

CULTURAL SOFTWARE

A THEORY OF IDEOLOGY

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1 TOOLS OF UNDERSTANDING

In the *Pirke Avot*, or “Ethics of the Fathers,” a popular tractate of the Talmud, one finds a list of objects that God brought into being as the sun set on the sixth and final day of creation.¹ These include the *modus operandi* for many of the miracles that the Lord would later display before humankind—for example, the well of the Earth that swallowed Korah and his followers, and the mouth of the ass that spoke to Baalam in the desert. It was as if, as sunset approached, and God knew that He was finished with the task of creation, He endeavored to bring into existence everything that might be needed later on. At the end of this list of necessary items is a curious addition: the first set of tongs, for, as the Talmud tells us, tongs can only be made with other tongs.

The idea of a tool that can be made only from another tool, and that is itself a toolmaking tool, lies at the heart of this book. My immediate concern is the phenomenon that theorists have called ideology, but my larger subject is human cultural understanding. I believe that the study of ideology must be dissolved into this larger concern. We must break down what previous thinkers have called ideology into distinct and analyzable mechanisms. We must replace the study of ideology with the study of diverse ideological effects produced by human thought, effects that together produce the phenomenon called ideology. At the same time, we must expand the concept of ideology by absorbing it into the more general study of cultural understanding. So we must proceed in a dual movement: dividing ideology into its variegated mechanisms, and viewing these mechanisms as special cases of the ordinary processes and operations of human thought.

The metaphor of the toolmaking tool unites these two gestures. The study of ideology is the study of tools of human understanding produced in, by, and

through human culture. It is the study of the cumulative creation of these tools through the use of previously existing tools of understanding, and the study of the consequences of this recursive manufacture. To understand ideology we must understand the tools of human understanding—with respect to both their advantages and their deficiencies, their intended and their unintended consequences, their ability to empower us and their ability to exercise power over us.

Ideology is a much-contested term these days.² Some social theorists think that it has outlived its usefulness, particularly given its historical connections to the Marxist tradition and Marxism's many internal disputes. They prefer instead to talk about *discourse*, *episteme*, *habitus*, *tradition*, *language game*, *interpretive community*, and a host of other terms for characterizing the social nature of human thought. Each of these terms has a slightly different meaning. Each justifies its particular stance by a different theory. Yet each points at the same basic set of issues—the socially generated and socially sustained ways in which human beings understand and constitute their world. And regardless of the particular terminology used, each of these approaches produces different versions of a theory of ideology. When I speak of “the theory of ideology” in this book, I refer to their collective concerns. As I shall stress repeatedly, the distinctive problems faced by a theory of ideology do not vanish when we change our focus to concepts like *discourse*.

Ideology and the Philosophy of Culture

The theory of ideology, like the study of discourse associated with postmodernism, has always been part of a larger endeavor—the philosophy of culture. The ancient Greeks distinguished between *physis*, the world of nature, and *nomos*, the world of convention, law, and culture. The philosophical study of *nomos* includes ethics and political theory. But it also includes culture itself as a philosophical problem and an object of study.

The philosophy of culture has a rich tradition and many illustrious forebears, of whom Vico, Rousseau, Kant, and Hegel are perhaps the most prominent. Some of the questions the philosophy of culture asks are these: What is the relationship of culture to human existence and human history? What role does culture play in producing the faculty of human reason? Is human history, and hence the history of culture, a tragedy or a comedy, or is it a story with no determinate end and no narrative coherence or unity? Later philosophers, like Marx and Nietzsche, emphasized a further question: the question of power. What power do culture and cultural forms have over individuals? How can individuals recognize this power, and what, if anything, can or should they do about it? The study of discourse, like the study of ideology, is merely the latest

in a series of approaches to the philosophy of culture. The basic questions it asks are very much the same, and the problems it encounters are very similar.

Although people use the term *ideology* in many different ways, they are usually invoking one of two basic conceptions. The first sees ideology as a worldview, an intellectual framework, a way of talking, or a set of beliefs that helps constitute the way people experience the world. In this conception, ideology is a relatively neutral term. The second conception of ideology is distinctly pejorative. Ideology is a kind of mystification that serves class interests, promotes a false view of social relations, or produces injustice. Alternatively, ideology is a way of thinking and talking that helps constitute and sustain illegitimate and unacknowledged relationships of power. It is a form of discourse in which oppressive power finds its home.³

This book offers a third position. Both the neutral and the pejorative conceptions of ideology describe different aspects of a deeper phenomenon. They describe effects produced by the tools of human cultural understanding. I call these tools of understanding cultural software. Hence my theory of ideology is a theory of cultural software and its effects.

Oppressive discourses, worldviews, belief structures, and mystifications all arise from the diverse tools of human understanding. The components of cultural understanding include beliefs and judgments. But they also include cognitive mechanisms that help produce and fashion beliefs and judgments. These cognitive mechanisms include, among other things, heuristics for decision, narrative structures and social scripts, conceptual homologies (*A is to B as C is to D*), metaphor and metonymy, and methods of ego defense. Each of these cognitive mechanisms can be beneficial and useful in certain contexts, but in others each can mislead and help produce or sustain unjust conditions. The tools of human thought are both helpful and hurtful, depending upon when and how they are used. Recognition of the simultaneous advantages and disadvantages of our tools of understanding—the inevitable connections between heuristics and their limitations, between blindness and insight—is central to the argument of this book. I call this the *ambivalent* conception of ideology.

This approach replaces both the neutral and pejorative conceptions of ideology. As in the neutral conception, we still study how worldviews and systems of discourse are produced. But we do this by investigating the diverse mechanisms of cultural understanding, and we do not take a neutral or detached view toward their effects. Our tools of understanding simultaneously enable and limit our understanding, empower us and have power over us. When our cultural software helps create or sustain unjust conditions, I say that it has *ideological effects*. But our tools of understanding do not always produce these effects. Hence ideology, in the pejorative sense, is not a phenomenon separate from the general mechanisms of cultural understanding; it is an effect produced

by these mechanisms when they are placed in particular contexts and situations. I retain the familiar adjective *ideological* to describe these contextually produced effects.

