The Metaphor and Materiality of Layers

Daniel Anderson and Jentery Sayers
Rhetoric and the Digital Humanities (U. of Chicago P.)

Can the metaphor and materiality of layers help explain the shifting relationships between composing, the humanities, and digital culture? We can start with by substituting the basic metaphor of layers for our usual sequential representations of composing. Layers add verticality to our sense of reading and writing. Each reading performs and even generates new versions of a text accumulating over time, but representations of those readings can be collected, simultaneous, viewed through one another. And writing is layered, too, revision over revision, stratified over time. Really, the boundaries between versions are more like folds among piles of fabric or sedimentary layers in the material world (Anderson 2012), as are the boundaries between reading and writing, print and digital: the page in your hand is a physical leaf, analog but layered over countless digital products and material processes. As an artifact, this text is a composite, emerging through networked and circulating modes of production and distribution, performing what John Bryant calls "a dynamic coupling of book and computer screen" (145), a series of digital/analog/print convergences.

Figure 1 documents this essay's first such convergence, represented by a screenshot of a Vimeo channel containing some of the videos composed in concert with this essay.

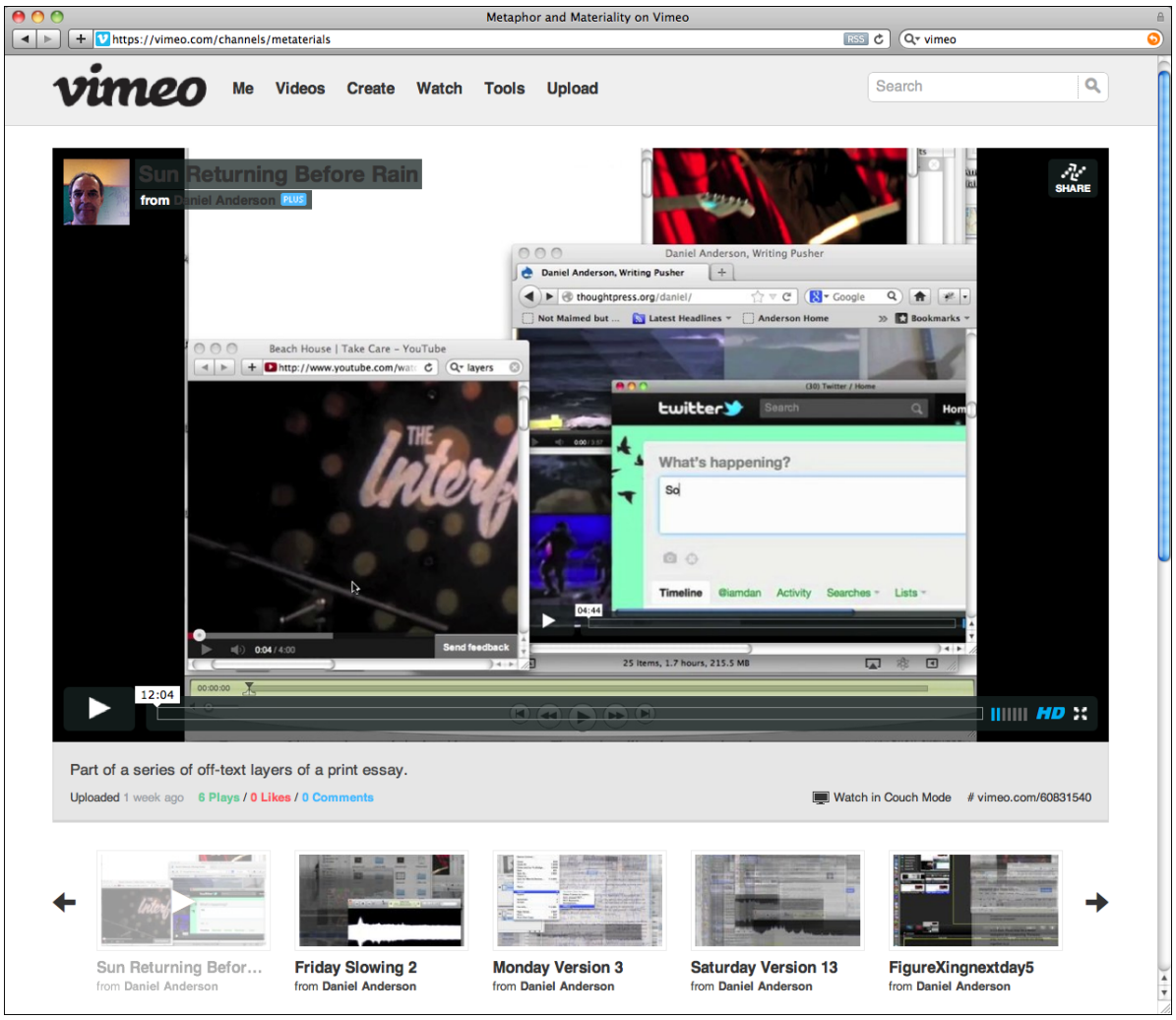


Figure 1. , Videos Composed While Writing this Essay.
Source: Daniel Anderson and Jentery Sayers (https://vimeo.com/channels/metaterials).

