Consciousness in Interdisciplinary Perspective

Discussions from the Hall Center for the Humanities Fall Faculty Colloquium 2011

The authors in this volume hold copyright to their work. This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License.
Table of Contents

Introduction to the Project ............................................ Anna Neill & Leslie Tuttle ............ 3

List of Participants .................................................................................................................. 14

Discussion #1: The Hard Problem of Consciousness Nicholas Simmons ............... 17
With responses from Brian Daldorph, Rudolf Jander, Mark Landau and Glenn Adams

Discussion #2: Dodging Neurons Sherrie Tucker ......................................................... 26
With responses from Rudolf Jander, Brian Daldorph, and Nicholas Simmons

Discussion #3: The Ecological Correlates of Consciousness Glenn Adams ................. 36
With responses from Rudolf Jander, Sherrie Tucker and Ben Sax

Discussion #4: Conceptual Metaphor Mark Landau ...................................................... 51
With responses from Iris Smith Fischer and Ben Sax

Discussion #5: Sympathy and Mirror Neurons Ann Rowland ..................................... 64
With Responses from Brian Daldorph, Rudolf Jander, Mark Landau and Iris Smith Fischer

Discussion #6: Cognitive Science, Performance & Metaphor Iris Smith Fischer ............. 73
With responses from Ann Rowland, Sherrie Tucker and Brian Daldorph

Discussion #7: Evolution, The Brain & Imaginative Literature Anna Neill ..................... 86
With responses from Brian Daldorph and Glenn Adams

Discussion #8: Language and Consciousness Ben Sax .................................................... 95
With responses from Rudolf Jander, Leslie Tuttle and Ann Rowland

Discussion #9: Alzheimer's Disease Brian Daldorph .................................................... 102
With responses from Iris Fischer, Rudolf Jander, Anna Neill, Nicholas Simmons and Sherrie Tucker
ON EVOLUTION, THE BRAIN, AND IMAGINATIVE LITERATURE

I would like to make a few, very speculative comments here in response to Brian Boyd’s “Verse: Universal? Adaptive? Reversive?,” which we read together late in September. I like Boyd’s work enormously, because it remains sensitive to the contours of text even as it makes possibly the largest claim one can make about imaginative literacy—namely, that it participates in the evolutionary history of human cognition. What is sometimes controversial about his and other evolutionist approaches to literature is the emphasis on universal themes (especially, in this essay, the transcendence of death in art.) This is sometimes seen to limit our understanding of the specific historical content of text. It can also make the interaction between mind and culture seem unidirectional, as the latter becomes primarily a tool for the increasing efficiency of the former. Building upon his argument, however, I will try to keep in focus the way that developing mind and world act upon one another in the production and reproduction of specific cultural forms and meanings.

For Boyd, the arts tap into the evolved human predisposition toward mental play. By delivering information in pattern, poetry “enables minds to understand their environment efficiently.” It fine-tunes our neural wiring by demanding repeated and focused attention, while at the same time, by violating the patterns it works with, forces us to extend our mental reach. This in turn secures us greater mastery of our environment. It also wins attention from others with all the emotional satisfaction that brings, while at the same time, shared attention to things “unforeseen, hypothetical, counterfactual, or impossible” enhances our cognitive flexibility, encouraging us to imagine alternative scenarios for action, say in the face of danger. Boyd also argues that the patterns in familiar rhymes and proverbs deliver information efficiently because as mnemonic devices, they enable us to navigate “the vast flux of information we face.” Finally, in the context of TMT (Terror Management Theory), art may help us to overcome our existential anxiety as the sharing of symbolic meaning across generations offsets the incapacitating fear of death (the price we pay for rich conscious awareness).

By looking at text and mind from a great evolutionary distance, what we do not observe is the interface between the mind (by which I mean the totality of mental states, conscious and non-conscious, created by the brain) and text as an object in the world—a reciprocity that allows the particular, local meanings of a work of art to influence the physical organization of the brain even as brains deposit and fix meaning in the world in the form of cultural objects like literary text.

In The Physiology of Truth, the neurobiologist Jean-Pierre Changeux suggests that when we think about the formation of synapses and neural functioning in the human brain, we pay attention not only to deep human evolution (the influence of genes) but also to developmental evolution. It is through epigenetic processes that many synaptic combinations form and stabilize. While genes set development in motion—including the division and differentiation of cell types and the formation of the molecular structures that form the synapse—epigenetic events after birth, which involve interactions with the outside world (understood physically, socially, and culturally) help to shape and regulate the creation of neural networks. Through “epigenetic opening up of cerebral
connectivity to the external world” (Changeux, Physiology of Truth 209) the brain is shaped by learning and experience. At the same time, the epigenetic interfacing of brain and world, operating through the workspace of consciousness, allow the brain to create and store representations that can then be transmitted to future generations. In the form of culture, these representations condense into norms that in turn form part of the environment in which epigenetic evolution takes place.