The metaphor of “cultural software” proposes that we can compare certain features of culture, and of the way that culture operates, to the software that is installed on a computer and that allows a computer to process information. Simply put, cultural software enables and limits understanding as software enables and limits a computer. Although this can be a helpful metaphor, it can also be misunderstood. With this in mind, I want to discourage two likely misinterpretations.

First, I do not believe that the human mind works like any existing computer. Nor do I believe that thinking is primarily a mechanical or algorithmic process. On the contrary, I shall insist throughout my argument that human thinking is distinguished by its symbolic and metaphoric character and by its fundamental motivation in human values.

The growth of cognitive science and the search for forms of artificial intelligence have led naturally to comparisons between human beings and computers. One of the most important debates currently raging in the philosophy of mind is the extent to which mind should be defined functionally in terms of information states, like those in a computer. Some philosophers of mind have gone so far as to argue that the human mind is essentially indistinguishable from a computer, while others have asserted that the intentional nature of human intelligence makes such comparisons thoroughly inappropriate.⁴

Although these debates are interesting, they are to a large extent peripheral to the concerns of this book. Unlike most cognitive scientists and most philosophers of mind, I focus on the mind’s relationship to culture and not its ultimate structure.⁵ Howard Gardner has noted that although most cognitive scientists “do not necessarily bear any animus against the affective realm, against the context that surrounds any action or thought, or against any historical or cultural analyses, they attempt to factor out these elements to the maximum extent possible.”⁶ It is quite possible that the computational metaphor of mind has encouraged this trend. For these reasons, Jerome Bruner, himself one of the founders of the cognitive revolution, has recently called for a renewed emphasis on “the concept of meaning and the processes by which meanings are created and negotiated in a community.”⁷ These concerns lie at the heart of this book; they motivate my use of the idea of cultural software. I use this metaphor to illuminate the ways in which human beings are constituted by and express their shared values within a culture.

Second, the idea of cultural software suggests an opposition to “biological hardware.” But we cannot distinguish between “hardware” and “software” in humans in the way we can for computers. Each individual has a unique brain

structure that is not merely the product of genetic inheritance but is shaped and organized in part by her experiences and activities, especially those in early childhood. As we are programmed through social learning, our physical brain structure is also changing. And the consequences of human beliefs and cultural activities affect human populations and human bodies in countless ways. Thus, it is highly misleading to think of individuals as consisting of identical hardware into which identical copies of software are installed.⁸

The idea of cultural software is not designed to suggest or defend a neat division between the cultural and the natural. Rather, it directs our attention to the know-how that is part of every human being *and* that is shared by and transmitted between human beings through communication and social learning. This know-how is our cultural software. The ability to communicate and engage in social learning and thus pass on cultural know-how is an essential aspect of our nature as human beings. The most remarkable result of human evolution is that it is in our nature to be cultural. We are by nature cultural creatures.

To imagine ourselves as cultural creatures is not to imagine ourselves as infinitely malleable; this assumption misunderstands the ways in which culture grows out of nature. The instincts and motivations that we have inherited from our genes are not abandoned or displaced by social learning. They are refined and articulated, distorted and exaggerated, extended and supplemented by experience and social learning. What is made is always made from materials already given, and its character and its limitations are shaped by those materials. In such a way the present is always made from the past. We can fashion a purse from a sow's ear, but it will be the kind of purse that can be so fashioned.

Yet at the same time, culture has a cumulative power. The present can only be made from the past, but the future can be made from the present. And so as culture is transmitted and transformed, it opens up ever new horizons of human possibility. In Chapters 2, 3, and 4, I shall argue that just as our biology has evolved through transmission of genes, our cultural software is also evolving through cultural transmission—although in importantly different ways and at much faster rates. These genetic and cultural processes necessarily interact with each other; this interaction is only one of the many ways in which the cultural forms part of and is continuous with the natural world.⁹

Each human being is born with the ability to absorb and communicate previously developed culture—to possess cultural software and transmit it to others. Because we can make culture part of us, we can be the living embodiments of previous cultural development, just as we can be the embodiments of previous genetic evolution. And because we can do this, we are also historical beings. We can absorb, reflect, and transmit the cultural know-how available at our particular moment in history. We can be the carriers of a certain kind

of cultural software, the kind present at our particular moment in history, and we can be the vehicle for its transformation into the cultural software that will be absorbed by future generations. We can, and indeed we must, stand in complicated lines of inheritance and innovation. To be the bearer of a particular kind of cultural software, a configuration existing at this time and at no other, is what it means to be a historical being, to exist historically.

History in this sense is a peculiarly human phenomenon; the Grand Canyon changes over time, but only human beings have history. Or more accurately, the Grand Canyon has a natural history, but only human beings have a cultural history, which is history proper. Human beings begin to have history only at the moment when they enter into culture, which is also the moment that they begin to create collectively shared and created tools for understanding the world and articulating their values.¹⁰

Culture and cultural software are just such tools. They are tools used to make other tools. This has always seemed to me the deeper meaning of the Talmudic story; for when God created human beings on the sixth day of creation, one of His final acts was to bequeath to them a toolmaking tool, which is human culture.

For simplicity's sake, we might distinguish three kinds of cultural tools that human beings use, keeping in mind that they are difficult to separate in practice. (Moreover, this list is not intended to be exhaustive.) The first is technology, the second is institutions, and the third is cultural know-how, or what I call cultural software. It consists of the abilities, associations, heuristics, metaphors, narratives, and capacities that we employ in understanding and evaluating the social world. An example of technology is a computer. An example of an institution is a bank. Examples of cultural software are knowing how to operate a computer, being able to dance the waltz, or being fluent in a particular language.¹¹ Technology makes tools from materials, institutions make tools from human sociability, and cultural software makes tools from human understanding.