The Vimeo channel (https://vimeo.com/channels/metaterials) includes screencasts excavating early web materials and snapshots of the composing of this essay. These videos feature visual and sonic strategies of layering, offering an alternative mode of engaging the ideas covered here. The videos mark histories of this text, and each marking is cast from the materials of composing, artifacts crystallized as agate, quartz, whatever granular object might account for products in the world. We examine several such texts in this essay--videos, software on diskettes, essays. These artifacts and such granular thinking evoke activities like collecting, inscribing, composing. When texts are understood this way, layers become accumulations or inscriptions of objects and entities. As they unfold through time, we are reminded of ongoing and recurrent events, of seasons gathering the granules over and over like sand silting from the activity stream.

Layers evoke for composing fluid circulations accumulating in time. Examining these

processes through textual artifacts moves us toward exploring rhetorical ontologies, particularly here those of the digital, material. For our tracing here, these mappings emerge through the figure of layers and as terms like “snapshot,” “inscription,” and “commit.” Since these markings evoke processes, these texts are put into motion, each emerging from and converging with other texts and entities, calling for vocabularies of “branching” and “merging.” Layering becomes representation in space as well as fluid (and often recursive) movement through time. And at all points, it intersects knowing with doing.

“This is a record of a process of imagining what we didn't know. The imagining comes through a series of performative moves that create a double imaginative result: the discovery of a design inadequacy, and a clarification of what we had wanted but were at first unable to conceive.”

Layers elicit rhetorical and archaeological approaches featuring the materiality of composing and the historicity of processes. Rather than treating media as finalized composites consumed by audiences, we uncover artifacts through antiquarian understandings (Ernst 588-89) of making, masonry, and excavation. Wolfgang Ernst remarks: “history is not just text, but the materialist emancipation of the object from an exclusive subjection to textual analysis” (589). From an antiquarian perspective, the object is not relegated to a product of scholarly interpretation. It instead resists human access; it is other, opaque. Memories form through selection, and collections as well as histories of making are constructed through this selective imagination. A challenge, then, is to talk about the spatio-temporal dimensions of composing without rendering them natural or obvious effects of a “binding historical narrative” or teleological sequence of events (589). Perhaps layers afford such an opportunity for unpacking the discontinuities and pressure points of composing.

Composing is (dis)continuous because it is perpetual reassembly, or—as Wendy Chun suggests—an act of inventing originals after the fact (24-25). In this essay and elsewhere, all of our sources are indeed re-sources (24-25), reconstructions of historical artifacts, materials, workflows, behaviors, and practices. These objects are collected from various component parts in circuit with tactile engagement: clicking, touching, sliding, and scrolling, enacting the embodied materiality of the digital, or what Alex Reid charts as the “exteriorization of the subject or the rhizomatic distribution of compositional processes” (Reid 2007, 24)—processes that materialize through multiple modes. Not only are objects and bodies involved, but so too are affect, design practices, machine acts, and various instances of automagical compiling. These are actions and behaviors we cannot repeat or remember the same way twice. At best, we have process documentation. More often, we have repos, emulations, screengrabs, markup, code, redundancies, and 404s. All of our sources are re-sources (24-25), reconstructions of historical workflows, behaviors, and practices that we can perform again, embody, and repeat.

Through this essay, we provide a sampling of artifacts and terms that engage new media as remnants and relics of a very recent past (the early 1990s forward). To be sure, the inventory is incomplete and discontinuous, and its articulation —here—is somewhat detached from the practice of making new media. With that inevitable quibble in mind, we repeatedly point to the video collection that corresponds with the making and versioning of this very text. In fact, we push the limits of intertextuality, asking readers to see this text as layered, to commit to "the painful pleasures of fluid texts" (Bryant 2002, 147), and to at least entertain the possibility that rhetoric may be based "not on texts but on the distance between [them]" (143).

[The paragraph below is my somewhat clunky attempt at making some of the connections and stakes more explicit]

We also invite readers to consider this distance as a means of theorizing relationships among composing, the humanities, and the digital. Mapping and spatialization play out frequently as methodologies for implementing humanities work through digital modes. But textual distances articulate other layered relationships that speak to an opaque and codified materiality of disciplines and behaviors. The videos associated with this project trace attention to digital ontologies and epistemologies articulated by the two-decade old history of scholarship developed around the intersections of computers and composing. Further, our videos perform metaphors through the materiality of the screen. In effect, they animate our sketch of terms and revise our artifact texts. They are somewhat outside the analytical cold of the well critiqued text (Latour 2004), or so we think. Layering provides a metaphor for understanding the digital and the humanities in terms of disciplinarity as it invites us to imagine the levels of opacity that might be given to these artifacts and their associated long-standing articulations of the digital. These articulations foreground the transformative potentials of digital materials and modes. Giving these historical articulations more presence both offers reinforcement for similar contemporary proclamations about the digital and presents a somewhat cautionary tale. Is the long history of transformative rhetoric about the digital an indication of its continued growth and its possibilities for affecting change? Or does our current celebration belie a long history or transformative rhetoric that has been subsumed beneath layers of disciplinary materialities mostly resistant to change? Either of these possibilities speak to the need to pursue further modes that foreground less composing about and more composing through the digital.

