Those Dumb Artists

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Amnesiacs, Artists, and Other Idiots

Henry Molaison, aged eighty-two, died at the end of 2008, and just after noon on exactly the first anniversary of his death, December 2, 2009, scientists began slicing his brain into 2,500 tissue samples. Known primarily in his lifetime as only H.M., he left his brain to science so that it could be dissected and digitally mapped – a gift much beloved by many scientists. An amnesiac in life, H.M. first rose to prominence in 1962 when Dr. Brenda Milner, a pioneer in the field of neuropsychology, demonstrated that though H.M. was severely amnesic and could not remember past activities, he could nevertheless learn certain habits. The experiment involved the now famous mirror drawing, which tests hand-eye coordination, and can be learned over a number of days. Though H.M. had no conscious memory of having had done it before, his performance improved: he learned how to trace the image in the mirror reflection. Amnesiacs do well on mirror drawing, which is a kind of perceptual skill that in turn is a kind of motor skill – a type of skill dependent on brain structures distinct from declarative memory e.g., that memory system that allows us to consciously recall an event or fact. As an amnesiac, his declarative memory system – the part of his brain that could consciously remember – had been damaged. But as the 1962 study of H.M. showed that he could increase his hand-eye coordination on the mirror drawing, even though he was unable to have any memory of having practiced this task, it also showed that there was another memory system in the brain. In other words, he could remember to do something but not recall his doing of it. He didn't know that he knew.

Artists are often stereotyped as inarticulate – connected to their muse but not to their grammar. The image of the inarticulate artist, caught in the bowels of emotionalism and compulsions, finds a home not only in the shorthand of Hollywood thinking and the therefore easily portrayed van Gogh, Pollock, or Picasso, but also in the more nuanced experiences of art writers, curators, and museum directors who have had the often repeated experience of listening to an artist's inarticulate and overly vague description of his or her work or the compensating opposite of a neatly packaged and overly slick byline-type explanation gleaned from memorizing what others have said about the work. These experiences buttress the opinion often heard that artists simply don't know what they are doing; that is best left up to others to articulate. Hence, curators and critics still have jobs.

There is though a continuing belief that artists *ought* to be able to discuss their own work and artists' training often involves a requirement for the art student to write about his or her work, especially in professional graduate programs….

…it is routinely noted that the very same art students who have difficulty writing about their own art are quite often very articulate about other art students' work…It is often just passed off as a difference resulting from a lack of practice, and hence art students are encouraged to write more about their own work. But why would art students have less practice in discussing their own work than in discussing others' work? An art student has surely spent more time involved in his or her own work and has had more thoughts directed to that process than thoughts expressed in group critiques of other students' work. The explanation must be elsewhere.

The challenge involved in artists discussing their own work travels beyond the ivory tower, as well. In similar fashion, professional artists routinely discuss work they've seen in galleries and can do so with great fluency often in contradistinction to the explanation they might give

of their own work, except that differently from students, they often have gravitated to the overly-practiced byline explanation. Given that there is a bifurcation between the way an artist speaks of his or her own work and the way an artist is able to speak of others' work – in that way functioning more like a critic – the question is why. The fact that there is a difference is a point upon which practitioners in the field readily agree, but the disjunct between the inability of an artist to discuss his or her own work and that same artist's ability to discuss the work of others is rarely highlighted or analyzed…

A Structural Analysis of Knowing

An alternative explanation and one embraced here would be a neurological one: to be "too close" to the information can be explained through a structural analysis of the heterogeneous functions of the brain's memory systems. This is therefore a structural analysis of how art is made, or more precisely, how art is thought.

It is the "thought" part that is essential. An explication of the process of making art – the phenomenon of the creative act, as it were – has elided many writers and philosophers who have been summoned to the challenge of articulating exactly what it is that the artist is doing and how the creative act comes to be. The process at first glance though seems relatively simple. An artist begins to work. Brushes and paints are set up (limiting the example to a visual artist – a conventional painter), the size of canvas has been decided upon, constructed, and primed; the process begins.