Although I have distinguished them analytically, in practice these three types of cultural tools are necessarily interdependent and interrelated. The institution of a bank, for example, may presuppose technology in the form of buildings, computers, furniture, and a workforce trained in a certain way, with certain understandings and abilities. The operation of technology requires know-how, and, conversely, certain skills and knowledges often presuppose certain technologies (as well as institutions already in place). Nevertheless, different philosophers of culture have emphasized some types of cultural tools more than others. For example, Marx emphasized the role of technology, and Vico emphasized the role of institutions. But the third type of tool—cultural software—is equally important. Without cultural software, our technology lies on the ground, rusted from dis-

use, and our institutions fall apart. The biblical story of the Tower of Babel is a good example of what becomes of technology and institutions without cultural software. Indeed, without cultural software, social institutions not only cannot be maintained; they cannot even get started.

Why Software? The Problem of Shared Understandings

The motivation behind the concept of cultural software is not the familiar desire to model the operations of the human brain on those of the digital computer. Rather, the point of this metaphor is to address and resolve a recurring problem in theories of cultural understanding: to explain how shared cultural understandings can be shared while still accounting for the considerable differentiation and disagreement in belief among members of the same culture or interpretive community.

To show how this problem arises, I shall use as an example Hans-Georg Gadamer's theory of cultural understanding. Gadamer argues that human cultural understanding is made possible by our location in a historically generated tradition. His theory is especially attractive because it draws an important connection between historical existence and cultural understanding. Gadamer emphasizes that human existence is existence in history; to be human means to exist in a historical tradition and hence to understand within and by means of this tradition.

Because we exist in a tradition, Gadamer claims, we bring certain prejudices or prejudgments to all of our understanding. But these prejudgments, far from being hindrances to our understanding, are in fact the preconditions of our understanding.¹² They enable us to understand not only others within our own culture but people in other cultures as well. Thus, Gadamer asserts, "Understanding always implies a pre-understanding which is in turn pre-figured by the determinate tradition in which the interpreter lives and which shapes his prejudices."¹³

Gadamer does not view his theory of tradition as a theory of ideology; nevertheless, it provides an excellent starting point for my claim that ideology is a special case of ordinary cultural understanding. We might think of the ideology of Americans, for example, as a cultural tradition that shapes, directs, and facilitates their understanding. The prejudices and prejudgments associated with this tradition color Americans' views of the world and produce a distinctive take on various political questions. Indeed, we might be tempted to substitute the word *tradition* directly for the word *ideology*. We need only modify Gadamer's comparatively rosy view of the effects of prejudgments and prejudices on the understanding by emphasizing that these prejudices and prejudgments can as easily mislead as facilitate social understanding.

The close connections between ideology and the Gadamerian concept of tradition suggest the irony of the well-known critical exchange between Gadamer and Jürgen Habermas.¹⁴ Habermas worries that Gadamer's theory of understanding does not sufficiently take into account the distorting effects traditionally associated with ideology, when in fact Gadamer's concept of tradition can easily be adapted to provide an account of how ideological thinking occurs. Conversely, Gadamer insists that if successful understanding ever occurs, it must occur through a historically generated tradition with its prejudgments and prejudices; yet through this argument, Gadamer simultaneously demonstrates the inevitability of ideological limitations on thought. In short, although Gadamer's account of cultural understanding was designed to show how understanding can succeed, it also provides an account of how cultural understanding can go wrong.

In spite of its considerable utility for a theory of ideology, Gadamer's theory of cultural understanding creates a series of puzzles. First, it is not clear what kind of entity a tradition is and how it is possible to live in it. Where does the tradition exist so that we are able to live in it? If we live together in a tradition, it is surely not in the same way that two people live together in a house. Moreover, Gadamer wants simultaneously to insist that the tradition we live in also inheres in us, so that we are both inside it and it is inside us. In the alternative, one might say that we share in a tradition; but do we share it like a piece of clothing (which only one person can wear at a time), like a pie (from which we take separate slices), like a parent (having a common causal origin), or like an experience (having been subjected to roughly the same causal forces)? Finally, even though we are inside the tradition and it is simultaneously inside us, the tradition continues to exist after we (or any other individual) leave the community or die. Yet people are somehow also able to bring their traditions with them to new places after they leave their communities. To make sense of these puzzles we must know what kind of object a tradition is, where it may be found, and where, if anywhere, it continues to exist after individuals no longer form a part of it. Stephen Turner has called these various kinds of difficulties the problem of location.¹⁵ Note, however, that the word *location* is appropriate only because the metaphors generally used to describe tradition are spatial in nature: we say that we live in a tradition, the tradition inheres in us, certain behaviors or persons are outside of the tradition, and so on. In fact, the problem of location is really a problem of *ontology*: it is the question of what kind of object or entity a tradition is, given that we use these spatial metaphors to describe it.

Second, Gadamer says that the tradition is responsible for people having the kinds of prejudices and prejudgments they have. By implanting these prejudices and prejudgments, the tradition facilitates and empowers our understanding.¹⁶ But Gadamer does not tell us exactly how the tradition does this.

Gadamer believes that tradition is disseminated through communication and language.¹⁷ But that is only half an answer. What exactly is the thing that is disseminated, and how does it have causal effects on human intelligence? Turner calls this the problem of transmission.¹⁸ Once again, however, this expression reflects the standard metaphors employed: We hand over traditions, we implant them in others, we transmit them. In more general terms, it is the problem of *causation*—we need to know what kind of causal nexus exists between the tradition and individual human intelligence and/or behavior. Moreover, the question of causation is also the question of power, for it is the question of how traditions can have power over individual minds. Indeed, a recurring problem in theories of ideology has been some version of this question—the question of how ideas can have power over people.