Levels, Stacks, and Tracks

Exemplified by the interface of the contemporary image editor (e.g., Photoshop), screen-based, multimodal composing evokes a vocabulary of layers (Manovich 2001, 229). The ability to composite and separate multiple layers in a single graphics file instantiates both simultaneity and presence in software. Layers oppose sequentiality, suggesting instead the ability to frame, window-like, numerous items at the same time. As metaphor and material, the layer also casts presence as nuanced and adjustable through opacity sliders, filters, and other software

behaviors. Composing an image lets authors turn either up or down the visual presence of a layer. We imagine a kind of negative capability as we bring multiple layers together, suspending one while arranging or adjusting another, producing and performing along a spectrum that troubles distinctions between the metaphorical, the digital, and the material.

Performing with software, we work with these layers to compose, creating artifacts as layers accrue, strata-like, one after another. In Figure 2, we spatialize layers as levels in a palette, as stacks of cards, or as bundles of tracks.

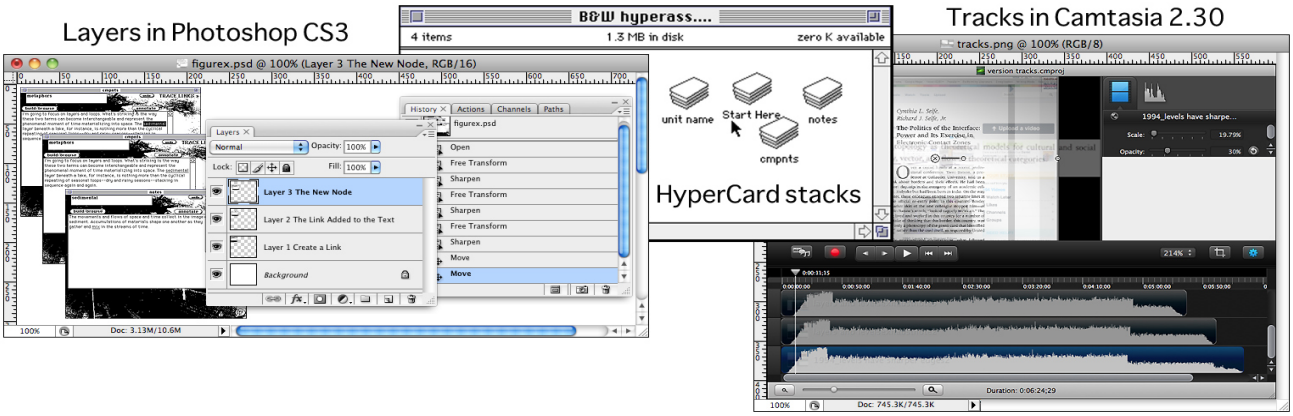


Figure 2: Layers in an Image Editor, Icons for HyperCard Stacks, and Levels in a Video Editor. Source: Daniel Anderson and Jentery Sayers.

Yet these representations are not simply spatial in character. As Niklas Luhmann notes of ontological systems, any structure or instance of stability can be temporalized, and the events or "operations of the system . . . disappear as soon as they appear, they vanish in the very process of emerging" (Luhmann 1993, 771). Elsewhere, Chun claims that memory is the primary characteristic of digital media, which compilers and software constantly refresh (154, 166). Consequently, the three modes of digital composing corresponding with Figure 2 are best understood as maps over the dynamics of making. In the HyperCard stacks we find machine and human merging through the shared language of object and event—onmouseup go next card. The image editor suggests structural strata in the levels of its layers palette—bring to front, send to back, align. And the adjacent history palette links each of those concrete levels to a set of particular machine and operator actions (Galloway 5). The video editor says space and time with its horizontal tracks stacked atop one another. It also automates the translation of this into that, of one image into the next, affording the impression of movement.

The spatial impulse is particularly visible when we excavate software from the '90s, which were rife with diagrams and e-maps affording readers and writers an indexical sense of their position within a given computational system—on what card, page, or platform. Spatialized, hypertexts can be layered nodes, stacked, or flattened into treelike or rhizomatic networks (Deleuze and Guattari 1987), as in figure 3.

