Ethics of Invention in the Digital Studio Classroom

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Abstract

Interdisciplinary scholar, writer and artist Paul Carter has established a suggested ethics of invention concerning practice-based research. An observably naturalised digital logic and materiality is forming within the creative digital studio classroom that resists Carter's ethics of invention. This shift is based around a dependence on digital modes of production, particularly industry standard software agency, as opposed to traditional combinations of both analogue and digital. For this analysis, the humble process journal, visual diary, and mood board represent inscribable analogue modes of production, with digital modes represented by the interactive screen and its connotations of standardisation.

General perspectives and ambiguities surround education and our relationship to the interactive screen. Consequently these ambiguities also surround the relationship between analogue and digital modes of production in the creative classroom. I briefly consider two contrasting examples from incompatible discursive fields to demonstrate this ambiguity, firstly, Holly Willis, new media theory, and secondly, Susan Greenfield, popular science. It is within this ambiguity that our actions in the classroom sit. It is also because of this ambiguity that I push the described classroom concern towards tension and consideration by distilling a set of relevant questions for further investigation and discourse, rather than closed answers.

Keywords: process journal, industry standard software, agency, analogue, digital, immediacy, invention, ethics, modes of production, materiality, education.

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Introduction

The digital studio classroom is becoming increasingly dependent on digital modes of production through online resources and research, industry standard production software, peripheral devices and digital storage. Students participating in external digital culture and online social networks bring additional technological perspectives to the classroom. Creative modes of production, materiality and language within such learning environments are observably shifting in response to this increasing screen based dependence.

For this classroom analysis analogue modes of production include the process journal, visual diary, and mood board, with the interactive screen and its connotations of standardisation representing digital modes. The scope of this paper is restricted to the use of inscribable analogue and digital media as modes of production, separate from, but aware of, associated analogue or digital cognitive modes (analogous reflection or processes of quantisation). Monitoring the relationship between student creative problem solving and technology raises concern when considering their broader creative methodologies. Concern and tension will be filtered through in-class observations and notions of practice-based ethics suggested by interdisciplinary scholar, writer and artist Paul Carter. I then suggest that dependence on digital modes of production is couched within a unique standardised materiality that hinders, or moves student creativity away from, Carter's ethically sustainable sense of invention. I continue, considering that this ethically sustainable sense of invention can be maintained more easily with digitally dependant students, via excursions into the materiality of analogue modes of production.

The relationship between analogue and digital modes of production in the creative classroom is surrounded by broad meta ambiguities of our relationship between education and the interactive screen. The process journal and computer scenario explored sits within this ambiguity. I will briefly and finally exemplify this ambiguity via two contextually incompatible and opposing perspectives, by Holly Willis and Susan Greenfield, on digital technologies' relationship to education. Willis provides a utopian new media theory perspective and Greenfield a dystopian popular science perspective. The purpose of using Willis and Greenfield is to demonstrate the

seemingly irreducible ambiguous distance between perspectives that our actions in the digital studio classroom are a part of, pushing my resolution towards the distillation of a set of questions for further investigation and discourse, rather than closed answers.

The humble process journal

My main argument revolves around the observed shift in the purpose and function of the traditional process journal, visual diary or mood board in the digital studio classroom. Over the last ten years I have moved from a fulltime visual arts and graphic design student into professional graphic, Web and multimedia design roles and back to the classroom as a teaching research student. In that time there has always been a personal and observable reliance on a combination of both analogue and digital modes of inscribable production. Analogue modes through hands-on material based development, and digital modes through industry standard production software. Over the last 2 years of teaching digital image making, digital storytelling and web design an observable shift is occurring. The process journal is facing extinction and its enforcement within criteria and curriculum is often met with resistance from both students and teachers.

Traditionally, the purpose of the process journal sits within the development stages of a creative endeavour or brief. It is a pre-production tool with a tangible haptic materiality, a space conducive to the progressive development of a unique and individual visual language. Within its pages there are no rules, limits or technical barriers, concepts can be sketched, content established, notes can be taken, narratives developed, textures collected, colours explored, etc. Used successfully it can also be a medium to easily communicate development to peers and supervisors. It also becomes a back catalogue of creative solutions and occasionally its content is suitable enough to be scanned and moved forward in the creative process. Feedback between the journal and screen is also useful and not uncommon, however, it is the lack of feedback between journal and screen that is problematic here. It is not until after journal processes have been engaged with, that production normally moves solely to the screen.

The process journals purpose and function as a mode of hands-on pre-production is now becoming disguised by the immediacy and ease of working on screen in conjunction with digital storage. This trend is moving students away from conceptual engagement in the development of their own visual language into an anxiety and

homogenised process of copying and mastering technique dictated by online research, digital peripherals and industry standard software. The enforcement of journal use for students resisting its possibilities often results in an obviously empty and retrospective attempt at journal use. This also reinforces the ill-conceived trivialness of journal processes. The perceived value of journal use is endangered by the ease and speedy results of immediate screen based research and industry standard software. The trend is a concern because it threatens conceptual research and suggests a blind faith in the agency of standardised tools.