When Changeux introduces imagination and art into what could be described as a “dialectic” between epigenesis and culture he too invokes universal themes, albeit in the spirit of Kant rather than Darwin. With its faculty of stimulating the mind by suddenly reviving images, art “inspire[s] new plans for a shared and harmonious future…. [and] by its evocative power, calls forth responsibility for others” (What Makes Us Think, 305). But what interests me more is the way he implies this dialectic operates in historical or social rather than evolutionary time. He cites the sociologist Pierre Bourdieu’s concept of “habitus” or the deep system of dispositions (perceptual schemata) that an individual develops in response to the objective social conditions into which she is born. For Changeux, habitus is a synthesis of genetic endowment, circumstances of upbringing, and experience of the social environment. Neurally structured disposition (if I may put it that way) is shaped by a combination of nature and nurture. At the same time, the long period of brain development in humans, during which information about the world is incorporated, stored, and shared, is in fact what makes the transmission and evolution of culture and thus particular forms of social life possible.

For Changeux, one of the defining properties of art is that it enables a shared conception of the world. By triggering empathy art “makes one aware of oneself as another” (What Makes Us Think, 229). Yet this universal, ethical function is complicated by art’s role in the reproduction of culture. As what Bourdieu calls a “field” it represents an organized social space that helps to create habitus and thus to consolidate particular social norms. Changeux traces this process all the way down to the epigenetic formation of neural networks, which both lie at the origin of culture (making culture possible) and which are themselves shaped by culture as one of the key environmental constraints in brain development. Even as our slow-developing brains make it more possible for us to act upon the world than any other species, the world that we make also acts upon us.

I’d like to close by looking at Boyd’s account of Shakespeare’s sonnet 81. For convenience, I’ll type out the poem here:

Or I shall live, your epitaph to make;
Or you survive, when I in earth am rotten;
From hence your memory death cannot take,
Although in me each part will be forgotten.
Your name from hence immortal life shall have,
Though I, once gone, to all the world must die;
The earth can yield me but a common grave,
When you entombed in men’s eyes shall lie.
Your monument shall be my gentle verse,
Which eyes not yet created shall o’er read,
And tongues to be your being shall rehearse,
When all the breathers of this world are dead.
You shall live, such virtue hath my pen,
Where breath most breathes, even in the mouths of men.

Boyd argues that Shakespeare creates an alternating pattern of assertions between survival and oblivion within each of the quatrains, culminating in a “death-defying affirmation” (Boyd, 192) in the final couplet, where the speaker asserts the addressee’s immortality in the very lines he has written to him. Boyd’s exquisite reading shows how Shakespeare stretches idiom to jointly capture the inevitability of death and the promise of resurrection in the minds and reciting mouths of future readers, while all the time promoting the power of the poet–speaker (as the one able to confer immortality) over the addressee who is implicitly his social superior. In this reading, the sonnet invokes two timeless themes: the power of art to overcome death and “the universal pattern of...our wishing to assert our rights, where we can, in the face of the dominance of others.”

Here’s another way of reading the sonnet. As Boyd points out, the poem is structured around the contrast between “I” and “you.” It therefore dramatizes the intersubjective space that Changeux sees as a fundamental property of art. It also points simultaneously to death and decay as the destiny of organic beings and to the cultural artifact in which the experience of mortality is shared, preserved and handed down to future generations. Both the form (sonnet) and the implied social subordination of the poet who serves (and yet in memory outlives) the noble addressee locate the poem in the particular time and place of late 16th-century England. The dramatization of a consciousness of the self as both mortal and immortal that takes place in the sonnet is made possible by the very enculturation of that process in the work of art. Intersubjective experience + print culture = production of an enduring cultural truth, yet one that is profoundly of its time. Both the speaker and the addressee are readers of this “future” text, which is (in a mind-twistingly circular fashion) the occasion of their coming together in thought about death and immortality. Their social relationship (together with the speaker’s ambivalence about it) is recorded in this text and reproduced in their “reading” of it. The final line, then, says less about the immortality of art, than the reproduction of particular social meanings in the bodies of living, culture-bound, human beings.