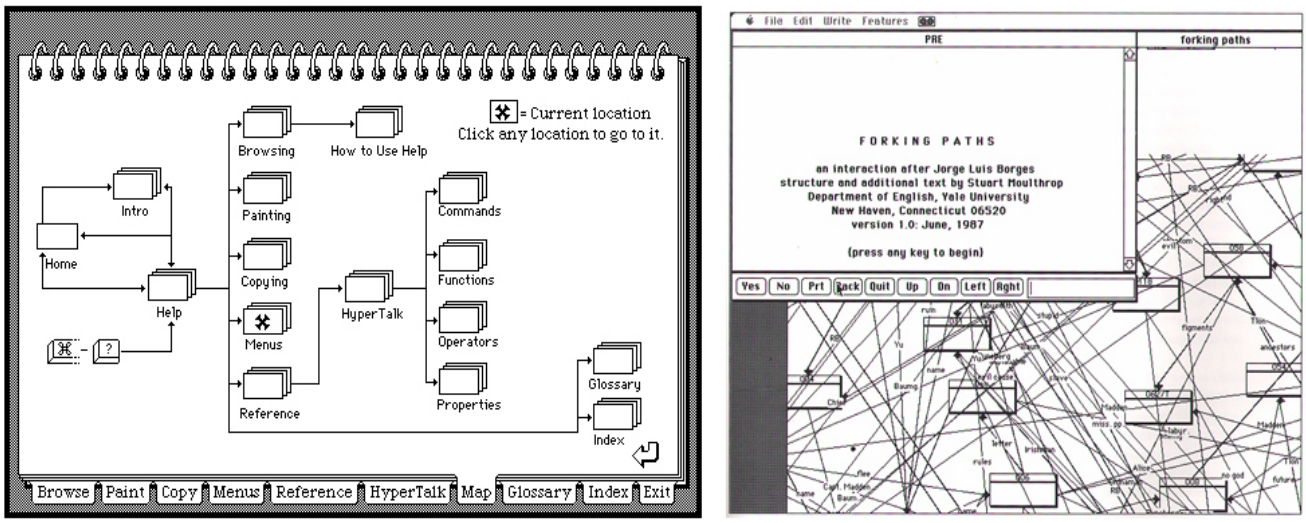


Figure 3. Maps Showing Spatializations of Hypertexts.
Source: Laboratory for Automation Psychology and Decision Processes (http://lap.umd.edu/poms/chapter4/fig4-10.gif) and Landow, George *Hypertext* (Baltimore: Johns Hopkins University Press, 1992), 111.

The spatial impulse (before and after the ’90s) often corresponds with information management and arrangement, whereby people steer (hence “cyber”space) information as they are situated by and within a larger system. For Geoffrey Bowker and Susan Leigh Star, such systems appear whole or complete, though typically premised on mutually exclusive categories abiding by ostensibly consistent classificatory principles (11). Although they are individuated and chunked, the categories relate, overlap, and even cohere. And they are often naturalized (or rendered invisible) through file formats, operating systems, and metadata initiatives, enabling habits in composition, continuity across screens, consistency of design, and interoperability through standardization. The visualizations in Figure 3 might seem homogenous or flat, a flatness Bowker and Star would no doubt deem deceptive. But, comparable to library stacks, layers on a screen are expressed through deep sets of relations (e.g., between people, files, hard drives, and memory chips) and complex navigational and operational features (e.g., “Browse,” “Copy,” and “Map” tabs) that invite embodied actions such as discovery, annotation, illustration, sampling, and comparing (Unsworth). More than anything else, flatness corresponds with convenience, an interface that enables the collapse of distance and the illusion of immaterial behavior (Kirschenbaum 11).

These deep sets of relations and navigational features—not to mention their infrastructures and conventions —facilitate and shape acts of making without necessarily determining them. Jamie Skye Bianco’s attention to “movements” proves insightful here. In “Composing and Compositing,” Bianco understands movements as “a way to rethink theoretical and critical approaches to studies of contemporary digital and analogue cultural production,” (Bianco 2007) a metaphor that accounts for levels, nodes, or tracks since “each is particular but

all are in a circuit of movement and speed relative to the constellation of objects and streams in the field." For Bianco, the products and processes associated with layered artifacts evoke digital composing across time and space, sparking an exponential (and even excessive) growth of making and expression. One implication of this growth is that layers are difficult and arguably impossible to isolate. As re-sources, they are constantly slipping away and proliferating as new compositions surface. They are simultaneously at hand and receding, bound and fluid.

If stacks, cards, and verticle metaphors suggest arrangements of materials in space, then tracks spatialize composing along both vertical and horizontal axes. While both layers and stacks necessarily engage questions of temporality (homogenous or not), tracks provide a persuasive metaphor for introducing time into our thinking about digital/analog material convergence. Echoing Brian Eno, we might say tracks give texture to new media and to composing environments (95). Pragmatically, they introduce concerns of tempo, sequence, and transition. Conceptually, they introduce what Andrew Pickering might call a performative idiom to complement the representational paradigms associated with spatialized objects. Tracks help us see that there is "a temporal pattern" to materiality (Pickering 1995, 147). However, the choice is never one of substituting a spatial scheme with a temporal or sequential model. Rather, tracks exist simultaneously as layers and sequences, implying a spatio-temporal composition. They are "material-conceptual" configurations (144) that render snippets of sound, images, and other media spatially in time. Tracks also underscore how media become, or are perceived as, dynamic objects, tweening together frames, stills, clips, and other snapshots on a motion path, which can be situated above or below other paths performing comparable behaviors.

