Title

Origins and functions of human culture, mind and brain: Suggestions and speculations

Journal

Cogent Psychology, 1(1)

Author

Mandler, George

Publication Date

2014-10-01

Peer reviewed

(2014), 1: 969553
Received: 26 August 2014
Accepted: 23 September 2014

*Corresponding author: George Mandler, Department of Psychology, University of California, San Diego, La Jolla, CA 92093-0109, USA; University College London, London, UK
E-mail: gmandler@ucsd.edu

Reviewing editor:
Peter Walla, Webster Vienna Private University, Austria and University of Newcastle, Australia

Origins and functions of human culture, Mind, and brain: Suggestions and speculations

George Mandler[1,2]*

Abstract: Psychology should increase its concern with general theories, culture, and a broadening of psychological science.

Subjects: Cultural Theory, History & Theory of Anthropology, Theory of Mind Keywords: mind, culture, theory 1. Introduction

What follows is an exercise in trying to look at human psychology from the outside—as if composed by an alien visiting our world. I want to address the question what human minds/brains are like regardless of culture and local differences, and how and why those differences arose. Subsidiary questions ask how we evolved into that basic human mold and how current orientations affect that knowledge. After nearly 70 years of "doing psychology" I believe there is a relative shortage of objective approaches to the aims and descriptions of such a basic science of psychology. Experimental psychology has gone from an emphasis on contending theories to primarily studying more limited phenomena. As a path to an obviously distant goal, this essay is written in part to discuss the aims of a science of psychology, to place it in the context of the scientific enterprise in general, and to argue for more specific directions in its practice. I will ask for a more unified approach to our science. The discussion is presented as an essay not as a scientific paper. And I need to note that I shall use "mind" as a summary concept for the various mechanisms that generate human behavior and thought, of which brain is the interactive physical representation and generator. "Behavior" has become an unacceptable concept for many psychologists, but all I wish to propose is that any theory of the human must start and deal with what is observable—as in all sciences, i.e. behavior. I use behavior in a general sense covering all positively observable activities of the human body, including the affective domain and bodily reactions recorded with appropriate instruments.

ABOUT THE AUTHOR

George Mandler, born 1924 in Vienna, obtained his BS from NYU and Ph D from Yale University. He studied at the University of Basel and taught at Harvard University and the University of Toronto before founding Psychology at UCSD in 1964. He retired in 1994 and bcame a visiting professor at University College London. In 2009, he was awarded an honorary doctorate from the University of Vienna. He was a leader in the cognitive revolution. His contributions included the fields of cognition and emotion, the development of organization theory of memory, dual process recognition theory, and the revival of the role of consciousness in modern psychology.

PUBLIC INTEREST STATEMENT

The article addresses the question what human minds/brains are like regardless of culture and local differences, and how and why those differences arose. Differences between Western cultures and others are important foci of discussion. Subsidiary questions ask how we evolved into that basic human mold and how current orientations affect that knowledge. There is a relative shortage of objective approaches to the aims and descriptions of such a basic science of psychology. Further discussions explore methods and approaches that are appropriate for a modern psychological science.

Empirical psychology has become increasingly varied over the past few decades. One can and should welcome that diversity, but also to argue for a rejuvenation of one of its earliest themes—theoretical and empirical arguments about the origin, structure, and development of a modern human being. Much of currently published research in psychological science presents the results of situational experiments that address specific conditions and which surely will eventually be part of the larger picture of a science of psychological humans. My aim is to encourage and suggest the structure and components of a comprehensive theory which would have as one of its aims an understanding of a generalized, psychological human. I shall not argue for any new or old approaches to psychological theory, but rather defend apparently useful directions and criticize those that fail to advance the enterprise.

Currently, some of the most fruitful advances toward a coherent psychological science have been made through the uses of mathematical/cognitive models and mini-theories, but there is no discernible unifying thread of a mainstream theory to which various laboratories can contribute. There are some exceptions, and

significant successes have been achieved by Signal Detection Theory in a variety of areas. Eventually, though one would expect various approaches and models to be unified into a coherent measurement theory and representational models in psychology. In some areas of psychological investigation, there have been significant advances that one would expect to be incorporated into a more comprehensive picture. Important in this advance are the areas of vision and sound where we are approaching inclusive deterministic theories.

In my discussion, I attempt to place psychology among the sciences, guided by general principles of investigation and knowledge. Our universe is governed by general laws, none of which we yet fully understand—even in the more advanced disciplines of mathematics, physics, chemistry, etc. Psychology has a difficult row to hoe since the science needs eventually to take into account the full panoply of development starting with micro-organisms that eventually made human life itself possible—in the process benefiting from other sciences and the findings and processes of the theory of evolution in particular. Our task—eventually—is to understand the human mind that discovered and generated our current mastery of the sciences. We have advanced impressively from the beginning of thought but we are still far removed from the insights that sciences—including psychology—can eventually generate.