But the process had already begun long before that. This physical act is not the beginning. The artist has already engaged in a long period of training, as well as having some existing notion of what is to be created in the present case. It is normally only the second of these facts that are focused on when discussing the so-called mystery of the creative act. But the

first part is perhaps more important because that embeds the roles of memory and habit formation, essential components for creative activity. Together, these two antecedent facts are at the heart of this paper – an articulation of the mental processes behind an artist's creation.

Two Memory Systems

The beginning then is fairly straight-forward: it is not the singular fact that artists are odd, but the more general fact that the human brain is extraordinarily complex. This is especially true when it comes to learning and memory systems. Neuroscience and neuropsychology have developed over the course of the last few decades a systematic view of the brain's memory systems, in which there are cleaved two basic systems: the declarative and the nondeclarative. These correspond to certain physical regions of the brain, with each of these regions further subdivided both in terms of the physiological structures and in terms of functional roles. The declarative memory system is located in an interaction between the large physiological regions identified as the medial-temporal/diencephalic region and parts of the neocortical region – that part of the human brain other mammals would be jealous of if only they knew. The nondeclarative memory system resides in the basal ganglia, which is located deep within the hemispheres of the brain and the cerebellum, which itself is directly above the brain stem. Declarative memory encompasses both semantic memory, which is the ability to name and identify third-person objects and events, and episodic memory, which is those memories each of us have contextualized in time and therefore more first-person e.g., what I ate for dinner last night, what I was wearing when I got married, etc. Episodic memory involves participation of brain systems in addition to those that support the semantic, particularly the amygdala, which registers emotional events – obviously important in first-

person memories; the episodic memory system is also that part of the brain that encodes previous experiences of third-person objects (which is why those childhood hills seemed so very huge). Nondeclarative memory, on the other hand, encompasses skill learning (also thought of a procedural memory e.g., swinging a golf club, playing a piano, etc.), repetition priming (the larger category also including perceptual learning, of which mirror writing is an instance), and classical conditioning (often thought of as stimulus-response kind of pavlovian learning and also sometimes involving the amygdala). These two memory systems also divide along the explicit/implicit line, with declarative obviously being explicit memory and nondeclarative memory, which is very often implicit. The relationship to language is critical, as anything implicit usually does not have access to language (or the other way around) since only some explicit i.e., declarative, things do have such access.

The argument we are presenting is that making art and thinking about one's own art involves the use of memory systems not activated in the alternate circumstance of critically discussing another artist's work. In the latter, the object is accessed similarly (though not quite identically) to other third-person objects, such as a table, a fork, or a mountain. Making art and therefore retrieving those memories of making one's own art involves other parts of the brain that might not be as accessible to semantic and declarative memory and hence to language.

Amnesiacs and Medial Temporal Lobe Damage

The analogy brought to bear by amnesiacs is to be considered initially. Amnesiacs suffer damage to the medial temporal lobe or midline diencephalon, which is the locale for episodic

declarative memory, but they do have access to nondeclarative memory. Working from analogy, if we begin with the established fact that amnesiacs do not have access to declarative episodic memory but can access nondeclarative memory, it is then possible to conceptually frame the issue in a way that divides the ability to remember nondeclarative things from the ability to know – declaratively – that one is remembering something, either a first person or a third person fact. This might then parallel the disjunct between the artist's ability to make something and the ability to know and articulate what one has made, if it can be shown that functions operating in the nondeclarative systems need not fully translate themselves into the declarative mode.

Amnesiacs also show other kinds of nondeclarative memory functions, such as the ability to prime. Priming is when they have been shown a word or image and then at a later date tested on that knowledge, for example, when they are directed to use a particular word to form the first word that comes to mind, and though they have been given that association in the past and are therefore biased by previous exposures, they do not declaratively remember though they implicitly remember. In this, the point is that "memory" in the ordinary usage of the term is absent: the patients cannot remember the word recently given to them. But when asked for quick associations they perform more adequately, indicating that they are drawing on other kinds of memory storage systems...

