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HOW ABOUT BECOMING A POET?

You have all come here to get what is called “an education.” Taken seriously, education is self-transformation. If you are serious, you have come here to become—to become something, or better, to become someone. If this is so, then how about becoming a poet? This is not a question; it is a serious invitation! And it is not just an invitation to the few of you who may, in the end, publish what we might agree to call poetry, but it is an invitation to all of you! For I believe there are poets in every human pursuit—in every profession, including law, medicine, and business. And I don’t mean physicians or lawyers or businesswomen who write poetry on the side. I mean people who are poets as surgeons, as judges, as managers. Let me explain.

For several reasons, I found it rather hard to write this speech. Besides being intimidated by an awe-inspiring list of predecessors, I became quickly beset by a curious nausea of language. Driven by my own research about the ways in which people come to support or oppose dictatorial governments, I wanted to speak about the relationship between liberal education, pluralism, freedom, critical thinking, creativity, and democracy. This is a big subject. Many people have written and talked about it before. In fact, this particular set of terms seems to be what one nearly always talks about once the topic of liberal education is broached. So it feels—unfortunately—rather tired. Worse, the virtues of “liberal education” are frequently extolled, while a focus on skill building and achievement testing makes education continuously less liberal. “Critical thinking” is often claimed by experts, by the mass media, or by political groups while they are more or less consciously doing public relations work for agencies on whose sponsorship they are dependent. “Creativity” has become a catchword abundantly used in marketing, as well as in job-axing corporate restructuring efforts. “Freedom” and “democracy” are the stock in trade used in political speeches to justify foreign and domestic policies which end up undermining rather than furthering freedom and democracy.

As I got depressed about the depreciated meanings of the very terms around which I wanted to structure this talk, I had an idea. It dawned on me that, broadly conceived, the topic of meaning loss and meaning making provided an excellent vantage point from which I could analyze the relationship between liberal education, critical thinking, freedom, creativity, and democracy. I began to hope that this speech could somehow contribute to the renewal of these very concepts. So, here I am. Before I go any further, let me clarify two central terms of my speech. I have so far spoken about words. Yet the problem of meaning loss and meaning

regeneration also affects the combination of words into jokes, stories, or theories, as well as gestures, formulas, graphs, pictures, sculptures, etc. In other words, it affects all of our symbolizations. And this, then, is the first central term of my speech. The second central term is meaning which I understand as the power of symbolizations to orient us in the world. They do so by orchestrating our interactions; conveying knowledge; exuding beauty; triggering insight; or assisting us in planning, remembering, or articulating happiness and suffering. Here is the plan for the next fifty minutes: I will begin the first part of this speech discussing the question of why the whole topic of making meaningful symbolizations should be of relevance to you. I will then go considerably deeper into this question by exploring how symbols come to have the power to mean anything at all. I will close the first part with a consideration of how meanings are lost and why they must be renewed. The whole second part of my speech will then turn toward what I take to be the key idea of liberal education and how, thus understood, it can further your freedom and creativity as artisans of meaningful symbolizations. Albert Einstein's special theory of relativity will serve me as an illustrative example.

ONE

It may sound strange at first, but most of you, no matter what you will eventually do for a living, will find that producing symbolizations is a central aspect of your work. The case is obvious for artists, scientists, journalists, engineers, and architects. Thinking more broadly, you will find, however, that coming up with a diagnosis in medicine or clinical psychology, that writing a report on the current situation and future development of a particular company or market, that drafting a contract, policy, or law which will actually work is just that: an act of artful symbolization. However, not only your excellence as a professional but also the quality of your life in general is vitally dependent on the quality of the symbolizations you will craft. As we all know, the good life is an examined life. For that purpose, you will have to find fitting descriptions in the world which also connect your past with your present and your future. Even our relationships with other human beings require suitable words for their upkeep and the resolution of inevitable crises.

The Power of Symbols

If making meaningful symbolizations is so relevant, we might really benefit from an understanding of how symbols come to orient us. What is the power of symbols? Interestingly, in our everyday appreciations of symbols we oscillate between two extremes. On the one hand we mock them, for example, by calling them "mere words." On the other hand we venerate them as first causes of existence, for example, in the Gospel according to John or the U.S. Constitution. How can we make sense of this?

In using symbols, we manage to "wrap" a part of the unwieldy manifold world as it appears to us into easily manipulable tokens. However, the wrapping relationship is complex. What

precisely gets wrapped, even in one and the same symbolization, may vary considerably with context. For example, your answer “I will” to the question “Would somebody please close the window?” wraps only a very limited commitment on your part into your words. Yet, the very same words “I will” wrap a lot more when you are replying to the question “Will you marry me?”