When speaking of psychology, I do not wish to criticize the work has been done in a particular area, rather I am advocating more comprehensive research programs in all areas that may reasonable be called scientific psychology and that follow the rules of mathematics and logic that govern all the sciences. After describing a goal of a culture-free psychology I shall discuss some subsidiary related issues.

2. Psychology and culture

The term “culture” is generally and comprehensively used to describe and summarize human characteristics and behaviors that usually are not or cannot be assigned to genetic inheritance. “Culture” is used to describe the manner in which humans construct their society and common enterprises. Some descriptions of cultural variations have ascribed them primarily to cognitive, i.e. information processing, characteristics. Apart from a cognitive approach, the available evidence indicates that all or most human functions tend to define different cultures, but sometimes also permit relatively large deviations from those norms. One can imagine that our trans-galactic visitor may, at first glance, consider members of specifically different cultures as different species. For the human visitor from another culture, the differences are usually immediate obvious in such areas as language, dress, and public demeanor, and the differences also become apparent in such variable aspects as gender attitudes, leisure activity, social organization, and many others.

Whereas studies of the relations between culture and psychology have been extensive and informative, they have frequently failed to note the cultural prejudices of Western psychology. Surveys of differences in psychological results in different cultures have shown that a large number of psychological phenomena, including such apparently general phenomena as psychophysical judgments, procreational behavior, and parental identification, differ from culture to culture. In other words, the Western observer cannot, in a large number of instances, be certain that her results would be replicated in a different culture, and thus may not be useful as bases for generalizations about human psychology. For example, Western beliefs generally hold to the notion that female and male parents are specifically invested in their offspring and the protection of their psycho-sexual inheritance, but research has shown no such invariant cross-cultural commitment. Thus, psychology needs studies of cross-cultural psychological thought and behavior on the one hand and of culturefree characteristics on the other. In the process, the science needs to go beyond the powerful beliefs within cultures about their own methods of adapting and exercising underlying basic human needs and structures. However, the cultural glue that binds individuals into a specific society is subject to a paradox. Whereas cultures are represented by long standing standards, preferences, and antipathies of human behavior, where the behavioral glue can be established and discarded within short periods of times. Consider the explosive development of social media on the internet and the rapid rejections of some clothing habits, just in our recent history. At the present time, we have little concrete evidence or knowledge of the causes and mechanisms of many of those cultural varieties. Our closest developmental relatives, the chimpanzees, have developed some rudimentary cultural traits, generally in the area of food seeking and preparation, but little beyond that, still leaves open the origin of the multitude of human cultural characteristics. It is, for example, very likely that when *H. erectus* moved from Africa to Europe and Asia and encountered novel cold climates, the adoption of warmth-providing clothing was an early cultural step.

I believe it was a group of artificial intelligencers some years ago who coined the misguided phrase that "culture is just noise." If so, it is a noise that partly structures our lives, sharing responsibility with the underlying common structure of the human mind and brain upon which all the different cultures are built. It is one major goal of this essay to encourage the search for the characteristics of human beings that are not only general, but specifically free of cultural influences, i.e. free of "noise." We can describe the pre-cultural human as having the potential and mechanisms that make the acquisition of culture—broadly defined—possible and likely. The normative case is the neurological and behavioral "equipment" that makes possible the acquisition of language. It is one area in which neuroscientific research has made much progress from one end of the chain that leads to human language but too little is known of the connecting strands to auditory, meaningful language. Similar problems arise with respect to such human characteristics as visual scanning, purposeful motor movement, and many other components of the final cultural product.

The culture into which one is born is more of a template than an inevitable pattern. Changes in the ways that the individual adapts to the dominant patterns occur in varying degrees throughout a lifetime, and it will be difficult and challenging to give a reliable account of these transformations. At the extreme end of this process is a consistent and reasonable explanation and description how, for some individuals, their cultural characteristics and identification can change from one cultural identification and definition to a quite different and often divergent one.

In summary I want to ask Why? and How? cultures develop and change. There are obvious conditions of our world that determine cultural characteristics, among them climate, geography, population density, and natural resources. But these factors fail to account for all cultural differences, and in particular for the radical variations in language. And each of these factors and problems requires mechanisms that produce these changes, whether they are neo-Darwinian or follow any of several possible learning and acquisition paradigms.