…In theory then it is possible to know (using the word in the way that means implicitly knowing) some kind of perceptual or motor processes but not have linguistic access to it. So while the medial temporal lobe does in the usual case store accessible memories of this kind of visual learning that can then be reformulated as semantic thought in a normal person, the medial temporal lobe obviously doesn't control all learning per se. Perceptual and motor

learning is done somewhere else, - (or at least it can in some instances be done somewhere else, as it is possible that only in the instance where the medial temporal lobe is damaged does the nondeclarative memory compensate) – and the mind is able to retrieve that learning and act on it, but it cannot easily share it with others; it cannot be translated into language as it is no longer accessible to the declarative part of the brain.

Like perceptual memory, procedural memory too can continue to function in patients who have undergone surgical removal of the medial temporal lobes (Budson, 696). Procedural memory survives independent of episodic memory and semantic memory as demonstrated not only by amnesiacs who suffer from damage to the medial temporal lobes (which includes both the hippocampus and parahippocampus), but it is also the case that procedural memory functions survive in patients with alcoholic Korsakoff's syndrome that are amnesiac because of damage to the diencephalon. These procedural skills, exemplified in such activities as playing music or swinging a golf club, are dependent upon both the cerebellum region and the supplementary motor area along with the striatum (a part of the basal ganglia), thus like mirror-writing and priming…

This establishes the fact that at least these nondeclarative memory systems are able to function in the absence of declarative memory function…

If it is true that the memories are revealed through reactivation of the systems and it is clear that in amnesiacs there is no functioning memory in the episodic declarative area, then it seems to be the case that in healthy persons, who are able to both do the assigned tasks and know that they have done the assigned tasks, must be storing two different sets of related memories; it indicates that the healthy person has both the nondeclarative and the declarative

memory systems operating for this particular task. In other words, for a healthy person the memory is stored in two places – one for their own private use, so to speak, that can be called upon to actually do the task and is therefore is activated when they need to put the knowledge to use (on analogy with the amnesia patient) and one that is in use when the knowledge of the task is shared, literally with others. The latter instance would be needed for those times when the activity is codified in language and articulated to others. But it wouldn't be needed otherwise.

Damage to the Basal Ganglia

Where patients with damage to the medial temporal lobe reveal the workings of implicit memory, the obverse situation is revealed in studies done with subjects suffering from Parkinson's and Huntington's. These patients suffer from damage to the organic parts of the brain that affect the nondeclarative memory system, i.e., the basal ganglia. The separate input areas of the basal ganglia most relevant for habit learning are the caudate nucleus and the putamen, along with the globus pallidus and the claustrum. By the late 1970s neurologists had refined the terminology and the basal ganglia was divided into the ventral striatum and the dorsal striatum. Of course this part of the brain like all parts of the brain does not operate in isolation and the basal ganglia receives inputs from all regions of the cerebral cortex. Spines on neurons conduct, via neurotransmitters, information to other neurons and hence other regions of the brain. Along with the striatum, the cerebellum, sitting next to the brain stem, is involved in procedural memory formation. The neural networks that connect these sites to each other and to the cognitive apparatus found in the neocortex are critical for the planning and monitoring of behavior.

The basal ganglia was long associated with motor control, and diseases of the basal ganglia such as Parkinson's and Huntington's highlight these functions. But the basal ganglia is now thought to be associated with certain kinds of learning as well…Thus recent research has also shown that a part of the basal ganglia, specifically the dorsal striatum, is involved in learning and memory, in particular the kind of learning associated with stimulus-response.

A fascinating function of basal ganglia in habit formation is the role of probabilistic learning. Various tasks have tried to gauge the role of the basal ganglia in probability reasoning, the most famous of which is the weather prediction game (established in the mid 1990s at Rutgers University)…. The results of this test again establish that the basal ganglia is the seat of the nondeclarative memory, whereas episodic declarative memory is found in the medial temporal lobes.