Conventions and context markers help us to sort out exactly what symbols wrap in a particular instance. We know from stories, movies, and countless conversations that a marriage proposal is about committing a whole person, and we often set up or seize a context to convey that: after an extraordinarily delightful candlelit dinner with sparkling conversation, we might fall on our knees to break out into verse—or so goes one of the easily recognizable scripts. In spite of the help of these context markers, however, what precisely gets wrapped in an instance of symbol use remains principally open to negotiation and exploration. Many of our discussions and arguments aim to fix the content of wrappings. When you said to your father you would “help in the kitchen” he may have wondered “Does this only include doing the dishes, or does this also pertain to peeling the potatoes?” It is important to note that this may have been unclear to both of you. Your father’s question urges a dual clarification then: to him and to yourself. His intervention alters your consciousness, however minutely.

What you will say next about the meaning of your words will, in all likelihood, have little to do with what you had in mind when you made your initial offer. What is at stake is not the past but the rest of the evening. Your reply may depend on your ethics, the strength of your ego, your history with your father, the means of conflict resolution available to you, etc. Moreover, what you might be willing to accept retrospectively as having been included in your initial offer may depend less on what and more on how your father said it. The aesthetic quality of the wrapping contributes a lot to how it will be received. In sum, then, symbols do not simply wrap what is there. Wrapping is a dynamic, even a generative, operation undertaken from within a life lived in a particular way, with particular projects in mind.

Much of the power of symbols resides in the fact that wrapping and wrapped exist in different forms. The word “sun” is but a small orderly trace of ink on paper or a set of brief air modulations; yet, what it wraps is in many uses a lot bigger, hotter, and shinier—it exists in an entirely different domain. To be useful, symbols must be more approachable, manipulable, or transportable than what they wrap. Only then can they perform their greatest feat: making present that which is absent. A map brings distant lands to us, a statue evokes a goddess which we are unlikely to behold in this life, a string of words brings back a long-gone historical event. The ability to present the absent deeply transforms the way we exist. By invoking for us now what no longer is or what only later will be, symbols make us into temporal beings with a future and a past. By calling up locations where we are currently not, they give our actions spatial depths beyond earshot and eyesight. By extending our here and now into there and then, symbols allow us to plan and to remember.

Now, remember your old Lego blocks. What makes them such a wonderful toy is that they come in different shapes and colors which can be combined in interesting ways. When you were still quite young, you were happy to mount them in any way your hands could manage. You might have named the results of your efforts something, e.g., “house for Mousey.” You might have even interacted with what you had built as if it was what you called it, even though the structure had no obvious resemblance to anything you would now call “house.”

As you became older, you undoubtedly endeavored to build either something you had seen or something you had mentally preconceived. For example, you might have built a Lego house resembling the house in which you lived. Doing so required not only increased skills of observation but also an increased understanding of what might be called the “logic” of Lego blocks: a growing mastery of the ways in which they can be assembled to produce particular kinds of visual effects. To become good at this, you had to take pleasure in playing with your Legos without too much concern for what it was that you might have wanted to build. You merely took pleasure in the logic of Lego blocks and its inherent possibilities.

Moreover, the logic of building with Lego blocks made you look at the house in which you lived with “different eyes” and think about it in new ways. If you were a Lego aficionado (like me), you learned to see and think Lego: you discovered aspects of your house you had not noticed before; and you asked questions about it, for example, regarding its statics, which you would never have dreamt of asking before. In fact, you always built more than you saw; and seeing with your contraption you also became aware that you always built less than actually existed. In the end, you might have become so swept up in Lego’s very logic that it began to feed your imagination to build things never before beheld by any human’s eyes or mind. You might have begun to make Lego fiction, enjoying it for its own sake.

Sophisticated symbol systems, that is, languages, resemble Lego blocks in significant ways. They differentiate types of symbols—for example, objects, relations, and qualifiers—which play different roles in the wrapping operation. And like Lego blocks, languages operate with logics of combination—which, in ordinary languages, we call grammar. Like Legos, then, they are suitable for sophisticated play. In fact, languages are the most wonderful play-sets we human beings have come up with. They easily put your old Lego blocks to shame. With different types of symbols at hand, we can build up big and complex edifices—super wrappings—like stories, formal proofs, or theories. And in language use, much as in Lego construction, something fascinating happens in the process of play. We simply forget that our symbols wrap anything at all. We begin to treat them as self-wrapping entities which derive their meaning solely from their relationships with one another. This is the step from using the figure three as a wrapping of three apples or oranges to taking it as a pure number among other numbers. We all set out on this path when we stopped calculating with our fingers; we went all the way when we became comfortable with algebra.

