Newman elucidated a conception of university education that has been influential ever since. Education for a particular profession or vocation, Newman argued, is by its very nature the means to an end: the making of money or the training of a particular kind of professional, for example. Such a vocational education is servile since it serves an end other than itself (88–90). A liberal education, on the other hand, has no such ulterior purpose or use. Quoting Aristotle, Newman noted that while useful possessions “bear fruit,” liberal possessions are used only for their own sake, and when they are used “. . . nothing accrues of consequence” (89). A liberal education is the pursuit of knowledge for its own sake and for the pleasure it gives the mind. While the useful arts and sciences are to be praised for the goods they bring, Newman claims that a liberal education, although pursued for its own sake, brings about a desirable end in the kind of knowledge it grants the learner.

The knowledge Newman defends is “informed, or . . . impregnated by reason” (91); it is a habit of mind that allows its possessor to properly balance differing perspectives and that “sees more than the senses convey; . . . reasons upon what it sees . . . [and] invests it with an idea. It expresses itself, not in a mere enunciation, but by an enthymeme” (92). This vision of the power of rational knowledge makes it an active faculty rather than a substance that can be picked up and redistributed. It is, Newman insists, “an acquired illumination, . . . a habit, . . . and an inward endowment” (93). In the twenty-first century we talk about the power of life-long learning or the importance of having critical-thinking skills. These concepts seem to have evolved from Newman’s conception of a dynamic power that the liberally educated learner possesses. In honors programs we foster conversations that seek to bring out a critical power in students that they can apply to questions in any field; we seek to make students part of a community of scholars who enjoy learning for its own sake; and we aim to make honors students the kind of independent seekers of truth who apply their “acquired illumination” to research projects that bridge the gap between the theoretical and the practical.

A liberal education can, of course, make a student better able to undertake any number of other activities, including useful professions. Having a habit of mind that allows one to focus disciplined reason on any particular problem can only be an asset, particularly in a rapidly changing world like Newman’s or (*a fortiori*) our own. A liberal education is part of a formation of character and intelligence that students need, and this justification is often offered today for the existence of general education classes. As the quotation from Helmholtz implies, economically valuable discoveries in science will follow from the disinterested pursuit of pure, theoretical knowledge.

THE HELMHOLTZ MANEUVER

Similarly, Newman suggests, a powerful mind will be able more easily to realize all sorts of practical goals, but such a mind is the product of a course of study that seeks knowledge for its own sake.

To those who argue that a liberal education is a pleasant luxury but too expensive to pay for given current exigencies, the Helmholtz/Newman tradition provides a compelling answer. If we turn our attention to solely practical ends for education, we will, paradoxically, undermine the very habits of mind that have enabled us to turn our learning to valuable account. We can create an army of workers with particular vocational skills that may serve the needs of the moment, but, as circumstances change, those who can change with them will have to take a broad view of circumstances and understand rationally how best to adapt to them.

Newman and Helmholtz agree that, if we want meaningful economic or practical success, we must devote ourselves with true purity of intention to the pursuit of “useless” knowledge. This claim resonates strongly in the honors tradition; it is a classic argument for the kind of liberal education that many honors programs undertake to provide. A program that seeks to serve all students will typically satisfy the general education requirement, and from this necessity a broad set of honors values has arisen: that particular content matters less than the mental exercise; that critical thinking and the life of the mind are ultimate goals; and that honors education can leaven all sorts of different educational paths and careers. It is not just our mission statements and brochures that are full of exhortations to excellence, but also our hearts. As honors teachers, administrators, and scholars, we have an appreciation for the habits of mind that transcend disciplinary boundaries, and we seek to help students become the kind of independent thinkers who can not only do research but also imagine and perceive the kind of particular projects that will yield the most interesting results. We can accomplish these goals only through an education that aims at more than a skill set or job training; we offer an education that aims to encourage the growth of what Newman called “an acquired illumination.”

We see bright students flourishing and growing thanks to honors education, a phenomenon that can be hard to explain to those unfamiliar with the process. We may find that we need to translate the messages of both Newman and Helmholtz into the quantitative dialect of assessment in order to share it effectively, especially with those who have the power to shape the modern university. We can try to translate the marvelous prose of Newman into numerical terms, however imperfectly. When assessment does not offer proof to justify our faith in honors general education programs, we should question both the design of the studies that generated them and the effectiveness of our curricula. If we find that our classes are not helping students achieve a true

liberal education, we can take advantage of our NCHC connections to improve our programs. We must be confident that our aims are well served by the tools we use to achieve it if we are to remain true to these aims.

We can look back to the nineteenth century for arguments to marshal in defense of honors education in the university. We can strive to help students reach the intellectual and moral goal that different ages have named “practical wisdom,” “a liberal education,” or “critical thinking.” To do so we must communicate the value of such an education in terms that will be well understood by those we seek to persuade. Only then will we be able to defend and continue the long tradition that counts Helmholtz, Newman, and many other luminaries among its followers. Honors students should pursue knowledge for its own sake, however useless it may seem on the surface. This kind of learning creates real intellectual growth and forms the minds of the great thinkers, innovators, and citizens of every generation.

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