…The brain can inductively decipher the pattern, and react appropriately to that pattern, and yet the conscious, declarative part of the brain is unaware of it. Again, amnesiac patients, who suffer from damage to the medial temporal lobe/hippocampal system, show no diminished ability to perform this task, also thereby demonstrating that the part of the brain that memorizes inductive patterns and uses those inductive patterns in habit formation is in tact…

The Two Memory Systems: War and Peace

Of course the two parts of the brain – the medial temporal lobe and the basal ganglia – are not wholly cordoned off from one another. The relationship between the various memory systems has also been a source of recent research and again is pertinent to present purposes. Several different neural pathways have been found traveling between the basal ganglia and the medial temporal lobe, such as output projections to frontal cortical regions, which then in turn project to the medial temporal lobe (Packard 2002, 583).

The details of the relationship between the various parts of the brain are of course revealed in knowledge of the molecular level. The basal ganglia receives input in the spiny neurons found in the striatum and these spiny neurons receive convergent signals from various areas of the cerebral cortex. Using dopamine as a neurotransmitter, these spiny neurons are thought to recognize patterns of activity. Upon registering this context, the spiny neurons discharge their dopamine which is thought to disinhibit thalamocortical loops to initiate sustained activity in clusters of frontal cortical neurons (Houk, Davis, Beiser, 1995). In this way the originally detected contexts would be recognized as working memories. Repeated activation gives an increase in the efficiency of the synaptic transmission and is called long-term potentiation (LTP). This is thought to construct memory formation, and recent research has been done on exactly what kinds of transmitters are necessary for this process…the important fact for present concerns is that the existence of separate memory systems is now widely accepted. Questions currently under investigation are how these memory systems interact with one another in the functional construction and retrieval of memories.

Neuorimaging studies have corroborated the notion that memory is not a singular entity nor accomplished through a single organ, and current focus for study is the cellular mechanisms of the system as well as the relationship between the larger parts. Research involving patients with brain lesions, and in particular H.M., began the field of study, but it is neuroimaging – both positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) – that is more reliable as the behavior of memory-impaired patients with brain lesions would demonstrate not the function of the damaged brain isolated from the rest of the brain but also a brain that has compensated for that damage (Gabrieli, 1998). Some of these neuorimaging studies are particularly important for present purposes… This is important as it

points to the fact that explicitly knowing something is in inverse relationship to implicit knowledge and habit formation…

…It is conceivable that the making of art does not have to be data that is stored in both memory systems. But as declarative memory is both semantic and episodic, (the latter relies on some of the same structures as does the semantic memory system plus the frontal lobe) then the claim that speaking about one's work is inaccessible to declarative memory must then also entail a claim that memory about (or conscious knowledge of) an artist's own work is not stored in *either* the semantic nor the episodic memory system. This would be the logical conclusion but it is counter-intuitive. We intuitively think of making artwork as just that kind of activity that one locates as those "personal experiences framed in our own context" i.e. episodic. If that is true and if making one's art is just like remembering other first person events, then it would not make sense to claim that the experience of making one's own work would be less accessible to verbalizing than would be others' artwork. In other words, my art seems like my art, which can't be that different from my birthday. Or is it?

It makes sense to conceptualize this as a system of interdependent signals. It is known that memory systems operate in parallel and independently, sometimes working parallel to support one another. In these instances they seem to replicate each other and reinforce a memory as when a fear of heights (in the nondeclarative memory system) is coupled with the specific memory of falling off the porch as a small child (in the declarative memory system).

But there are also competing situations where multiple systems are operating such as when, to again quote Squire, "…humans acquire a difficult habit learning task, structures important for habit learning and structure important for memorizing (i.e., declarative memory)

can appear to compete for control of performance" (Squire 174). Recent research by Poldrack and Packard points to some instance of competition among systems, but in the example provided earlier, in the early phase of learning the difficult task, fMRI showed the activity in the medial temporal lobe, a pattern found if subjects were attempting to memorize the task, but as their performance improved, the fMRI activity decreased in the medial temporal lobe but the activity in the neostriatum increased. In other words, the activity increased in the area of the brain that controls habit formation. Thus, these two brain functions related inversely in the activity of learning a difficult new task. This could indicate, as Squire would want to argue, that the two parts of the brain are competing with one another. But it could also indicate a kind of evolutionarily devised cooperation among mutually symbiotic systems, as it could though also be the case that both functions are necessary in order to satisfactorily learn the new task – both memorizing the data in the immediate short-run and committing that data to a habit formed system, for purposes of easier retention. In this interpretation the system would be set up to optimize the different kinds of memory dependent on the task at hand. In that scenario, the memories are not primarily stored in the declarative system, however episodic the origins of those memories might be. In other words, it would not be just like one's birthday…