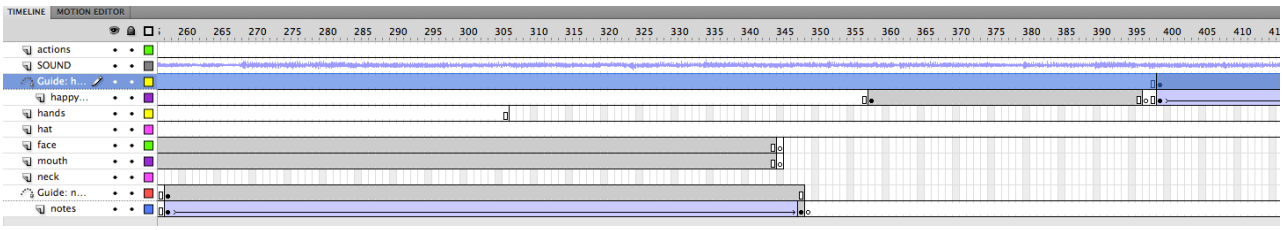


Figure 4. Layers of a Flash Media Object.
Source: Daniel Anderson and Jentery Sayers.

To afford demarcation and arrangement, tracks are frequently labelled, numbered, and color-coded in a timeline. Such description allows authors to remember what each track does in a particular composition, especially when accumulating files, layers, and edits facilitate a forgetting so often associated with "the digital age."

Inscription

As Matthew Kirschenbaum demonstrates in *Mechanisms*, the digital is very much material, despite rhetorics and ideologies of cyberspace that suggest otherwise. The digital rots.

It decays. It degrades. Verbs like these invite us to dig through the web, not just steer or surf it. The web is at once smooth and striated. It is written to something, which is often eclipsed by the primacy or essentialism of the screen (Montfort). As such, layers cannot be reduced to the functions of software or even metaphor. They are part of a larger ecology or system, including hardware, platforms, standards, and formats. Digging into them looks past screen immersion in order to better appreciate "how this becomes that" (Fuller 85) or "at becomes through" (Lanham 1993, 5), connecting us with the "material particulars" (Kirschenbaum 2008, 36) of storage technologies and inscriptive acts. For instance, in 1992, the display and performance of the Eastgate hypermedia novel, *Uncle Buddy's Funhouse*, is neatly imbricated with the stuff of five 3.5-inch disks, a twelve-page book, two cassette tapes, a 24-centimeter box, Hypercard 2.0 (or later), 4.2 megs of free hard drive space, 2 megs or more of memory, and an Apple or Macintosh II.



Figure 5: Screengrab of *Uncle Buddy's Phantom Funhouse* and Inscribed Materials Associated with *Uncle Buddy's Phantom Funhouse*
Source: [not sure about these details] by John McDaid, care of http://nt2.uqam.ca/sites/nt2.uqam.ca/files/images/nt2-12-ce03-1024x768-uncle_buddy.jpg;

A bundle of analog, print, and digital media, *Uncle Buddy* was pitched by Eastgate as a "Tarot deck," a stack of objects involving various behaviors, playback mechanisms, modes of inscription, and fidelities. Importantly, as the novel ages, it becomes increasingly hard to access, and its behaviors become difficult to run, enact, or emulate. A layer of its composition—a cassette tape, a Hypercard file, a 3.5-inch floppy—thus asserts itself as a relic, resistant, historically contingent, material. Its conditions of storage and playback (e.g., how it was written, through what formats and platforms, and to what drive) remind us how neither new media nor digital inscriptions are magically persistent, somehow outside of time, infrastructure, and operation. In fact, through their distributed and layered instantiations, transmedia artifacts like *Uncle Buddy* remind us of the materiality of inscription and of the boundaries and objects at play in the shifting dynamics of storage and performance.

Snapshots and Commits

Of course, layers mark history. They point to something, and they allow authors to follow the (data) trails of compositional practice, even if that practice never unfolds the same way twice. Pragmatically, then, layers evoke archaeological metaphors that invite us to look back and develop tracings or maps particularly suited for the multiply instantiated lives of digital texts and writers.

Bruno Latour deploys a nice photo-metaphor for such networks, offering a "zoom effect," a "framing activity" for grasping moving entities and creating a panorama (189). The picture is the product, a momentary capture or suspension of circulating entities comparable to pausing the machine actions of a video game (Galloway 12). These pauses "provide the only occasion to see the 'whole story' as a whole" (Latour 2005, 189) and then, like a vacation snapshot receding as the family wagon pulls away from the gas station, the camera goes back into the travel bag. The pause is "added as so many new places dotting the flattened landscape we try to map" (189). As an act of framing, it is also a choice or what, in other contexts, might be called a commit.