Third, if tradition inheres within each individual in a culture and shapes each individual's apparatus of understanding, why do individuals ever differ in their understandings of the same tradition? Why, for example, do American constitutional lawyers disagree about the meaning of the Constitution if all of them are part of the same constitutional tradition? As Gadamer himself recognizes, one of the most interesting features of a cultural tradition is that its content and scope are always being tested and contested by the individuals who live within it.¹⁹ Yet how is this possible if all share in the tradition equally, or if the tradition inheres in each individual in the same way? This is the problem of *differentiation*. It is the flip side of the problem of transmission or causation, and, not surprisingly, it is sometimes neglected in theories that are trying to show how shared cultural understandings are shared. Ironically, one of the hidden dangers that any explanation of shared cultural understandings faces is that it will prove too much—that it will explain more uniformity of thought, belief, and action than actually exists in a given culture. Such accounts suppress the heterogeneity and dissensus that exist among the cultural understandings of any group of individuals. To be successful, then, a theory of shared cultural understanding must show not only why understandings are shared, but also why they are not shared—why no two people view the cultural world in exactly the same way, and why in any culture there are always mistakes, misunderstandings, and disagreements. The standard response that differentiation occurs because the tradition has unclear boundaries does not solve the problem but simply returns us to the spatial metaphor (a tradition has boundaries like a country). Thus, it raises anew the questions of location and transmission, or ontology and causation—what kind of thing could a tradition be for it to have unclear boundaries, where is this thing located, and how is it transmitted into each individual mind?

The problems of causation and differentiation, in turn, are related to a final problem, the problem of change or *transformation*. The tradition we live under

today is not the same in all respects as the tradition that existed two hundred years ago. The prejudices and prejudgments of one generation are often different from those of their children or grandchildren. Yet in spite of these changes, the tradition continues to be shared, although the content of what is shared has become different. How does this change occur, what produces it, and how is widespread agreement among members of the community preserved during this process? Solutions to these problems often raise the problems of ontology, causation, and differentiation in new guises: For example, if change occurs because of defects in transmission of the tradition to individuals, the transmission must be defective for all members in the same way if agreement is to be preserved on the terms of the newly changed tradition. If change occurs through individual differentiation, we need to know how agreement between individuals was ever maintained in the first place and how it is now obtained on new grounds. So the problem of transformation brings us back to the same old puzzles—what kind of thing is a tradition that it can change or be changed in this way, what kind of causal efficacy does it have over individuals, how is it implanted in them, and how is it implanted in the same way?

Although I have used Gadamer's theory of tradition to discuss these problems, they arise for many different types of entities and many different kinds of social theories that purport to explain the existence and effects of shared social understandings. If we were to substitute for Gadamer's "tradition" the idea of a "collective consciousness," an "Objective Spirit," a "habitus," a "practice," an "episteme," an "interpretive community," or a "form of life," the same questions of ontology, causation, differentiation, and transformation would arise again, albeit in slightly different ways. Gadamer's theory of tradition is one in a long line of approaches designed to show how shared understandings are shared. For convenience, we may group these approaches into three basic types, which I call the supraindividual, the behavioral, and the Kantian approaches.

The first type of solution, of which Gadamer's appears to be an example, postulates a supraindividual entity that somehow does the work of regulating or ordering the minds of individuals. Examples would include Hegel's notion of an Objective Spirit or Durkheim's notion of a collective consciousness. In these theories, a single entity existing over and above individual minds guarantees the shared nature of cultural understandings. This entity may be a supraindividual consciousness or, in the case of Gadamer's tradition, an entity whose nature is largely unelaborated. Not surprisingly, such theories create puzzles about what the supraindividual entity is, where it resides, how it is shared by individuals, what force it has over individual minds, and how disagreement and disputes are possible.

A second solution turns instead to behavior. It asserts that shared practices

of understanding are explained by the existence of shared conventions of social behavior. The usefulness of this solution depends on what sorts of things these conventions are. If conventions are viewed as entities that exist over and above individual minds, for example, they threaten to become just another version of an Objective Spirit, a collective consciousness, or a tradition, and they face similar difficulties.

We might try to avoid these problems by asserting that conventions are agreements to behave in similar ways. Nevertheless, they cannot be conscious agreements, for most people never consciously decide to adopt them. Alternatively, we might insist that by conventions we mean nothing more than regularities of behavior. Unfortunately, this solution leads to a problem of circularity. It is precisely these regularities of behavior that a theory of shared cultural understanding hopes to explain. The claim that shared understandings are shared by virtue of social conventions explains nothing. Nor does this solution explain how disagreement and differentiation are produced within conventions, for by definition such disagreements can occur only outside of them, or at those places or in those situations where social conventions run out.

Finally, an explanation of shared conventions in terms of similarities of behavior shifts our attention away from cognitive processes of meaning and understanding that must form part of each individual's conceptual apparatus. When we say that participants agree, we have not yet explained how they agree. Of course, it is an advantage of behavioral accounts that they avoid questions about what the internal mechanisms of cultural understanding are. Yet this advantage is also a disadvantage, for cognitive processes of meaning and understanding surely must be involved in the creation and maintenance of shared conventions. So the problem with this kind of account is that the solution it offers is just too easy—it simply declares victory and goes home without addressing the most difficult questions of how cultural understanding is regulated, transmitted, and maintained.

Some philosophers have tried to explain conventions in terms of similar or interlocking expectations. But these accounts cannot be purely behavioral; to explain shared understandings they must smuggle in the very sorts of concepts that raise the problems I have noted above. David Lewis, for example, defines conventions as regularities of behavior; yet his account depends on prior concepts like “common knowledge” of a state of affairs, mutual expectations, and individuals conforming to a regularity. “Common knowledge,” in turn, depends on certain states of affairs indicating the same thing to everyone in a population.²⁰ The hermeneutical problems that I am concerned with enter at precisely these points in his account. Moreover, Lewis's account assumes that conventions solve problems of coordination based on people's preferences. But not all of the various types of shared meanings and beliefs that occur in a

culture can be explained as solving problems of coordination.²¹ In short, conventions do not explain shared understandings; they presuppose them.