At present, there are few efforts in these directions. In contrast to psychological research from the nineteenth to mid-twentieth century, when general characteristics and—if possible—laws of human behavior were the goal and purpose of much research, the early twentyfirst century has seen a primary emphasis on specific situations or characteristic or on restricted sets of individuals. We are far from approaching the description of a hypothetical culture free human psychology—if in fact it is possible.

3. Philosophy and psychology

Speculations about the sources and structures of human thought and behavior stretch to the beginnings of philosophy. When the early Greek philosophers speculated about the structure of the cosmos, they also tried to understand the behavior and motives of their fellow humans. And generations of philosophers improved, corrected, and expanded these speculations. Eventually, in the stream of human intellectual history, the various areas of knowledge diverged. Some, such as physics and cosmology, combined their speculations with rigorous experimentation and observations, others such as the sciences of society and human behavior combined quantitative models and experimentation with speculations and observations of their own species' thoughts and behavior. When physics developed experimental methods, it was to be centuries before psychologists followed. And whereas philosophy as a discipline mostly abandoned physics and other sciences, many philosophers have continued to regard consciousness, esthetics, etc. as primarily of philosophical concern. Thus, some philosophers are disturbed that neuroscientists might consider it an empirical question whether esthetic markers reside in the object rather than being generated by the human observer. In that connection, it should be noted that philosophers just as many psychologists have been distinctively delinquent in considering cultural differences in their generalizations.

4. Theories, postmodernism, and speculative psychologism

The ties between psychology and philosophy from which empirical psychology emerged in the late nineteenth century are of course still of historical interest. Modern structuralism and postmodernism regard science primarily as a social product and frequently assert that structuralist analyses can go beyond common scientific understanding. One of several versions advocates abandoning the search for a general human psychology. That approach is related to a prominent postmodern position that would adopt a changeable approach, taking account of the many different "humans" a cultural approach would produce. In essence the postmodern approach would produce a diversity of psychologies, rather than a psychology that would attempt to explain

and integrate the various local variations. In the absence of a shared approach to theories and facts, it is not surprising that in most sciences (including psychology) these postmodern discussions have not produced any advances in knowledge and understanding. Modern trends in postmodernism and related intellectual interests may have no effect on modern psychology but their efforts still muddy the waters of an empirical, scientific psychology. The lack of influence of postmodern thought is illustrated by the fact that very few published articles in psychology promote speculative rather than testable propositions. Theories that do not include methods and directions for testing them occasionally contribute some testable ideas, but on their own fail to advance psychology as a field of positive knowledge. Contemporary psychology is marked by multiple theoretical paths, depending often on identical and sometimes divergent evidence. A unified psychology that integrates different theoretical strands will answer many of the questions raised here. It will also overcome the current trend toward theoretical multiplicity. For example, in the area of emotion more than two dozen theories contest and flourish in the literature, even though there are promising attempts to unify these various approaches.

5. Human evolution, language, and the origins of art, truth, and values

The topics of early evolution, the origins of language, and the development of our investment in various values are not strictly psychological domains. However, investigations of these areas would probably benefit by an increasing participation of psychological science just as psychology can benefit from reaching out beyond its historical boundaries. Apart from the notion that the early history of art, language, cultural artifacts, and modes of "civilizations" would contribute to the understanding of their current state, psychological principles could assist the understanding and use of our early history. I am advocating a field of psycho-archaeology which would use the modern methods of archaeology and proto-biology to address psycho-archaeological questions. Such an enterprise will contribute to our knowledge of early genetic development, the history of tool use, and the distributions of humans in preferred environments. Further encouragement of existing linguistic research will increase our understanding of early human minds as they benefited from the development of different language roots in different environments. We would learn more about the structure of the human

mind from understanding the roots of mathematics in early counting evidence, and of writing which appeared relatively late in our early history. How and why writing arose just a few millennia ago should contribute to our insight into the roots and development of the human mind. We have expended much more effort and time on the history of psychology than on the history of the development of the human kind. It is time, and I believe overdue, to reverse that trend.

I have noted the tendency by many contemporary philosophers to think of values, esthetics, and the structure of deductive and inductive thought as a characteristic of the world in which we live, rather than as a product of human thought and development. Consider that an object may be considered beautiful in one culture, but uninteresting of even ugly in another, i.e. the distinction between thinking of beauty as inherent in the world versus seeing it as generated by the beholder. Obviously, the difference between that view of values and a psychological one which sees them as developing out of the cultural interactions between environment and human mental structure is not easily settled. However, neither psychologists nor philosophers have paid enough to the large differences in aesthetic and other values that can be found in the differences among contemporary human cultures, but also in the development of different cultures, particularly after the move of the species out of Africa in its early history. The large differences that can be found in such areas as family structure, esthetic preferences, and environmental as well as interpersonal values deserves a more extensive and systematic investigation—possibly aiming toward a theory of cultures that many anthropologists have worked on developing. Given more intense psychological investigations into cultural effects, a theory of culture might become a more cooperative enterprise for anthropologists and psychologists than it has been in the past.