…It is also worth noting that research comparing the ways humans learn pattern discrimination differently from monkeys shows that the same thing can be learned differently: the monkeys seem to learn it by depending on the temporal lobe – neostraital pathway i.e., the procedural memory system, whereas humans learn it as a kind of memorization using the medial temporal lobe i.e., the semantic memory system. But, Squire notes, "To achieve a two-choice discrimination task for humans that is an acquired skill, and in the way that monkeys

learn the pattern discrimination task, one might ask humans to learn to discriminate between the paintings of a master and the paintings of a talented forger" (Squire 174). Procedural memory is important in the kind of feedback and gradual learning system that seems reflective of the process of learning how to distinguish the subtleties that differentiate the original painting from the fake. It seems clear that procedural memory would also be involved in functioning as a critic (in addition to the obvious main role of semantic memory), in that critics might learn pattern discrimination in the experience of learning to see the difference between the fake and the real, but it might very well also be true that that critic would be unable to explain to someone else exactly why – in every detail – the fake was distinguishable from the real.

The Amygdala's Role in Emotional Memories: The Gist

None of this discussion though has touched upon a very important aspect of the brain: the amygdala. Nominally a part of the declarative memory system, the amygdala is near the hippocampal formation, and stores highly emotional memories, such as instances of fear, and matures in small children sooner than the hippocampal memory system (LeDoux, 1996, 202), which explains why children cannot retain explicit memories and yet will have phobias that result from early childhood events. A stimulus that reminds the brain of the earlier experience will thus be experienced both in the hippocampal memory system - in declarative memory – and in the implicit memory system controlled by the amygdale. In this instance the two memory systems meet and the product is the profound and emotionally intense re-experience.

Recent studies have demonstrated that amygdala damage impairs the brain's ability to retain the emotional gist of an event (Adolphs, Tranel & Buchanan, 2005, 512). Patients with damage to their amygdala showed no enhanced memory when experiencing something under an emotionally encoding experience (e.g., a picture of parents in a car traveling down the road versus the same picture with the explanation that they are on the way to retrieve the remains of their children who died in a plane crash)…in healthy subjects, the experience of viewing a photograph of parents on the way to retrieve the remains of their dead children would be startling and horrifying enough to "register" on their brains: their memories would be seared into them. It is probably what Plato was trying to articulate when he gave the metaphor of a wax imprint for memory; certain things leave their mark. But this is not the case with in people with damage to their amygdala.

Furthermore, these memories when stored in the amygdala are encoded primarily for their "gist" – their overall feel, the generalized emotional response that they elicit, rather than for the details of the event. This is a crucial point. Subjects with amygdala damage showed worse gist memory under emotionally encoding experiences rather than under neutral encoding experiences…In addition, the amygdala can affect both medial temporal lobe structures during the encoding of a memory as well as participating in fear conditioning independently of the hippocampus. There is also evidence that it has a limited role in declarative memory (Gabrieli, 1998, 92), and in its relationship to the hippocampus it is bidirectional as it both influences and is influenced by the hippocampus, thus making the amygdala crucial in its role in various memory systems (Adolphs, Tranel & Buchanan, 2005, 516).

Memory is in a labile state when it is first acquired. Neurotransmitters, such as acetylcholine, dopamine and glutamate, conduct the synaptic and cellular mechanisms, insuring either a continuation of the signals (long-term potentiation -LTP) or long-term

depression – LTD. These "up" or "down" signals convey not only discrete bits of information that determine whether the stimulus is continued or not, they create patterns as well. Thus the amygdala participates in both implicit memory formation via fear conditioning and explicit memory formation via aversive reaction to remembered negative stimuli.

To Know Yet Not Know

Two things are worth noting. The already obvious point that emotions can embed experience in a way a neutral context cannot, and that a memory must transition from its initially coded state to a more permanent one. The latter can be accomplished in two distinct ways: either through time or through sleep. "It came to me in a dream…" is perhaps more true than we used to think.