I would also like to think about the implications of this approach for the kinds of texts that actually resist intersubjective space by deploying “mind blindness” in the way that Vermeule describes. And I wonder whether Brian’s poem “Eve” falls into this category, or whether it moves in between “blindness” and intersubjectivity. But I think I’ve said enough for now.
Neill Works Cited

DALDORPH RESPONSE:

Anna, thanks for your paper. You enhanced my reading of the Boyd essay in particular, and developed his argument into something much more interesting and "mind twisting." At first I found the language of Boyd, Changeux, and Bourdieu quite difficult, but as I took more time time with it I was able to follow their arguments and I could see quite clearly the main point you’re making here: that we act upon the world and the world acts upon us, a much more dynamic interaction than Boyd’s notion of culture used as a tool to increase the efficiency of the mind.

Boyd has some good points to make. I particularly like the point he makes about the way that children at play are often learning to distinguish patterns in information that will, soon enough in their lives, help them in the various processes of education. It’s easy enough to see a smart kid who you know will excel in school because she is so quick at picking up a game. This is the perfect example to support Boyd’s main argument. Your argument is more sophisticated than this. You would say that the world—in my example, the game—also influences the child, perhaps even in that child’s "neurally structured disposition." This is to me a much more convincing argument. For example, the student athletes I have worked with have been changed by their sports. They do develop a way of thinking in which it seems their sport has "shaped their neural networks."

It’s easy for me to accept Changeux’s argument that interactions with the world shape our neural networks. If you think of what happens to an abused child, say, surely some of that experience is wired in to the child’s "habitus" (Bourdieu).

Again your reading of Shakespeare’s sonnet goes beyond Boyd’s. In reading Boyd I had the suspicion that his interpretation of the poem was really quite conventional, though dressed up in the terminology of the day, Terror Management Theory, eg. Your reading tries to see beyond the conventional sense of the "immortality of art," to look at the poem more for what it means to "living, culture-bound, human beings." I wonder how your reading would accommodate the common notion of the "universality" of Shakespeare’s art?

ADAMS RESPONSE:

Anna, reading/commenting on your post at the same time that I am Nick’s, it occurs to me that one way to frame the interests of many of us in the group—certainly my interests—is to say that we’re interested in investigating ecological correlates of consciousness (ECCs). I think this framing provides a productive parallel/counterpoint to the collective fascination (bordering on fetishization) with the neural correlates of consciousness that seemed to occupy much of our group’s discussion this semester. I propose this as a way to frame your discussion on artistic/literary production: investigating the extent to which particular forms of artistic/literary production are associated with particular varieties of consciousness/experience.
Your comments about Boyd’s work—that "it remains sensitive to the contours of text even as it makes [universalist] claim[s] about imaginative literacy”—reminds me of points that emerged in our group’s discussion of Tomasello (1999). Tomasello’s book, and earlier work by Marxist/Soviet psychologists like Vygotsky, emphasizes “the sociocultural work that must be done by individuals and groups of individuals, in both historical and ontogenetic time, to create uniquely human cognitive skills and products (p. 11).” Tomasello makes the point (which I repeated in my own blog post) that

   taking these processes seriously enables us to explain not only the universal features of uniquely human cognition—such as the creation and uses of material, symbolic, and institutional artifacts with accumulated histories—but also the particularities of particular cultures, each of which has developed for itself via these same historical and ontogenetic processes a variety of culturally unique cognitive skills and products during the past several millennia of human history. (p. 12)

I think it’s noteworthy in the context of your discussion that Tomasello tends to emphasize in his own work the relatively “universal features of uniquely human cognition” rather than the traditions/varieties of cognitive tools/tendencies that emerge in particular communities. It seems to me that you’re saying a similar thing about Boyd. Boyd emphasizes that imaginative literacy (literature?) provides the foundation for pan-human cognitive possibilities. One could also note, in the manner of Tomasello’s statement (if not the focus of his work), that particular forms of imaginative literature or practices of imaginative literacy typical of particular communities might also lead to divergence in human cognitive tendencies (even skill/abilities) across those communities.

This point about historical evolution of community divergence seems like something intermediate between Boyd’s universalism and the point that you note in response to Boyd: an interest in how “developing mind and world act upon one another in the production and reproduction of specific cultural forms and meanings.” I would translate to a cultural psychology audience as a reference to the dynamic process of mutual constitution between mind and world. Your interest—or at least your emphasis in the post—is on a smaller (ontogenetic) time scale than most discussions. [Perhaps] because of this, I think it has considerable potential for illuminating the process of mutual constitution on a more historical time scale.