6. Early development and adult behavior

Psychologists should share investigations of the early development of the human mind and brain with archeologists and other investigators of our early development. At the same time, they cannot abandon responsibility for trying to understand the development of modern humans from inception to maturity. Developmental psychology came relatively late in the building of psychological science. However, recent decades have seen a blossoming of the subfield and we now know much more about the origins and growth of conceptual thought as well as perceptual facility. The field is still relatively short of understanding how adult thought and problem solving derive from their early beginnings, but the direction has been mapped out and is on its way. Parallel to the basic operations of the human mind post conception and in infancy has come a growing understanding of the ways the human mental apparatus learns and uses language and its representations. A greater understanding of early development will inevitably further our grasp of adult thought and action.

7. Mind/behavior, consciousness, and neurophysiology

I have left this topic to near the end because of the large amount of theory and research that have emerged in recent years. In the past several decades, the functions and interactions of human consciousness have received increasingly useful explanations of the flow of human thought and behavior. What is still a mystery is the so-called big question—what is the neural/physiological basis of consciousness. One answer may be in the direction of phenomenology, another in a better understanding of non-conscious processes. Thus, we have a general body of knowledge that informs us what wavelengths of light activates specific neurons and gives rise to the sensations of red, blue, etc. I do not believe, however, that there is a current understand why a particular wavelength or neuron produces an experience that some individuals call “red”—it just does. And similarly, for the time being the physiological events that are correlated with consciousness just do that—consciousness is what it is, like a color or a sound. The relation between mind and physiology is an obvious one—any behavioral events must have some neurophysiologic correlate—unless one is going to give up our basic materialist view of the world. At the same time, burgeoning technology has made possible extensive investigations of neurophysiologic events that accompany and surround obvious behavioral correlates. The advent of a rich and informative physiology of the nervous system has been long overdue, and if it is sometimes overdone it is not too difficult to separate the wheat from the chaff.

What is missing is an appropriate scaffold which relates a rigorous theory of behavior to appropriate propositions that link or bridge to theories of neurology and physiology. The construction and discovery of that scaffold will precede the full development of useful and extensive theoretical structures.

cogent psychology

8. Psychology applied

Products of psychological research have been applied in a variety of areas such as education, the management of effort and labor, and the use of vision and sound theory. However, the most widely known and possibly least effective has been the connection between scientific psychology and its application to psychotherapy and mental health in general. In many ways, an observer would not go too far in considering psychology and psychotherapy (broadly conceived) as two different fields. The adoption of psychoanalytic theory and methods and their decline have had a theoretical life of their own. In recent decades little basic knowledge has been shared by experimental psychology and studies of psychopathology. The phenomenon is not new in science; biology and medicine have long been different though related disciplines. The current discussions of an adequate diagnostic manual of psychopathology and symptomatology may lead to a rapprochement. The success of cognitive therapies provides a possible link to general psychology and common theoretical notions.

9. Current issues

As I have noted current research focuses on single limited issues rather than on larger theoretical ones. Studies that contrast and test contending theories are too rare; they would advance more extensive and comprehensive theoretical enterprises.

Some of the reasons for this trend are extra-scientific, such as the increasing pressures on upcoming generations of scientists for sheer numbers of usually short publications. Similarly, and in large part for profit rather than scientific motives, journals multiply and many encourage quick and frequent publications, and some now support publication when a study's method has been pre-registered and approved. That movement generates methodological purity but undervalues relevance and content. These various trends do not encourage extensive empirical/theoretical studies.

The directions I have discussed may be helpful in promoting a broadly conceived, widely applicable science of psychology. The talent is clearly available, possible directions have been abroad since the late nineteenth century and the contributions of Wilhelm Wundt, William James and others, and a potential audience seems eager and receptive.

Funding
The authors received no direct funding for this research.

Author details
George Mandler[1,2]
E-mail: gmandler@ucsd.edu
[1] Department of Psychology, University of California, San Diego, La Jolla, CA 92093-0109, USA.
[2] University College London, London, UK.

Citation information
Cite this article as: Origins and functions of human culture, mind and brain: Suggestions and speculations, G. Mandler, *Cogent Psychology* (2014), 1: 969553.

Note
This guest editorial is intended to encourage theoretical and empirical work in the suggested directions. The inclusion of references would go beyond that intent and would have required too few or too many.