Through sheer play with symbols, we get self-contained universes of symbols—a world beyond immediate perception. All languages enjoy significant degrees of autonomy from the world. This affects our lives profoundly. We now have a medium in which we can pretend, work through alternative possibilities, and build counterfactuals and hypotheses; we get imagination, fiction, and fantasy. Hence, we can step out of the maelstrom of life into the medium of symbols to ponder the world. Without symbols, there would be no reflexive thought—no learning outside of an immediate context of action.

However, there are also problems with symbolic autonomy. If the world does not effectively constrain our symbolic play with its immense, if not infinite, combinatorial possibilities, then how do we make sure our play isn't just fun but also meaningful in our relationship with the world? In part, the answer is culture—complex traditions of symbol use into which we get socialized by learning a language. These cultures of symbol use often have a proven track record of producing meaningful combinations. The modes of scientific symbolization are amongst them. Nevertheless after some intensive play, we are faced with questions: “So what? Does our symbolization wrap anything at all? Do our symbols have the power to orient us?” With languages, those questions are never far away. This uncertainty is the source of our exasperation with language. It is a simple consequence of the fact that wrappings and what they wrap are different after all. Therefore wherever there are symbols, there is the possibility of doubt.

Of course the hope is always that when we put symbols to use in the world they do wrap and, therefore, organize it in such a way that we all of a sudden understand how it all hangs together. If it seems that way, we want to shout, “Eureka! I got it!” Through the use of symbols, the world— that unwieldy manifold—may suddenly look orderly, transparent, and navigable. Making meaning, that is gaining orientation through the use of our symbols, is exciting and empowering. Symbolic play brings the gift of insight and with it agency, which is the capacity for action. And this is the source of our enthusiasm for symbols as first movers. Ironically, then, the possibility of doubt, insight, and agency are three sides of the same symbolic coin.

Finally, shared symbols are literally the ground upon which we meet other human beings. They allow us to share in the presentation of the absent. They enable us to blend our imaginations, to communicate our thoughts, feelings, and bodily states. And thus, they make possible the coordination of our actions. Coordinated action, finally, creates the institutions which make up the fabric of our social life. Precisely because our symbols inform our actions and our actions make and break our institutions, the way we symbolize our natural environment, the family, and the state is a crucial component of what they are.

In sum then, symbols attain their power to orient us in the world because as wrappers they can make present what is absent, turning us into extended spatio-temporal beings; as a medium that is autonomous of the world and in which we can therefore play, they lend us the power to think and imagine; and as facilitators of social interaction, they enable us to form institutions. Symbols are integral to the ways in which we exist.

How Symbolizations Lose Their Meanings

If this is so, how is it possible to lose meanings that we once possessed? Asked differently: how do symbols lose their power? For a beginning, it is useful to identify three classes of common meaning loss. The first class comprises forms of symbol use which destroy meaning. Overuse occurs when too many different phenomena are wrapped in the same terms. If everything is said to be “cool,” nothing really is because the word “cool” loses its power to differentiate. Overuse destroys resolution. Ill-use occurs through the persistent employment of symbols in situations where it becomes rather obvious that they are misleading. If people persistently refer to other people as their “friend” while never treating them accordingly, one has reason to doubt that they mean what they say or that what they say means what we think it does. Ill-use may open an eerie gap between our symbols and our experience. My malaise in preparing this speech was prompted by the overuse and ill-use of the very terms— liberal education, pluralism, freedom, critical thinking, creativity, and democracy—I had picked as its organizing themes.

A second, very prevalent, class of meaning loss is generated by changing circumstances. Your parents’ pre-9 /11 map of lower Manhattan is in many ways entirely useless now. This shows that symbolizations may lose their meaning if their material, social, spatial, and temporal contexts change significantly.

A third class of meaning loss comes about because our interests, values, and ways of going about our lives change. You may soon find yourself abandoning your high school lingo with its special terms for teachers, fellow students, or subjects. If so, the reason may not only be that this lingo is specific to your high school and therefore unintelligible at this university. Instead, you may find that the ways in which you approach teachers, classes, and learning have changed so much that the old slang somehow “does not cut it anymore.”

Now consider this: If our uses of symbols inform our actions and our actions change us and the world in intended and unintended ways, we unwittingly but inevitably outgrow the meanings of our symbols in due course. Meaning loss is an ordinary fact of life.

After what I have just said about the power of symbols, meaning loss is associated with losses in our spatio-temporal orientation, our ability to plan and remember, our imagination, our ability to cooperate with others, our sense of who we are, and, finally, our ability to act. Hence,

meaning loss is a problem. This does not mean that all losses of meaning are bad. Quite the contrary, sometimes they are outright refreshing because they open up new possibilities for being. Luckily, symbols can be recharged with meaning. An important first step toward their regeneration is the explicit contestation of their old wrapping claims. Yet, contestation needs to be followed up with an alternative. This is so because people prefer living with depreciated meaning to living with no meaning at all. Therefore, we need to find ways to either make new symbolizations or to rewrap the old ones in such a way that they can orient us once more in the world.