In order to better understand the metaphor and materiality of a commit, compare this excerpt from *Git Basics* (Chacon 2209) with its corresponding visualization (Figure 7):

> Git thinks of its data more like a set of snapshots of a mini filesystem. Every time you commit, or save the state of your project in Git, it basically takes a picture of what all your files look like at that moment and stores a reference to that snapshot. To be efficient, if files have not changed, Git doesn't store the file again—just a link to the previous identical file it has already stored.

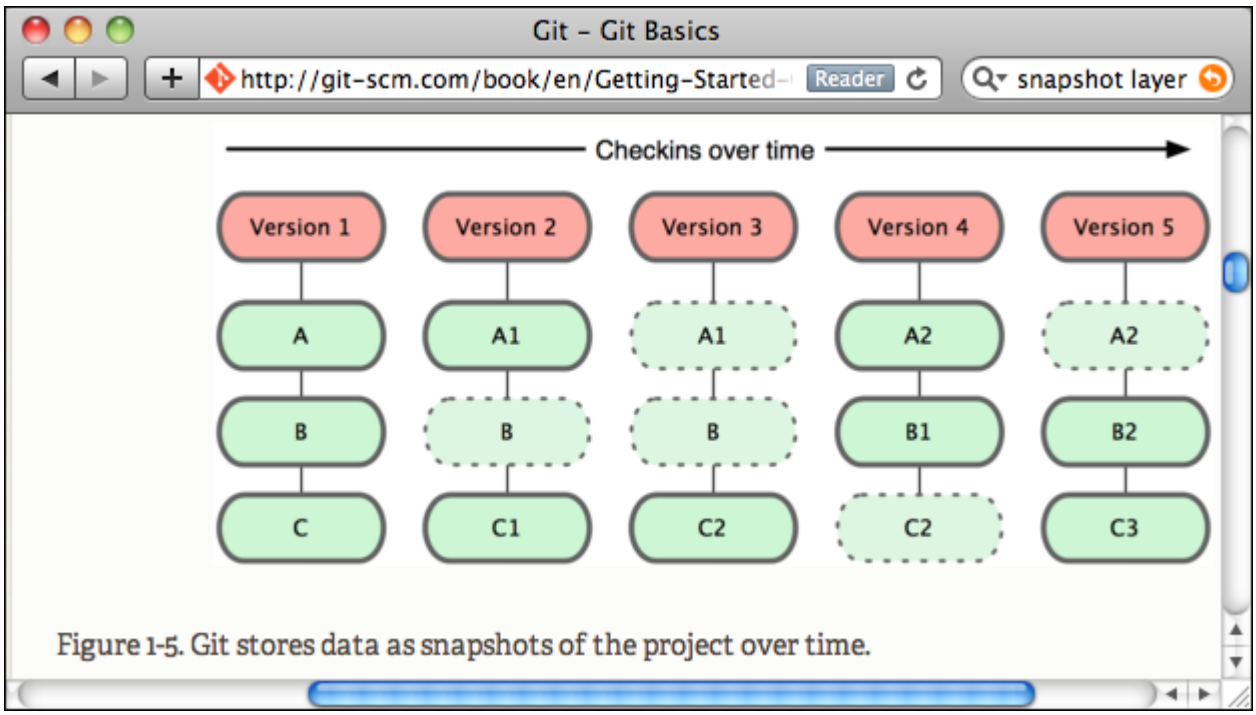


Figure 6. Image Showing How Git Stores Data as Snapshots of a Project Over Time
Source: Chacon, Scott. 2009. Git Basics. http://git-scm.com/book/en/Getting-Started- Git-Basics.

The image shows how the version control system, Git, captures the landscape of versions, files, and changes associated with any text or repository of texts. Zoomed out, the snapshot offers a panorama showing objects and traces of activity in the project's source tree. Comparable to the conventions of the Dublin Core Metadata Initiative, each commit (i.e., a state of the project) is attributed with a title, description, author, and time, which collectively communicate change to people involved (or not) in a particular project. Again, a commit is a choice—a decision by authors to momentarily pause the work they are doing, document and describe the changes they have made, and frame a given project through a particular moment. Here, the zoom effect helps us better understand how commits both metaphorically and materially capture the inscription status and change histories of texts, and how such momentary pauses are more like conscious decisions and reckonings than objective instances of frozen time. We need only zoom out another level in order to capture a new snapshot that might show an image from a book about version control software in the frame along with artifacts from the early '90s in a book about rhetoric, the humanities, and the digital.

Branching and Merging

Layers help us understand how even metaphors can have a materiality. Unlike the arboreal figure, version branching evokes simultaneity, spatially represented as akin to tracks, as in Figure 8.