A third type of solution to the problem of shared understandings is Kantian in spirit. According to this account, individuals within a culture understand the world in the same way not because of the existence of a supraindividual entity that regulates agreement but because each possesses an identical conceptual apparatus. Each individual's mind is similarly constructed and employs identical principles of conceptual construction, organization, and association. This common perceptual and cognitive apparatus produces and guarantees shared understandings.

I call this approach Kantian because it postulates something akin to Kant's notion of a transcendental subject. Although this transcendental subject is spoken of in the singular, it should not be confused with a supraindividual entity. It refers to the common features found in the subjectivity of all rational beings by virtue of their being rational.²² Its grammar is similar to that in the expression "the human eye," which refers to general features found in all normal examples of this organ. Similarly, talk about "the" transcendental subject refers to identical copies of a basic conceptual apparatus.

Kant used the concept of the transcendental subject to explain our understanding of very basic aspects of the natural world, but his idea can be extended much further. For example, Edmund Husserl argued that the transcendental ego gave each person the ability to comprehend eidetic essences and to perceive the world in terms of categories. One can also recognize a similar motivation in Claude Lévi-Strauss's concept of universal structures of the human unconscious that underlie all myths, or in Noam Chomsky's theory of a universal grammar that underlies all human language.²³

The most serious problems with this sort of approach occur in accounting for the differentiation of individual understandings and the transformation of shared understandings over time. If we limit our focus to explaining our common understanding of space and time in the natural world, these issues do not arise so urgently. However, we are trying to explain how people within a particular culture at a particular time share understandings that are partly different from those held by persons in other cultures and times. Thus we need a sort of "historicized transcendental subject," a common hermeneutic apparatus that is similar for all members within a culture but differs for people in different cultures and times. Yet in some sense this expression is a contradiction in terms; for what makes the transcendental subject transcendental is precisely its universality and resistance to historical variation.

One might attempt to avoid historicizing the transcendental subject by arguing for the universality of a limited set of features of human thought that explain some but not all features and varieties of shared cultural understandings.

In particular, one might retain a Kantian-style explanation of formal features of human cultural understanding, while conceding that more substantive features are subject to historical variation. For example, Lévi-Strauss argued that although different cultures have different myths, the basic principle of conceptual opposition is the same for all. Chomsky holds that although natural languages differ in many respects, they all share basic grammatical features. Unfortunately, this strategy leaves the basic problem unsolved. For we want to explain how shared understandings and substantive agreements occur within various cultures even though the nature and content of these shared understandings and substantive agreements differ in different cultures.

The great strength of Kantian-style explanations turns out to be their greatest weakness—they can guarantee shared understandings only so long as those understandings are unaffected by historical change. However, once we concede that each culture and time has its own version of a “transcendental subject”—a common conceptual apparatus that guarantees shared cultural understandings within its boundaries but that changes over time—we immediately face the familiar problems of transmission, differentiation, and transformation. Once history intrudes, we must explain what mechanism guarantees that people within particular cultures have roughly the same apparatus of understanding over time, and what causes this common apparatus to change in more or less identical ways for each person in the culture. The great advantage of supra-individual and behavioral accounts is that they can be historical in a way that a Kantian solution cannot. Yet they have their own difficulties in explaining the similarities (as well as the differences) among individuals’ understandings.

The theory that I propose seeks to explain what people have traditionally called ideology as a special case of shared cultural understanding. But as our discussion has shown, the concept of shared cultural understanding itself needs serious explication. To describe the phenomenon of ideology, we need something like Gadamer’s concept of tradition, but we must alter it considerably to avoid the puzzles that this and similar concepts produce. We need a way of explaining shared cultural understandings that avoids the defects of the three approaches mentioned above while combining their advantages. In short, we need something

1. that exists in each individual;
2. that shapes and enables individual understanding and cultural know-how;
3. that guarantees similarity of cultural understanding and know-how while permitting some variation, disagreement, and mistake among individuals within the same culture;
4. that changes and develops over time; and
5. that constitutes individuals as persons living in a particular culture at a particular point in history.

The best way to describe this thing is as a kind of cultural software. A copy of this software forms part of each person. Cultural software performs a function similar to Gadamer's "tradition": it provides us with the tools and pre-understandings that enable us to make judgments about the social world. Moreover, to the extent that people possess roughly similar copies, their cultural understandings are shared understandings. However, the theory of cultural software poses a different answer to the problem of location. While it is not clear where a Gadamerian tradition resides, our cultural software resides in us, because it is literally part of us.²⁴

Our cultural software is written and rewritten through social interaction and communication. These acts result in an economy of similarity and difference between the cultural software of different persons. This economy, in turn, produces convergence in cultural understandings as well as individual differentiation. It ensures that our cultural software is roughly similar to that of others in our culture even if it is by no means identical in all respects. Moreover, through this economy, the cultural software of individual human beings evolves over time. Our cultural software bears the marks and effects of previous development. It is the historical component of our human existence.

Thus what Gadamer calls tradition is not something that controls individual understanding but an effect produced by the cultural software of many individuals who have communicated with and thus affected each other's cultural software over many years. Saying that we "live in" a tradition means that we participate in an economy of cultural communication with others who have (or have had) roughly similar cultural software. Shared understandings are produced by the rough similarity of our cultural software, and regulated by our communication with others. Thus when we speak of "our cultural software" we do not refer to any supraindividual entity or collective consciousness. Rather, we mean only the collection of partly similar and partly different individual copies. In this sense, cultural software is the historicized analogue of the Kantian transcendental subject—it is a conceptual apparatus within each individual that prefigures cultural understanding but that can also change and evolve over time.