Poetry was arguably the first human practice of making or remaking symbols in a self-conscious fashion, that is, in a way which is cognizant of the process of making itself. In fact, in ancient Greek the verb *poiein* means “to make or create.” Seen in this way, poetry can be understood as the art of making meaning, the art of charging worn symbols with new meanings, or the art of inventing new symbolizations which again give us an orientation in the world. Let us call the practitioners of this art “poets.” Would it not be marvelous if you could learn to be a poet?

T W O

Orientation week is over. Now you have a pretty good idea of the possibilities and requirements of the program of study awaiting you in the next four years. Among the reasons for which you have chosen to come to the University of Chicago, our dedication to general education embodied in the common core may have had low priority or may not have figured at all. You may even have doubts about the practical relevance of such a course of study. In fact, you may feel that general education is something of a waste of time and resources because you already have a pretty good idea in which direction you want to take your education. However, it is precisely the idea of exercising yourself in a set of quite diverse fields of study which lies at the heart of what we call a liberal education. I would like to give this formulation precision and direction by claiming that it is the key task of a liberal education to acquaint you in sufficient depth with a truly diverse set of modes of symbolic production.

Modes of Symbolic Production

From what I have said in the first part of this speech, you might already have a pretty good idea of what I mean by “mode of symbolic production.” No matter what kind of scholars we are—whether we study Verdi’s operas, whether we investigate state building processes, whether we research the genome of some living being—in the end, we do write. Ultimately, scholars at major research universities live for and of writing. We strive to produce deeply meaningful symbolizations of some aspect of the world. A simple cross-sampling of our writing will tell you quickly, however, that we write in startlingly different styles. Even more astonishing are the radically different paths we follow, the research we undertake for coming up with these writings. A mode of symbolic production is a typical path leading to a particular kind and style

of writing. These modes are practiced in workshops. Some of these workshops are organized in thoroughly artisanal fashion. They comprise a single scholar drawing on occasional support from research assistants, librarians, archivists, or local informants. Others are huge operations with a factory-size machine park, a professional management and support staff, and a number of collaborating principal investigators with scores of research assistants. Seen this way, large research universities are associations of symbol workshops that practice the most diverse modes of symbolic production you are likely to find anywhere in the world. Behind the stern propriety of our neo-Gothic façades lies hidden a most colorful and noisy bazaar of symbol makers who are chiseling, weaving, carving, punching, and assembling some of the finest symbolic wares the world has to offer.

In part, our diversity hails from the different questions we ask about the world. These questions do not simply originate in an individual person's curiosity, however. Instead, they transpire from traditions of inquiry which interlace ways of posing questions with ways of answering them. In terms of this talk, they interlace the identification of meaning deficiencies with ways of meaning making. These traditions are accessible through canonized publications and organized instruction. And this is precisely where the process of producing symbolizations typically begins: with already existing writings that are either so rich that their meanings can be extended into uncharted territory or that are not quite or no longer rich enough for the purpose at hand so that their meanings need to be complemented or renewed.

And thus, we begin to formulate more questions and tentative answers. Being a scholar requires addressing these questions systematically by producing encounters with the world. For some kinds of questions, that which is sought in encounters are yet more symbolizations, say, theories or art objects; for others, they are pieces of nature, for example, elementary particles or fossils; for yet others, they are living people or the traces they have left behind in the form of garbage, ruins, or government records. These encounters are typically organized in structured ways called methods. Again, the differences are impressive. Some of us grab a laptop, a tape recorder, and whatever else seems necessary to live for a year among some group of people. Others design, organize, and conduct surveys presented to thousands of interviewees. Some of us help to build and operate huge machines to first isolate and then collide elementary particles at high speed. Yet others watch movies, painstakingly following the position and movement of the camera and the composition of the image in every scene.

What we bring back from these encounters are intermediate symbolizations often called "raw data": field notes and audiotapes; filled-in questionnaires; experimental protocols and detector plates; and tables listing movie scenes, camera movements, light effects, and color compositions. Central pieces of the wrapping work are accomplished in these encounters by describing and/or measuring carefully selected samples of that aspect of the world that is of interest to us. What follows, then, are various stages of autonomous symbolic play. Raw data are subjected to transformations which code and categorize them for easy access and further

analysis. In consequence, we obtain coded transcripts, descriptive statistics, graphs, coded tables—all designating types of phenomena or variables. On these then, some further analysis may be performed to make visible connections between categories or variables. We thus get models formulated in words, equations, or diagrams. The final symbolization, the publication, minimally combines an interpretation of the model backed up with data from various stages of analysis that are presented as evidence. Thrown in are more or less detailed remarks about the research process, including a list of the literature consulted, methods and theories employed, and the data sources used.