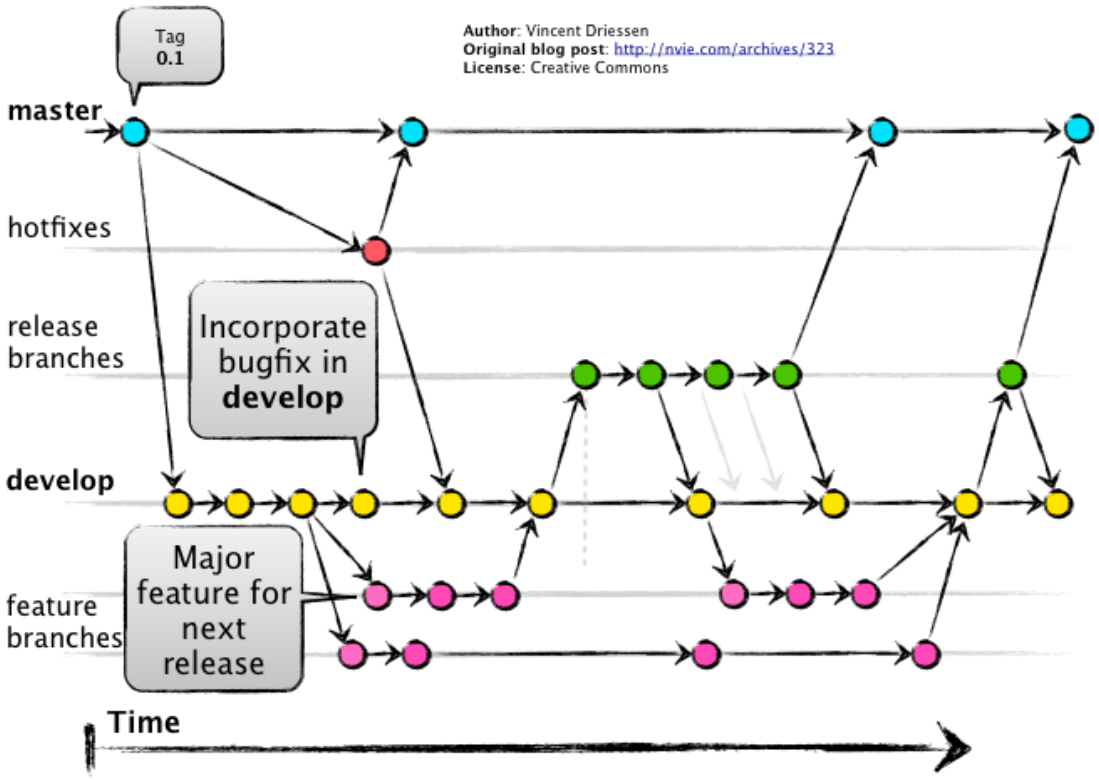


Figure 7. Representation of project with branches developed with Git version control. Source: http://nss.github.com/slides/gitflow/images/gitflow_2.png.

Of note in Figure 8 is the movement of objects (codes, files) and activities (events, coding) across the branches of the project--The bug fix, for instance, branching and then merging with the master [*sic*] and development branch. We find movements through the branches, shifting materials and energies from one level to another. In Git, a branch is a line of action, inquiry, or development. And the mediations between branches are cast from and situated within materiality, what Graham Harman sometimes describes as an ether, flowing, yet made of elements, "distinct bits, chips, beads, flakes, fragments, shards . . . [entities that] neither recede . . . nor flood us" (Harman 2005, 159). The boundaries, it seems, between branches, tracks, or layers are fluid yet distinct, linked yet discontinuous. Like audio tracks with varied volumes they offer "an endless ring of overtones beneath and above [objects]" (160), which, switching now to Ian Bogost's description, "coalesce together and recede again" (28), ultimately, at some level, withdrawn from our access. In practice "the experience of things can be characterized only by tracing the exhaust of their effects on the surrounding world and speculating about th[eir couplings]" (100).

Pictured as tracks or layers, branching and merging offer the flow of materials through time, their active presentation. Again, zooming metaphors reveal the mobius nature of these

flows. Each node in Figure 8, for instance, suggests a commit in the project, a snapshot. These inscriptions come together and recede as the project and its change history materialize over time. Here, merging calls forth the mixing metaphors of new media. In terms of layers, such merging is represented, as Manovich well describes, through the development of composites. Composites range from the particularities of stacked or merged layers in, say, a movie or image editor to mixings wrought through the elemental materiality of new media "since a typical new media object is put together from elements that come from different sources" (139). Any ~~digital~~ composition is a merging and a re-issuing. Referencing Jacques Derrida's contention that, through citational practices, "two texts are transformed, deform each other, contaminate each other's content, tend at times to reject each other, or pass elliptically one into the other and become regenerated in the repetition, along the edges of an overcast seam" (quoted in Reid 2007, 134), Alex Reid notes that even a citational merging "remarks the territory of the text and its peripheral traces and returns back upon the previous text to rewrite that as well" (135). Again, we have fluid boundaries as composites evoke composing with layers that "maintain their heterogeneity while establishing relational points between one another" (135). Even when layers are merged into composites, committing their arrangements and activities to a material inscription, "one can still uncover the edges between the grafts. . . ." (135)

Closing

Kenneth Goldsmith said John Cage said, "If something is boring after two minutes, try it for four. If still boring, then eight. Then sixteen. Then thirty-two. Eventually one discovers that it is not boring at all" (Allen 2013).