I appreciate the distinction you raised between consciousness and mind, which you define as the totality of mental states, conscious and non-conscious, created by the brain. However, I continue to wonder about the distinction between these two. More specifically, as I note in my own blog post, I continue to wonder about the place of “unconscious” mind in our discussions. Does unconscious refer to knowledge/experience about which we could have awareness (e.g., in other circumstances), but do not now? Alternatively, does unconscious refer to knowledge/experience about which we could never have awareness? How separate is unconscious mind from consciousness? One important insight that arises from social psychology concerns the extent to which our conscious experience of why we do what we do can be quite unrelated to the ecological conditions that caused us to do what we do. That is, I may respond to your question about why I became a psychologist or why I find one car more attractive than another without fully recognizing
the impact of ecological forces (e.g., advertising) in shaping actions or preferences over which I come to claim authorship. More generally, it is impossible to separate “unconscious” associations from our experience of qualia; indeed, many psychologists would propose that qualia are almost fully constituted by associations that are, at most, barely conscious.

This direct shaping of experience via everyday engagement with material realities constituted by objective associations (co-occurrences: e.g., of negative or positive valence with different racial categories, or different occupations with different gender categories)—a shaping of consciousness that happens largely outside consciousness—comes close to the notion of habitus. Like you, I think the concept of habitus is a useful one for us to consider alongside consciousness. I am tempted to propose that habitus refers to “ways of being” and consciousness to “ways of experiencing”, but then I ask myself, what about “unconscious experience”? Is that merely an ill-considered phrase, or does it refer to something useful? Does artistic or literary production act on habitus, consciousness, or both?

Your references to Bourdieu and habitus (via Changeux) gave me flashbacks to an interdisciplinary reading group on “agency and objects” in which I participated during a recent fellowship leave. The group consisted of an art historian, an archeologist, an anthropologist, sociologists, historians, a medical scientist, and a couple cultural psychologists. We formed the group after we realized that we all had an interest in the extent to which material things might acquire a psychological charge that mediates social influence. The idea is that, rather than mere end-products of behavior (in reductionist, smells-like-science, behaviorist terms), objects are repositories of their producers’ understandings, motivations, desires—in short, intentionality. As repositories of intentionality, intentional objects (like tools) carry their producers’ understandings, motivations, and desires beyond the context of production—often, beyond the lifetime of the producer—in the form of a psychological “charge” that they deposit into new situations. In these new contexts of application, the psychological charge from intentional objects can exert influence on new actors’ behavior, experience, and consciousness, directing it in a way that resonates with the original (re)producer’s understandings, beliefs, desires.

To conclude, I will share an example from my undergraduate Culture and Psychology course. The course topic for this week was Cognition and Perception. In the lecture, I described work by Taka Masuda and colleagues (including Richard Nisbett, expert in the field of “culture and cognition”, who gave a lecture in the KU Department of Psychology on Friday). In their more standard psychological research, these researchers have established differences in habitual tendencies or modes of perception, such that attention to background of everyday scenes is greater among research participants in various East Asian settings than participants in various European and North American settings. Conversely, attention to figural objects in everyday scenes is greater among participants in European and North American settings than East Asian settings. However,

---

relevant to the discussion of imaginative literature as cultural technology for the production of particular modes of psychological experience, Masuda and colleagues were interested in the possibility that there are parallel differences in traditions of artistic production in these communities.\textsuperscript{33} In support of this possibility, an analysis of paintings displayed in European and East Asian museums indicated that figures in portraits were much larger in Western pictures than they were in East Asian ones (on average the Western faces were three times as large). To date, I don’t think that the investigators have illustrated the dynamic/causal relationship between tendencies of perception (emphasis on figure versus ground) and of artistic production (size of figural objects). However, I think this is just one possible example of the phenomenon that you raise regarding a resonance between habits of mind and forms of artistic/cultural production—the idea of artistic production as ECC.

If I read you correctly, I think we share an interest in the possibility that specific forms of artistic/literary production promote particular varieties of imagination/consciousness. Do you have good examples? Is this something that you’re interested in investigating/establishing via the investigative/rhetorical tools of empirical science? If so, then I am game to try. For example, I can imagine randomly assigning experimental participants to “engage” with some or another artistic/literary form and then measuring the effect of that engagement on indicators of some manifestation of consciousness. Is that proposal interesting? Beyond interest, would it be a form of scholarship that people in your discipline would recognize/value? What would an optimal interdisciplinary collaboration look like from your perspective?

\textbf{NEILL CLOSING COMMENTS:}

Glenn: Thank you for this fascinating response and for posing the question about collaborative research across our disciplines. Since Brian suggested I address the common assumption about the “universality” of Shakespeare’s art, I’m going to use Shakespeare as a reference point, and then try to think about whether or not his sonnet would work in the kind of study you propose.