In this highly stylized sketch of five stages as they might occur in four sample modes, I have left out many aspects which dull and spice the experience: the writing of grant proposals; the critical discussions with colleagues, students, and friends; the presentations in the classroom, as well as at conferences and invited lectures; the competition, and sometimes the feud, with rival scholars; and the extensive mullings under hot showers or during breezy walks on the beach. I have also failed to mention the emotional drama and anti-drama of it: the sublime peaks of insight and the valleys of despair; the boring grind of the day-to-day work as we plow through it.

The linearity I have insinuated only occurs in stretches of the symbol making process. Typically, each move is undertaken with the others in view. The question, for example, is more often than not posed with an imaginary answer in mind; data are collected to feed a particular analytical machinery, which, in turn, is chosen for the kinds of models it may support. The actual work also loops forward and backward between questions, encounters, categorizations, analysis, and model building. Unexpected developments, surprising raw data, or unanticipated results of analysis may necessitate iterations of the process. This forth and back shows how wrappings emerge in the interaction between autonomous symbolic play and encounters.

In sum: modes of symbolic production are techniques of wrapping the world into symbols. They are characterized by a complex movement between (1) questions posed within a tradition of inquiry, which informs what is selected as an interesting question, what can be used as a suitable method, what counts as an acceptable answer, and as a persuasive style of presentation; and (2) a process involving organized encounters with the world—particular forms of symbolic play using specific forms of categorization, analysis, and model building which pose “so-what?” questions in their own characteristic ways. They are lived in workshops which are structured by social arrangements characteristic for the mode. All modes of symbolic production aspire to be truly poetic. In that sense, good scholarship—good science—is poetry. It is a poetry you can learn at this university because—in comparison with other modes of symbolic production—the scholarly ones tend to be relatively reflective on the process itself.

Freedom

Why would a liberal education, the deeper acquaintance with a number of diverse modes of symbolic production, enhance our freedom? The first answer is that by moving between different modes, as well as by studying their history, we begin to understand that all symbolization is undertaken from a particular perspective. In the grand scheme of things, no symbolization is necessary—even if, for the moment, it may feel inevitable. Given other questions, other forms of encounters, and symbolic play, they might have come out differently. Symbolizations have no dignity other than their power to orient us in the world. Every one of them is better or worse for answering some questions, while remaining mute on others; they are better as a guides for doing certain kinds of things, while remaining irrelevant for others. Every mode of symbolic production is, by design, poetic in a certain domain only. That means, however, that the variety of modes we will need to symbolize the world adequately is bound to grow with the breadth of our interests and actual pursuits. Attuned to the power and limits of each mode, we arm ourselves against the temptation to reduce all modes to one. Even more importantly, however, the awareness of a choice of modes will liberate us to play not only within but also across modes whenever we get stuck with any particular way of wrapping the world. Accordingly, a liberal education may free us from the illusion that any one symbolization is necessary, while also making us more humble and more playful.

The second answer follows directly from the power of symbols to orient us in the world in connection with the limited meaning making capacity of individual modes. The more modes we know, the more we can open ourselves to the world. Every mode embodies a way of thinking, a way of perceiving, a way of imagining, a way of being and acting in the world. You may drive or ski differently once you know physics; you may appreciate the light streaming through the window of your room more acutely once you have studied Vermeer's paintings; you may look with more curiosity upon your own emotional outbursts once you know psychoanalysis. Thus a liberal education may awaken your desire for deeper and broader experiences.

The third answer is that the knowledge of diverse modes provides us with a repertoire of techniques of constructive criticism. The research traditions underlying each mode concentrate on a limited range of possible critical moves at the expense of others. It can, therefore, be illuminating to exploit the critical techniques cultivated in one mode to use them in others. Whole schools of scholarly work can be created by such critical crossovers. Thus were created, for example, psychoanalytical literary criticism and constructivist physics. More importantly, however, the movement between modes leads us to ask more fundamental questions about the unspoken assumptions underlying each mode. Only in contrast to other modes do they become clearly visible. Thus, a liberal education may train us in the arts of constructive critique—which is a bit like learning karate, jujitsu, and aikido all at once.

Critique is an indispensable component of democratic citizenship because politics is strewn with claims about the world which cry out for interrogation. In response to at least the more important claims, we would want to ask: well, how do you know? From the quality of the

questions asked and by the quality of the answers given to this question, we learn a great deal about how serious people are about their citizenship and how seriously a government takes them as citizens. Of course it is an illusion to assume that we could possibly check all political claim making ourselves. Instead, we should demand an interlocking system of independent institutions which is not only capable of critiquing the entire process leading to a particular symbolization but which must also be able to produce credible alternatives. Checks and balances of power are fine to rectify errors retrospectively; only checks and balances on symbolic production create even a chance to prevent the commitment of major errors in the first place.