Cultural Software and the Construction of Persons

Behind this explanation of shared understandings lies a further and deeper intuition that motivates the metaphor of cultural software. Human beings are made of knowledge; we are the living embodiments of information. Everyone knows that human beings store information in their genes. And many people also know that human beings store information in their immune systems. This information, produced and shaped by the body's previous encounters with mi-

croorganisms, helps it ward off future disease. But human beings also embody a third kind of information—cultural information. We know things and we know how to do things because we live in cultures, and this ability, this knowledge, is central to our existence as persons.

Our human existence as embodiments of information, as bearers of cultural know-how, is the most basic motivation for the metaphor of cultural software. The comparison between cultural software and computer software encompasses two further ideas. The first is that software is an indispensable tool for processing information and performing tasks. The second is that software is an indispensable part of what we mean by “the computer.”

Let me address these two points in turn. First, a computer needs software to process information. Without this software it cannot do its job; it cannot interact with the environment around it. If one boots up a computer without software, it just sits there and does nothing. One can type on the keyboard endlessly, but the computer will not respond, or at best it will spit out an error message. It cannot process information because it has nothing to process information with. At best its ability to process information is primitive and unhelpful. Only when we install software can it do anything useful, and even then the type of information it can process depends on the kind of software installed on it. The most massive supercomputer, installed only with a checkers program, still can only play checkers—though it can probably play checkers very quickly indeed. The potential power of the computer remains great, but its practical power is severely limited. As the power of the software grows and develops, so too does the practical power of the computer. In this way the potential abilities of the hardware are fully realized only through the development of increasingly elaborate software. Thus we might say in a very loose sense that software empowers hardware.

The second point is that this software is, to a very important extent, constitutive of the computer, or rather, what we unthinkingly call “the computer.” Often what we mean by “the computer” is really the software together with the hardware. So I say that I wrote this chapter on my computer, but technically I wrote it using a word-processing program installed on my hard drive. For most of us, then, what we mean by “the computer” includes all the capacities made possible by the interaction of its hardware and software.

In human beings, of course, the matter is much more complicated. A complex interaction of cultural software, genetic predisposition, and environmental influences creates the entity we know as the person. The physical structure of our brain itself is altered through the acquisition of cultural skills during childhood. If certain skills are not mastered by a point in our development, the brain will not possess the necessary equipment to produce them later. Hence the connection between the biological structures of our understanding and the

processes of social learning is closer in humans than the relation of hardware to software in any existing computer. We have evolved into creatures whose brain structure can be transformed through the processes of social learning. This is yet another sense in which it is truly in our nature to be cultural.

In order for a computer's hardware and software to interact, both must have a capacity to process information. My word-processing program allows my computer to process information, but it can do so only because it is loaded onto another program, an operating system like DOS or UNIX, that allows the computer to process software. Thus the information processing permitted by the software requires a prior information processor to employ it. Similarly, the operating system can run only because the computer has a program in firmware—read-only modules attached to the computer's architecture—that allows the computer to understand and process the commands it receives from the operating system. Finally, this firmware can operate only because the hardware of the computer allows it to process the commands of the firmware at a mechanical level. So the distinction between hardware and software in computers is not a distinction between the part of the computer that processes information and the part that does not. Rather, information processing occurs all the way down. In like fashion, we cannot say that our ability to reason and evaluate is purely a product of our cultural software. We are born with the ability to become reasoning beings. Rather, cultural software articulates, supplements, and refines our powers of reasoning and evaluation. Cultural software is the historical component of human reason, not its sole component.

The relationship between hardware and software in computers must be explained differently. In theory, my word-processing program could be hardwired into the computer. It could become part of the hardware. But in practice it is more convenient for me to be able to remove it from memory and substitute different programs, or to upgrade the program that I have. This is the great advantage of software as an information-processing device. It is changeable and adaptable; it creates the possibility of many different types of hardware/software combinations, and hence many different types of computers.²⁵

Just as computer software allows computers to harness their power, cultural software empowers human beings. The human mind is a marvelous device. But like the most powerful supercomputer, it needs methods of understanding if its power is to be tapped. Our cultural software is the result of a long process of collective accumulation and construction. It has produced elaborate tools of understanding, which, in conjunction with technology and institutions, can be tremendously empowering.²⁶

Of course, cultural software is empowering not only in the sense of allowing us to achieve our goals. It also enables us to reflect on and describe what our

goals are. Cultural software allows human beings to articulate and concretize their values, to put flesh on the bones of their innate but inchoate urge to value and evaluate. Through cultural software our brute sense of the beautiful is transformed into the many varieties of aesthetic judgment, some of which come into being and fade away at different points in history. Through cultural software the inchoate sense of good and bad is transformed into the many varieties of moral and practical judgment, and the many virtues and vices are articulated and differentiated. Thus cultural software is the great enabling device not only of human understanding but also of human evaluation. For this reason alone it is the greatest of human creations, the most powerful and important of human tools.

Historical Existence and Cultural Construction

The theory of cultural software is both a theory of ideology and a theory of historical existence. Gadamer's ontological hermeneutics argues that to exist in history is to exist in a historically generated tradition. But this answer simply raises in a new form the familiar question of what a tradition is such that people can exist within it. The theory of cultural software allows us a better way of expressing this insight. To exist in history means to be the bearer of a particular variety of cultural software that has been produced through a process of cultural evolution. Thus historical existence is not merely existence in time but existence at a time when one is constituted by a particular form of cultural software peculiar to that time. A person living in the sixteenth century has a different kind of existence from that of a person living in the twentieth, a difference that is due not merely to differences in climate and technology. Their genetic inheritance may be roughly the same, but their cultural software is quite different. And so the persons, who incorporate cultural software, are different. It is this feature of human being that distinguishes the existence of a person from that of the Grand Canyon. The Grand Canyon exists in time, but only people exist in history, because only people are constituted by an evolving, collectively created cultural software.