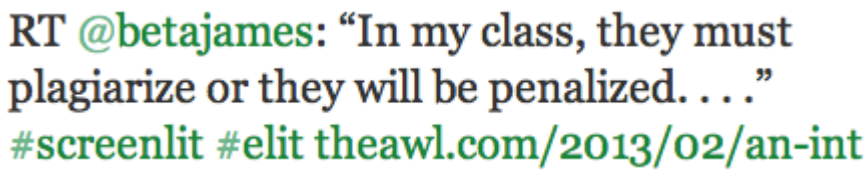


Figure 8: A tweet by @betajames Linking to an Interview with Kenneth Goldsmith
Source: James Shirmer.

These last moments in this document were composed in concert with some of the videos in the channel associated with this article. Those pieces are versions or branches of this text, and we can try to atomize and connect them, chart meanings or patterns. And we can try alternative modes of responding, spending time with words, images, sounds, rewatching, immersing, crossreading. We'll discover processes and products at every level as versions play out even in the metaphors we string together to point at the world. Layer after layer like burnt edge of leaf curling in heat magnified by glass made convex by human hand and hovering inches above the tissue of the two together receding as we zoom out. These are materials for branching and merging, for bringing together snapshots, each seedlike in their extensions that root down or in

their echoing leaves, green against a greying sky.

References

Allen, Mark. 2013. “Proudly Fraudulent: An Interview With MoMA's First Poet Laureate, Kenneth Goldsmith.” *The Awl*. http://www.theawl.com/2013/02/an-interview-with-avant-garde-poet-kenneth-goldsmith.

Anderson, Daniel. 2012. "Sediment." Last modified December 12. http://vimeo.com/55546722.

Barthes, Roland. 1991. *S/Z*. Translated by Richard Miller. New York: Noonday.

Bianco, Jamie ‘Skye.’ 2007. “FCJ-061 Composing and Compositing: Integrated Digital Writing and Academic Pedagogy.” *The Fibreculture Journal* 10. http://ten.fibreculturejournal.org/fcj-061-composing-and-compositing-integrated-digital-writing-and-academic-pedagogy.

Bogost, Ian. 2012. *Alien Phenomenology or What It’s Like to be a Thing*. Minneapolis: University of Minnesota Press.

Bolter, Jay David. 1991. *Writing Space: The Computer, Hypertext, and the History of Writing*. Hillsdale, NJ: L. Erlbaum Associates.

Bryant, John. 2002. *The Fluid Text: A Theory of Revision and Editing for Book and Screen*. Ann Arbor: University of Michigan Press.

Chacon, Scott. 2009. *Pro Git*. http://git-scm.com/book.

Deleuze, Gilles, and Félix Guattari. 1987. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. Minneapolis: University of Minnesota Press.

Derrida, Jacques. 1981. *Dissemination*. Translated by Barbara Johnson. Chicago: University of Chicago Press.

Halio, Marcia Peoples. 1990. "Student Writing: Can the Machine Maim the Message?" *Academic Computing* 4: 16-19.

Harman, Graham. 2005. *Guerilla Metaphysics*. Chicago: Open Court.

Jenkins, Henry. 2006. *Convergence Culture: Where Old and New Media Collide*. New York: New York University Press.

Kaplan, Nancy and Moulthrop, Stuart. 1993. "Seeing Through the Interface: Computers and the Future of Composition." In *The Digital Word*, edited by George P. Landow and Paul Delany, 253-270. Cambridge: MIT Press.

Kirschenbaum, Matthew. 2008. *Mechanisms: New Media and the Forensic Imagination*. Cambridge: MIT.

Landow, George. 1992. *Hypertext: The Convergence of Contemporary Critical Theory and Technology*. Baltimore: Johns Hopkins University Press.

Lanham, Richard A. 1993. *The Electronic Word: Democracy, Technology, and the Arts*. Chicago: University of Chicago Press.

Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press.

Latour, Bruno. 2004. “Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern.” *Critical Inquiry*, *30*: 225–248.

Luhman, Niklas. 1993. “Deconstruction as second-order observing.” *New Literary History* 24: 763-782.

Manovich, Lev. 2001. *The Language of New Media*. Cambridge: MIT Press.

Murray, Joddy. 2009. *Non-Discursive Rhetoric: Image and Affect in Multimodal Composition*. Albany: SUNY Press.

Pickering, Andrew. 1995. *The Mangle of Practice: Time, Agency, and Science*. Chicago: University of Chicago Press.

Reid, Alex. 2007. *The Two Virtuals: New Media and Composition*. West Lafayette: Parlor Press.