"I dream of painting and then I paint my dream", Van Gogh was quoted as saying. He was also quoted as saying, "Poetry surrounds us everywhere, but putting it on paper is, alas, not so easy as looking at it." It is easy, when viewing an artwork, to describe the lines, the colors, the shapes, the objects depicted. Van Gogh for example did quite a bit of that. It is much harder to encapsulate and translate the meaning – to put down the poetry. This is the function of a critic, and the task is quite difficult. When we look at a van Gogh what are we taking away from that experience? What does a van Gogh mean?

People are always quite moved when they stand in from of a van Gogh. It is not a cooling experience. It is about a naked, unadorned reality – the tempestuousness of everyday perceptual fact that in turn seems mildly generous and decorative but is, with a mere slight of one's head – like those hologram cards that switch between Elvis sequined and Elvis naked – immediately destabilized, and somewhat threatening in its psychedelic unfolding of the deeper

reality. Emotions broiling, thoughts unhealed. Life blazed for van Gogh, heeded by the call to its immanent decay. For him, it was always a hot fire and reality was always bare.

It is the job of philosophy to tell us what's meaningful and how exactly it is that it becomes meaningful. Philosophy breaks up into its segregated disciplines as it "cleaves the animal at the joints" (to paraphrase Aristotle): logic tells us about the syntax of our reasoning, epistemology about how we absorb knowledge, metaphysics tells us about the reality that is absorbed before it is absorbed. And aesthetics is supposed to tell us something about art.

But our recent understanding of the brain tells us that we don't always tell ourselves everything. Language constructs only those things the declarative brain has access to. And the declarative brain is not the know-it-all it pretends to be. Our reality is concatenated (to steal a word from Kant) – it is pieced together from bits of data that are formed in the process of absorption. As the data enters us we process it in ways that fundamentally constructs the form the data now takes for us – unprocessed material is unformed material. In a fundamental way, it is non-existent…The important fact now available for us is that much of what we concatenate – much of what our brain has processed and is now using – is unavailable for the declarative, language part of our brains. And yet we can be said to still "know" it. Trauma victims, for example, are not able to necessarily linguistically access the source of their trauma or even to recall it consciously, yet they "know" it. Our knowledge of how to ride a bike, or swing a golf club, is procedural knowledge held in the nondeclarative memory system and while we can be said to "know" it we cannot access that information linguistically. We need to show it to someone, not tell someone. And if quizzed on this knowledge and pressured into explaining it, we will seem to not know. We will seem stupid.

A related point was much of Wittgenstein's thesis in *The Philosophical Investigations*: inductive knowledge is powerful yet often without explicit, linguistic guiding posts. Different

parts of the brain absorb data differently, use it differently, and recall it differently. The nondeclarative memory system is dispositional, and we use it when we are embedded in that particular task, often a physical task.

Art is an activity, in part a mental one and in part a physical activity, one that is repeated over and over, until the artist develops a practice. In fact, that word "practice" is often used by artists in referring to their own art. "My practice" embeds within it one's habitual use of not only images and materials, but one's basic intent: the meaning behind one's work… Like the "gist" of an emotion known only by the amygdala, an artist's practice is that intentional and dispositional force that is not amenable to detailed description, at least by the artist. It is a "gist"; a deeply felt perspective of the world, a profoundly remembered attitude of what it means to be this distinct, physically embedded individual.

And if it is the case, as noted earlier (cf. Packard & Knowlton, 2002, 582), that explicit knowledge of an instance of caudate-dependent sequence learning can impair the acquisition of that caudate-dependent (i.e., implicit) knowledge, then there is very good reason for artists *not* articulating the detailed explanation of their work. If in fact it is true that there's an inverse relationship between certain kinds of explicit knowledge and implicit knowledge such that "…effortful retrieval of explicit knowledge can interfere with the performance of the implicitly learned…" task, then the demand for the dominance of declarative retrieval needs to be rethought. The argument would be that an artist articulating the meaning behind his or her own work would be similar to the experiments with subjects and the weather prediction task, e.g., there seems to be competition between the caudate section of the basal ganglia and the medial temporal lobe memory system. The recent fMRI study (cf. Poldrack et al. 1999) that shows a negative correlation between the activation in the declarative memory system (e.g, medial temporal lobe) and the nondeclarative memory system (e.g., the basal ganglia) points

not only to the problem artists have in articulating their own work but quite exactly to a claim for *not* demanding that.