Like Gadamer's theory of tradition, the theory of cultural software is also a theory of understanding, or, more accurately, of the historical basis of understanding. Human understanding is understanding in history; it is made possible by tools of understanding that bear the marks of their historical development. So there is an intimate connection between historical existence and historical understanding, between living in history and understanding in history. To be human is to be constituted by a certain type of cultural software that predisposes and facilitates understanding in certain ways and not in oth-

ers—a cultural software that is the product of a certain history of conceptual bricolage and cultural evolution. This predicament is both the meaning of historical existence and the precondition of cultural understanding.

In this way, the theory of cultural software takes literally the contemporary chestnut that individuals are socially constructed. People become people only when they enter into culture, which is to say, only when culture enters into them, and becomes them, when they are programmed with and hence constituted by tools of understanding created by a culture at a certain point in history. Through existence in history, which is existence in culture, people obtain and incorporate cultural tools, and these become as much a part of them as their arms and legs.

The idea of cultural construction is often associated with cultural determinism. But the theory of cultural software suggests that this view is misleading, for cultural software empowers individuals even as it constructs and creates them. It untaps the potential power of the human mind just as an increasingly complicated and sophisticated software program allows a computer to do more. So we must understand cultural software as constitutive not only of identity but of autonomy as well. When we confuse cultural construction with cultural determinism, we misunderstand what culture does for human beings. Culture is not a law of obedience but the source of what we call freedom. Cultural software, rather than being the enemy of human autonomy, is the very condition of its possibility.

Although cultural software empowers individuals, it also creates a certain opportunity for power over individuals who are constituted by it. It does both of these things at one and the same time, and through the same mechanism. The power that cultural software makes possible is precisely the power that the tools of understanding have over the individuals who are partly constituted by them. This power arises in part from the limitations of our conceptual apparatus; this is akin to the very powerful computer that has only a checkers program. Yet a second aspect of this power is more subtle. It arises from the nature of information processing itself, and it is never fully eliminated, no matter how sophisticated the software becomes.

Processing information always requires partiality and selectivity. As Heraclitus recognized, the world is in perpetual flux; we cannot comprehend its nature in all of its infinite diversity and differentiation. Without some form of simplification, in the form of categorizations, narratives, heuristics, or norms, it is impossible to understand anything at all. Information requires simplification—taming the flux for the purpose of understanding—and so at the very moment when understanding is made possible, partiality also emerges. I often like to say that the key to information is in formation; it lies in the selection and categorization of the flux of experience into comprehensible categories,

events, and narratives. In order to understand, we must establish similarities and differences, categories and narratives, canons and heuristics. These are the basis of all information, and hence the basis of our cultural software. So our cultural software limits even as it empowers. It informs us in forming us, which is to say that it informs us in forming our selves as selves endowed with a certain form of cultural software, who see things one way and not another, who are properly “tooled up” for some tasks but not for others.

Thus cultural software has power over us because this power is rooted in the very way in which we are able to process information and articulate values. Of course, other individuals within our culture can take advantage of the partiality of our cultural software. They can gain power over us because we, like they, are constituted by the tools of understanding. The most obvious example of this phenomenon is the power of rhetoric and symbols. Rhetoric has power because understanding through rhetorical figures already forms part of our cultural software. Symbols have power because the associations that make them symbols are already part of us. So the study of rhetoric or the study of semiotics may be thought of as part of the study of cultural software, or, more properly, the study of the traces and effects of this software. It is the study of the building blocks of our understanding, and therefore the study of the forms and modes of power exercisable over that understanding. At the same time it is part of the study of reason itself, the culturally created reason that underlies our everyday thought and action.

The theory of cultural software rethinks the traditional conception of ideology in two ways. First, it sees ideological power as the power that cultural software has over the persons who are constituted by it, who are persons because of it. Instead of seeing ideology in the form of false beliefs held by subjects who preexist those beliefs, it locates the source of ideological power in the constitution of subjectivity itself. This subjectivity is not only the meaning that others assign to you but also the meaning that you assign to the world itself through the shared tools of cultural software.

Second, the theory argues that ideology, or rather what replaces it—cultural software—must be understood not only through its negative effects but also through its positive ones. Cultural software does not merely obscure; it also clarifies. It does not merely limit the imagination but empowers it as well. The theory of cultural software thus rejects a uniformly pejorative conception that views ideology as a disease or a decrepit form of human thought. In the theory of cultural software, the mechanisms of ideological thought are the mechanisms of everyday thought. In this theory, truth and falsity, deception and empowerment enter through the same door.

1. Tools of Understanding

1. *Ethics of the Fathers*, Philip Birnbaum, ed. and trans. (New York: Hebrew Publishing, 1949), 5:8, 40.

2. Indeed, from its inception the concept of ideology has always been contested, and hence the theory has generated many variations. Compare the variety of definitions offered in Terry Eagleton, *Ideology: An Introduction* (London: Verso, 1991), 1–2.

3. Here I am gathering together what proponents of a discourse model deliberately wish to distinguish among. They focus on acts of speaking, writing, and meaning rather than on beliefs. I have no quarrel with the claim that thought, meaning, language, and action are inextricably related. My point is that a pejorative conception of ideology has a particular interpretive attitude toward the object of its critique, whether that object is belief or discourse.

4. Compare P. N. Johnson-Laird, *The Computer and the Mind* (Cambridge: Harvard University Press, 1988); Hilary Putnam, *Representation and Reality* (Cambridge: MIT Press, 1988); and John R. Searle, *Minds, Brains, and Science* (Cambridge: Harvard University Press, 1984).

5. I should note that the very attempt to divorce these issues is itself controversial. See Gerald M. Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind* (New York: Basic, 1992).

6. Howard Gardner, *The Mind's New Science* (New York: Basic, 1979), 41. The same, I am afraid, must be said of much of the most important and valuable work in the philosophy of mind. John Searle is the most notable exception, but of course he has also been highly critical of the computational metaphor. See Searle, *Minds, Brains, and Science*, 28–41. In fact, there is an important connection between his critique of the computer metaphor and his views about the study of culture. Searle has argued that what differentiates the study of the social sciences from the study of the natural sciences is that the products of culture are the products of intentionality, something he claims existing computers do not possess (82–83). Thus, at least from Searle's perspective, it

would not be at all surprising that work employing the computer metaphor tends to bracket away questions of cultural understanding.