In sum, freedom has four components: the relief from necessity, the curiosity about and desire for deeper and broader experiences, the ability to critique and judge alternatives, and, finally, the courage to commit on reasonable grounds. And I have not yet spoken of that last part. After we have come to know a wider range of modes of symbolic production in some depth, we should know all the better why we prefer the one over the other for a particular issue at hand. Our choice is not made for lack of alternatives or out of sheer ignorance but for good reasons. Liberal education, thus, may enable us to make reasoned commitments to a mode of symbolic production for a given purpose.

Creativity

I said earlier that our symbolizations lose their meaning as a matter of course, and that we then need to either rewrap them or make new ones or both. Such rejuvenation of our symbolic work requires a lot of ingenuity and creativity. If this is the case, then how could we enable ourselves to be creative symbolizers? The precondition for creativity is the kind of freedom I have just described. The relief from necessity reminds us that we can do something; the desire for deeper or broader experiences furnishes us with a motive to act; the ability to critique and judge provide us with a road map for how to set to work; and our willingness to commit enables us to stick with it. The exposure to a variety of modes of symbolic production, finally, supplies us with a repertoire of ways to make meaning. Variety is important because, as creativity research has consistently shown, novel insight frequently occurs by transferring the wrapping techniques and forms of symbolic play from one domain to another. We call such transfers metaphors. Let us look at a concrete example of a creative leap enabled by metaphor.

This year, we are celebrating the centenary of Albert Einstein's *annus mirabilis*. Between February and September 1905, Einstein wrote a pentad of papers out of which three had a revolutionary impact on the development of physics. Most famously, in the fourth paper finished in June, the twenty-six-year-old Einstein proposed the special theory of relativity. In it, he takes three decisive turns. First, he posits that, contrary to the then still regnant Newtonian assumptions, the universe does not have an absolute spatial or temporal orientation. Instead, measurements of lengths and of time are necessarily relative to an observer within an inertial

system. The second turn is closely connected. If space and time are relative to a framework of observation, they have no meaning outside of a clear measurement concept. Finally, in the third and perhaps most surprising turn, Einstein posits that light moves with the same constant speed no matter how the observer moves relative to the source of light. The postulate of a constant speed of light in conjunction with the quantum characteristics of light which Einstein had described in the March paper made sense of a number of seemingly odd experimental results on the basis of a unified theory. Other physicists, therefore, had a harder time defending the existence of an “ether,” that peculiar substance that was postulated by nineteenth-century physicists as permeating the entire universe in order to account for the wave characteristics of light. Put in the lingo of the modes of symbolic production, Einstein has suggested nothing less than a rewrapping of three central and old symbols: “time,” “space,” and “light.” He was successful because he did not merely critique the old wrappings. He offered an alternative!

In the first part of this speech, I have spoken about the generativity of symbols. By that I meant to emphasize that symbols do not simply capture what we had already known before. Instead, I said, their relation to what they wrap is typically open to further exploration and negotiation. Through a very simple example from the domestic division of labor, I tried to alert you to the fact that symbolizations produce surprises in this way. Einstein’s theory of special relativity is a good example. Einstein himself used it as a stepping-stone for his general theory of relativity published a good decade later. Even more interestingly, other physicists drew conclusions about what precisely he had wrapped which Einstein was not ready to follow to the end of his life.

How could Einstein come up with the theory of relativity? First, it is important to understand that throughout his life Einstein worked from a fundamental belief about the nature of nature which he did not derive from physics. Instead, it had deep roots in his ongoing studies in the philosophy of nature and in his spirituality. He was convinced that nature is governed by simple, all-pervasive, economical, and aesthetically appealing principles. For Einstein, nature was materialized reason, an imminent God. In all likelihood, he gleaned this understanding of matter from his readings of enlightenment philosophy, Spinoza above all. These readings date back well into his high school years, and they were continued throughout his studies in Zürich and among a circle of friends during his years as a patent officer in Bern. On the basis of his beliefs about nature, he felt that asymmetries in the explanation of natural phenomena were intolerable. One such asymmetry marred for Einstein the theory of electrodynamics, which was widely considered the crowning achievement of nineteenth-century physics. Maxwell, its finishing architect, offered two discrepant accounts of how a magnet rotating in a coil—or a coil rotating around a magnet—produces an electric current. Such asymmetries, along with seemingly inexplicable experimental results, offended Einstein’s spiritual-aesthetic sensibilities, thus motivating his work. Philosophy also influenced the way he found his solutions; he was convinced that such problems could only be resolved on the basis of principles of a higher generality. And this is what he set out to do—more *geometrico*.