Artists know but don't always know that they know and furthermore know that if they know they will no longer be able to have that fluid access to knowing without knowing. That can be parsed as follows. Artists often implicitly know things without explicitly knowing them, and furthermore implicitly know that if they explicitly know they will no longer be able to have access to that fluid part of the brain that implicitly knows. The medial temporal lobe will crush the basal ganglia in triumphant evolutionary zeal. The creative role of the basal ganglia – the role of procedural memory – would be undermined if it were fully translated into the declarative part of the brain. In other words, to gain explicit knowledge of something is, to some extent and in some situations, to loose it.

…art only differs from other human artifacts in that a symbol system has been embedded such that understanding the artwork involves negotiating the relationship between the sign and the thing signified. But this language – again, as Wittgenstein was correct to point out – is socially arrived at, and precludes a private language. We can look at a Pollock and agree on what it "is saying" because we agree on the use of symbols. In that it is different from the recognition of a cup, a mountain, or any other noun. Artworks encode meaning. And because they do, they have value. But for our current purposes it is important to note that the act of looking at an artwork is similar to looking at any other object in that we have not only jointly defined that object, but because the neurological process of viewing an external, empirical object is identical in each of us and involves well known processes.

But the same thing would not be true from the point of view of the artist. If the hippocampus controls memory acquisition for cognitive functions while the basal ganglia controls memory acquisition for habit formation and procedural memory, it is reasonable to

postulate that creative thinking and production involve at least both of those regions of the brain, though again, that relationship may sometimes be competitive while at other times being cooperative. Memories are stored in the brain through the cellular processes involved in the changes of synaptic strength, and the hippocampus is the source for processing memory about events and ideas. While the ability to discuss others' work (i.e., to function as a critic) would involve the articulation of facts in the world that are similar to discussing other third-person objects, the ability to make objects would stem from other sources especially the habit formation region. It takes a lot of repeated actions to form a habit; it takes a lot of making art to find one's practice – to find one's own voice. This would make those regions of the brain much more significant for the artist than for the critic.

Thus the inability of an artist to discuss his or her own work would mean that the process of making the work is stored in memories not accessible to the declarative memory system, such that it would instead be stored in the various kinds of nondeclarative memory systems including procedural, perceptual learning, and classical conditioning. We can know but we can not know that we know, or perhaps more exactly, we cannot access language to tell either ourselves or others what it is that we know. And that's ok. It is perhaps exactly the notion of which van Gogh was aware: "…putting it on paper is, alas, not so easy as looking at it."

And it is the looking at it that counts. Viewers recreate and re-experience the artist's viewpoint. I look at a van Gogh and experience the tumultuousness, the intense emotionality in the instability of the world as it transitions from ultra-saturated and ultra-ripe to almost ebullient decay. Aesthetic theories have often weakly accomplished their goal of explaining what art is doing and how it is doing it. It is perhaps partially due to the reliance on language as philosophy is of course corseted by that milieu, but it is also because aesthetics has seen art as either a material artifact easily translatable into language; an experience similar to other

physical pleasures; or a platonic transformation of beauty into fact. It is none of those things. It is the recreation in the viewer of the various parts of the artist's brain that is constituent of experience qua experience: the intense "gist" recorded in the amygdala, the procedural learning in the caudate, the habit formation along with the perceptual learning and conditioning in the larger basal ganglia, combined again with the episodic memories stored in the hippocampus and that region's role in the declarative memory system. It is experience, experienced both explicitly and implicitly. The experience of an individual, embedded in a physical body, the caretaker of memories, processer of thoughts; experience profoundly felt and deeply cared about. Whether they will find that in one of the 2,500 slices of H.M.'s brain is to only be hoped…