7. Jerome Bruner, *Acts of Meaning* (Cambridge: Harvard University Press, 1990), 11.

8. For an accessible discussion of brain physiology explaining why such a simplistic hardware/software model must be wrong, see Edelman, *Bright Air, Brilliant Fire*. Moreover, the fact that human beings exist in bodies is an important feature of how their cognitive tools emerge and develop. See Francisco J. Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge: MIT Press, 1991); Hubert L. Dreyfus, *What Computers Can't Do: The Limits of Artificial Intelligence* (New York: Harper and Row, rev. ed., 1979), 235–55. The metaphoric and metonymic models described in Chapter 11 are premised on the importance of embodied experience to human cognition.

9. See William H. Durham, *Coevolution: Genes, Culture, and Human Diversity* (Stanford: Stanford University Press, 1991).

10. If the theory of ideology is properly part of the philosophy of culture, the philosophy of culture is also the philosophy of history, for it asks how people exist as members of a culture in history.

11. I distinguish the ability to speak a particular language from linguistic ability in general. There continues to be considerable debate among linguistic theorists concerning the scope and the parameters of innate linguistic ability.

12. Hans-Georg Gadamer, *Truth and Method*, Garrett Barden and John Cumming, eds. (New York: Crossroad, 1975), 245–53.

13. Hans-Georg Gadamer, “The Problem of Historical Consciousness,” in *Interpretive Social Science*, Paul Rabinow and William M. Sullivan, eds. (Berkeley: University of California Press, 1979), 103–59.

14. Jürgen Habermas, “A Review of Gadamer’s *Truth and Method*,” rpt. in *Understanding and Social Inquiry*, Fred R. Dallmayr and Thomas A. McCarthy, eds. (Notre Dame: Notre Dame University Press, 1977), 335–63; Hans-Georg Gadamer, “Rhetoric, Hermeneutics, and the Critique of Ideology: Metacritical Comments on *Truth and Method*,” and Jürgen Habermas, “On Hermeneutics’ Claim to Universality,” rpt. in *The Hermeneutics Reader*, Kurt Mueller-Vollner, ed. (New York: Continuum, 1992), 274–92, 294–319, respectively.

15. Stephen Turner, *The Social Theory of Practices* (Chicago: University of Chicago Press, 1994), 49.

16. Gadamer, *Truth and Method*, 245–53, 261–62.

17. *Ibid.*, 351.

18. Turner, *The Social Theory of Practices*, 44.

19. Cf. Gadamer, *Truth and Method*, 263–64 (“It is enough to say that we understand in a different way, if we understand at all”).

20. David Lewis, *Convention: A Philosophical Study* (Cambridge: Harvard University Press, 1969), 56, 78, 118.

21. As examples, think of racist attitudes, or the cultural meanings of miniskirts. These examples of shared meanings are a far cry from the classic examples of coordi-

nating conventions like deciding whether to drive on the left-hand side or the right-hand side of the road. *Ibid.*, 5–8. Moreover, describing conventions as solving “problems of coordination” puts altogether too rosy a glow on social conventions like slavery, or cultural associations of femininity with submissiveness. As described more fully in Chapter 3, we must try to understand how self-replicating conventions and institutions can be parasitic on the human capacity for sociability and harmful to human interests.

22. See Immanuel Kant, *Critique of Pure Reason*, unabridged ed., Norman Kemp Smith, trans. (New York: St. Martin’s, 1929), A 346–47, B 404–5.

23. See, e.g., Edmund Husserl, *Ideas: General Introduction to Pure Phenomenology*, W. R. Boyce Gibson, trans. (New York: Collier, 1931); Claude Lévi-Strauss, *The Raw and the Cooked: Introduction to a Science of Mythology*, vol. 1, John Weightman and Doreen Weightman, trans. (New York: Octagon, 1970); Noam Chomsky, *Reflections on Language* (New York: Pantheon, 1975).

24. The idea of cultural software differs from the Gadamerian notion of a tradition in yet another way: Cultural software encompasses more than linguistic ability. It includes bodily skills that, although teachable through language, are not the same thing as linguistic ability. These include the ability to cook a soufflé, play a musical instrument, or hit a baseball. Although Gadamer insists on the importance of language as the medium of tradition, his formulation fails to encompass all of the many different types of skills and bodily movements that can be transmitted and reproduced in individuals, that constitute them as individuals, and that affect their understanding of themselves and of the world.

25. A hardware/software combination of this type is sometimes called a virtual machine, because it uses the software to imitate another machine that has a different hardware configuration or is dedicated to a different set of tasks. For example, with the right kind of software, a Macintosh computer can become a “virtual” IBM-compatible computer and run some kinds of DOS-based programs.

26. For an evolutionary argument describing how the capacity to employ software might have developed in humans, see Daniel C. Dennett, *Consciousness Explained* (Boston: Little, Brown, 1991), 182–91. Dennett contends that “software” transforms the hardware of the brain into virtual machines that perform various tasks (211). He then argues that human consciousness is the product of these hardware/software interactions (218).

2. Bricolage and the Construction of Cultural Software

1. The claim that cultural software is constitutive of the person is also true, in a somewhat different way, about technology and institutions. Our subjectivity may also depend on our participation in social institutions, and it may even depend, as Hegel argued in his theory of property, on the material objects that we own.

2. The most well-known philosophical critique of the *homo faber* model is Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1958).

3. Donald A. Norman, *Things That Make Us Smart: Defending Human Attributes in the Age of the Machine* (Reading, Mass.: Addison-Wesley, 1993); R. L. Gregory, *Mind in Science: A History of Explanations in Psychology and Physics* (Cambridge: Cambridge Uni-