As far as the relativity of time and space is concerned, Einstein was greatly influenced by more than the philosophical writings of Hume, Mach, and Poincaré. Clock synchronization, the centerpiece of Einstein's concept of time, was a prevalent engineering concern in the late nineteenth and early twentieth centuries. Einstein himself had evaluated several patents offering solutions to this problem. His emphasis on measurement procedure was also inspired as much by philosophy as by his nitty-gritty work as a patent officer with its emphasis on the demonstrability of claimed effects. Finally, it bears mentioning that during his high school years in Munich, Einstein was an avid reader of popular science books which made much use of imaginary rides, for example, on light waves. This form of imagination was constantly employed by Einstein as a thinking tool.

Einstein's theory emerged, then, in the interstices between various modes of symbolic production. His fundamental motivating assumptions are metaphysical in style. His mode of reasoning is hypothetical-deductive, in the manner of philosophy or mathematics, which is, in addition, shot through with entirely (science-) fictional examples that are often somewhat shamefacedly called "thought experiments." Yet he employs this reasoning to make sense of inductively, that is, experimentally generated puzzles which have offended his spiritual-aesthetic assumptions. Finally, he mingles engineering sensibilities about measurement and demonstrability with those of positivist philosophy to inform his formulations of concepts. Einstein's genius is one of carrying over modes of symbolic production from one domain to another, and connecting them to a problem which he studied with great perseverance. His ingenuity is based on finding and focusing several metaphors on one problem.

Einstein worked and thought for years about a related set of problems. And he did so in close collaboration with others—with a few good friends, and, especially, with his wife. According to his own account, the very breakthrough emerged after a full day of discussions with an old friend. Two aspects of this story strike me as important. Symbolization needs to be done and redone with others who affirm us, challenge us, and offer us a space in which we can play with our symbolizations with almost no risks to our material well-being or social status. Yet, the creative leap occurs in seclusion from others, in the silent dialogue of a self within itself. Then, Einstein was a liminal person—someone who was socially located at the boundary between different worlds. Outside of a traditional university context, he could take his work where he, not his professors, wanted to go. He lived in Switzerland as a German; a Swabian, he grew up among Bavarians; among Swabians, he was a Jew; and among Jews, he was secular. Einstein was an expert in living in the spaces between worlds; in fact, he clearly came to relish it as a liberating opportunity.

Let me draw a final lesson from this example. Diverse modes of symbolic production are not just characteristic of various academic fields, but they are constitutive of religions and cultures. Luckily, a top international research university such as this one attracts students from all over

the world, not only from most walks of society in the United States. As a bazaar of symbol workshops, such a university is surrounded by residential quarters that are rich in diverse symbol-making traditions. They are yours to explore with as much interest and intensity as the academic modes of symbolic production. Learning about them is just as revealing. Clearly you could get by in these quarters using the generally accepted lingua franca of the place: English. But you would get only so far in understanding other cultures without learning their prime vehicle of symbolization: their language. Learning a language which does not share the fundamental structural characteristics of your own is an especially eye-opening experience for anybody interested in how differently we can wrap the world. For that reason alone, a liberal education in the sense discussed here is quite incomplete without acquiring fluency in at least one foreign language.

I have not found any investigation which directly demonstrates that liberal education does make people more creative. And yet, there is significant evidence that Einstein's story, his metaphoric focusing enabled by his liminal position, is rather typical for creative insight. Beyond the biographic study of creative individuals, there is strong evidence from investigations lodged at a higher level of social organization. First, there is positive evidence. Creativity often comes in bursts across many fields at the same time, concentrated in dense, cosmopolitan cities. Classical Athens in the late fifth and early fourth centuries, and Pataliputra (today's Patna) in the third century B.C.E. were such places; so were Fes in the fourteenth and Florence in the fifteenth centuries. Vienna and Tokyo saw such a burst at the turn from the nineteenth to the twentieth century. Today, New York is, perhaps more than any other city—sorry, Chicago!—such an incubator of creativity. However, cities, even very diverse ones, are not necessarily creative hubs at all times. For cities to become fermenters of creativity, they need to become places of engagement between people with different ideas working with different modes of symbolic production. For that they need to offer people with diverse backgrounds several things. They need real career opportunities which allow them to become symbolically productive. And then they need an infrastructure of meeting places ranging from cafés to political, artistic, and scientific institutions, which facilitate a free, open-minded exchange between various modes of symbolic production thus sparking metaphors.