I appreciate your framing suggestion about our shared focus on the “ecological correlates of consciousness,” and figuring out within that framework how habits of mind interact with art objects/forms of art production. This brings up for me Raymond Williams’s cultural materialist revision of Marxism. For Williams, art may be grasped as either an object or a practice. As objects, works of art outlast their authors to communicate information about the social landscape in which they were produced (or in another kind of art and literary criticism, to reveal some “permanent category of the mind”) (Williams, 1973). He calls for our recognition instead of “the conditions of a practice.” These include inherited (and deeply social) artistic/literary conventions and the social relationships that feed into the active composition. Elsewhere, he coins the phrase “structures of

feeling” (Williams, 1977) to describe the set of perceptions and values shared by a particular community and/or generation that are most powerfully articulated in artistic forms and conventions.

Williams’s stress on art as a practice seems to capture something analogous to the relationship between material objects and “psychological charge” that you describe. In both cases, the art object projects its cultural meaning and influence onto later social contexts through the medium of the psyche (which for Williams is collective in a “structure of feeling”). Yet what I most like about your formulation (and this also resonates with Williams) is this is not a reproduction of that original meaning as much as—your term—a “charge” in that new context. In my understanding of Bourdieu’s account of habitus, art objects largely reinforce and reproduce (unconscious) habits of mind. Here, instead, the aesthetic experience—which perhaps carries a heightened charge because of the way art stimulates and amplifies or condenses emotional reactions to the environment—reconfigures the social environments in which the object “afterlives.” To continue in the historical-materialist vein, this historical afterlife also points to what Walter Benjamin describes as the “seiz[ing] on a memory as it flashes up in a moment of danger” (Benjamin, 1969), or what Jonathan Gil Harris, recently invoking Benjamin, calls “untimely mediation” (Harris, 2007).

In the case of Shakespeare’s sonnet, the relationship between speaker and addressee is not fixed in either historical or evolutionary time; it is neither a demonstration of the universal human dispositions to social domination and fear of death, nor exclusively evidence of class-relations and interpersonal conventions of the culture of 16th-century England. Instead, the peculiar conflation of mortality and immortality that it achieves, and the strange assertion of self that it effects via protestations of self-effacement carry an emotional, conceptual, and political charge. This charge, mediated through the body of the (present day) reader, flashes forward not only into Benjamin’s “moments of danger” but also the structure and practices of everyday life. As an object that affords (am I using the term correctly?) recognition of the perilous state of selfhood (always in danger of expiring either in mind or body), the sonnet throws us out of habitual ways of grasping the world through the medium of a stable identity. Social power then ceases to be coded in an “I vs. you” structure, but instead moves fluidly in intersubjective space.

Changeux’s account of the ontogenetic neurobiology that supports habitus perhaps recognizes how the latter is not entirely norm-driven. In my original post, I dismissed the use of Kantian ethics in his claims about art and the mind. But focusing for a moment on what he says about the power of art to “suddenly revive images,” and thus provoke a sense of responsibility to others in an imagined shared future, I wonder whether the neural events it triggers suggest a technology for altering dominant structures of feeling. This might sound less utopian if I add that art remains, at the same time, a tool that constrains the development of synaptic structures, and that organizes emotional responses to the world in ways that allow for the coherence and continuity of cultural forms. (Who can say that high art fundamentally different from popular or commercial culture in this respect?)

So what would this look like in the form of an experiment? Now I’m getting really out of my depth. I’d be fascinated to see how this played out, but I don’t have the expertise to know how to dream it up. Could reactions to Shakespeare’s sonnet serve as the object of investigation here? Would it be possible to test reactions to that text such that we could identify the feelings and ideas it evoked
and then measure these against reactions to some salient contemporary images that represent class
difference, for instance? I’m rather vague about what this would measure though. There have been
some empirical studies done on reader response to canonical literature, but I’m not sure they’d
work as a model, and we are certainly not trained in how to do it.

I’ll close by bringing my last questions to a more general problem of interdisciplinary study. How
might a poet, a cultural psychologist, and a literary critic together compose a research project that
addresses the questions we’ve raised above? Can artistic production, empirical, theory-driven, and
rhetorical analyses cohere around the "ecological correlates of consciousness”? Would such
coherence merely be thematic, or could we actually formulate an investigative strategy that
incorporates those diverse forms of inquiry?

Anna Neill Works cited

Return to Table of Contents


Anna Neill Works Cited


Return to discussion