Second, there is negative evidence. And this is where my own research into the reasons why and how socialism collapsed becomes important. In the political and economic realm, socialism took great pains to homogenize its population. The idea was that the science of dialectical materialism had discovered the true laws of history and of human society. If only everybody could be taught Marxism-Leninism and be persuaded to act accordingly, then socialism would come true as a self-fulfilling prophecy. Humankind would thus catapult itself into communism, the only conceivable just human order. At the same time, socialism thought itself embroiled in mortal combat with capitalism. All forces had to be mobilized in unity to fight the enemy. Although the praise of critique was universally sung, this had the effect of causing the actual practice of critique to be generally read as a diversion from the main task—the defeat of the

enemy. Accordingly, critique was seen as a mere nuisance, a carping about, which was effectively in the interest of the enemy. Unity and unwavering support for party and state became the ethical ideal. In the interest of efficiency at war, pluralism was seen at best as an unnecessary luxury and at worst as an ideological floodgate for the forces of evil. In this call to unity in battle, armed with the supposed truth, socialism literally suffocated. It had no way left to determine whether or not its own symbolizations of itself still had any bearing on lived life, whether its symbolizations were still offering useful orientation. During the 1980s in particular, the self-praise of party and government began to deviate from experience. The economic plans were always advertised as over-fulfilled while people experienced increased shortages. An eerie gap opened between what was said about the country and what people experienced—a gap that was increasingly appreciated even by the party elites who saw the erosion of meaning with increasing alarm. Yet, they had no way to develop alternative symbolizations which would immediately have been read as subversive. Ossified institutionally, they had no way to regenerate meaning. Once the crisis accelerated in 1989, the governing elites literally had nothing to say and, therefore, no clue what to do. And thus, symbolically exhausted, they forfeited power without firing a single shot!

The biographies of innovative people, the creativity generating possibilities of cosmopolitan centers, and the political self-suffocation of socialism offer important lessons for all social arrangements. A pluralism of modes of symbolization, practiced in a multitude of symbol workshops enabled and freed to engage in creative borrowing from each other, is the very precondition for the regeneration of meaning under conditions of rapid social change in which meanings are lost just as fast. In an important sense, every mode of symbolization can be looked at as a culture. If this is so, then multiculturalism is not only not dead—or dangerous, as more and more politicians and intellectuals in Europe and America have recently claimed—but it is necessary for the continuous rejuvenation of meaning. Multiculturalism is an asset, not a liability. Perhaps I should say that it must be made into an asset, for multiculturalism needs to be practiced and not just preached to yield the fruits of freedom and creativity. We urgently need people who, like Einstein, can thrive in a multicultural environment, who relish rather than abhor it, who see it as a liberating opportunity rather than an anxiety-provoking nightmare. We need people who are free in the sense I have defined it just a few minutes ago. Liberal education is one of our best bets at nourishing such sensibilities by creating plenty of opportunities for becoming comfortable with leading a liminal life.

Throughout my speech, I have said that liberal education may make people more free and creative. For it does not do so automatically. You can live in the middle of a cosmopolitan city and remain entirely untouched by the diversity of modes of symbolization practiced there. You can go through a curriculum of liberal education without reaping any of its potential benefits. You can learn many modes of thought without ever making any metaphoric linkages between them. For this to happen, you need only to think that all those things around you are either neatly compartmentalized or in an important sense external to you and should remain so.

Tourists, diplomats, and representatives of corporations often do that when they go to other countries—merely enjoying the titillation of the exotic while never letting anything come really close. The philosopher John Dewey once called such people “cosmopolitan idiots.” They look educated, but they are mere kaleidoscopes of knowledges which they employ for their parochial agendas.

The point is not only to avoid becoming a cosmopolitan idiot but also to become a free symbol maker who is ready and eager to participate in the creative rejuvenation of meaning. For this to happen, you can not just surf on diverse modes of symbolic production—scientific, artistic, religious, or cultural. Instead, you must delve into them and engage with them to such a degree and at such a proximity, that they, in fact, stand a chance to alter the way in which you think, feel, act, dream, and imagine. To reap the benefits of diversity, you must risk yourself—ready to become transformed in the course of the engagement. This does not mean that you have to make your own all of the modes of symbolic production which you encounter on the way. You will undoubtedly find some of them misguided or even wrong. But you should know why. The point is that by fathoming the operations of diverse modes and by wrestling with their limits and possibilities, you stand a very good chance of becoming a freer and more creative person.

You stand at the gates of a splendid university—a wondrous metropolis of symbol makers ready for you to explore. Fearlessly walking its many streets, watching and listening intently, and asking questions with curious abandon may eventually make you want to participate. It may kindle in you a passion for making deeply meaningful symbolizations, those which orient us in the world by enhancing our power to think, our power to experience deeply and reflexively, our power to imagine, and, thus, ultimately our power to live better lives. You could become a poet. And where, if not here; and when, if not now? Welcome to the University of Chicago.