I am not proposing that journal use, as described, is an autonomous answer to the concern. The main protagonist of concern, apart from online research, is 'industry standard software,' monopolised by *Adobe* in the digital studio scenario I am describing. The brilliance and possibilities of these tools cannot be denied but they are still tools handed to us preshaped by specific industry demands. Practice as research, involving such reliance or monopoly should at least be aware of this framing and the alternatives. Open source applications and creative tool development options such as Ben Fry and Casey Reas' MIT initiative, *Processing*, are digital alternatives, however, they require demanding levels of computer literacy, not a common prerequisite for the digital studio. Familiar analogue modes of production, such as the visual diary, offer a less demanding alternative that opens up processual fluidity between creative endeavours and the rigid semiotic systematics of industry standard software. There is too often a black and white desire to replace the old with new. Change can be expansion as much as it is replacement. The humble process journal can still hold value as we move forward with digital technology.

An ethics of invention

I will filter in-class observations through consideration of Melbourne based interdisciplinary scholar and artist Paul Carter. I will focus on Carter's conference proceedings paper and chapter of *Practice as Research: Approaches to Creative Arts Enquiry*, "Interest: The Ethics of Invention". What I aim to extract are ethical fundamentals of invention, conducive to fostering practice-based research, necessary in the learning environment of the digital studio classroom.

For Carter, ethics is not rigid and "does not mean the science that differentiates 'good' inventions from 'bad' ones, but refers to the custom or habit of invention."[1] A condition of invention, that is

> the state of being that allows a state of becoming to emerge – is a perception, or recognition, of the ambiguity of appearances. Invention begins when what signifies exceeds its signification – when what means one thing, or conventionally functions in one role, discloses other possibilities. The ambiguity noticed at this time is the excess of materiality that resists semiotic distillation, the supplement of matter that haunts communication. [2]

For me, the processual gap of creative problem solving in general, between a starting point—the decision to creatively engage—and an unknown end point, is what invention seems to cover here. Systematic digital modes of production inherent in the logic of the networked interactive screen exacerbate the resistance of such an unfolding of invention to occur. For students in the digital studio classroom there is an excess of digital materiality that is always already semiotically distilled. This is found in the technical materiality of learning production software, in the increasing agency of the production software itself and online research. Herein lies the problem or trap. Reliance on digital modes of production can instil an interest in students that resides in the anxiety of mastering a systematic technique or proficient finished product, not creative semiotic rupturing. This trap leads students away from Carter's portrayal of ethically-sustainable invention. He says:

> In practice-based research, ethically-sustainable invention responds, I would suggest, to three conditions. It has to describe a forming situation. It has to articulate the discursive and plastic intelligence of materials. And it has to establish the necessity of design. There is, of course, a constant feedback between these three facets of the inquiry. [3]

The three suggestions are hard to deny, they inform progression and are not reductive. My concern is maintaining student interest in such sustainability, for both their projects at hand and ongoing creative esteem. Carter's suggestions rely on modes of semiotic rupturing made difficult by systematic standardised digital production. Interrupting digital modes of creative production with, or by maintaining, analogue modes of production—the process journal—can help avoid its traps and preserve Carter's ethically-sustainable responders and research worthy semiotic rupture. This however can only come hand-in-hand with reflection on the production tool or medium in use.

Agency: Authorship as selection

The contemporary personal computer, and its relative creative production software, has shifted from being understood as a simple medium of production. Not long after its beginnings the personal computer has been understood as a medium for communication on many levels. Today it is a platform for production with unique materiality. As opposed to more hands-on traditional creative mediums or modes of production—drawing, painting, sculpture, textiles, photography, print making, musical composition etc.—the computer, especially via its use with industry standard software, has become a medium to be interacted with, not merely operated.[4] The problem with digital interaction is that it has always, to varying extents, been choreographed or designed. Within computer and production software interaction, there is always a level of pre-determined agency that the creative user, especially beginning students, should be aware of in order to reflect on their medium. Less subtle and obvious examples of software agency that stand in addition to general program characteristics include filters, pre-sets and plug-ins. New media theorist, Lev Manovich, describes production surrounding this scenario as "authorship as selection":

> What was a set of social and economic practices and conventions is now encoded in the software itself. The result is a new form of control, soft but powerful. Although software does not directly prevent its users from creating from scratch, its design on every level makes it "natural" to follow a different logic—that of selection. [5]

This process is not a new phenomenon created by production software, however as will be described bellow, increasing meta software forces are pushing authorship as selection to an observable and ethically problematic level in the digital studio classroom.

Into the digital studio classroom

The unfamiliar brick wall of inadequate technical ability can muffle interest and awareness within students that once resonated. Struggle with the technical digital realm seems to also silence reflective medium awareness escalating creative homogenisation via the anxiety to master a particular software process. Students used to digital immediacy become disheartened and creatively blocked as they face the challenge of grappling with systematic software processes at the same time as creatively solving a problem or brief. Additionally, students who are socially embedded in peer-to-peer or Web 2.0 forms of communication are more familiar with being a copy-and-paste prosumer, a combination of consumer and producer, than a

creative producer.[6] Over three years as an undergraduate teacher, I have seen the dependency on agency and appropriation increase, as younger generations born into digital copy cultures filter through my classes. Progression in dealing with concerns of systematic agency and appropriation, inclusive of traditional analogue processes, is not a desire to reductively deny technological progression by reverting back to traditional methods. It is a continued inter-reliant method, an intuitive alternative to equally important digital methods of dealing with agency and appropriation.

I am aware that each student has an individual and unique relationship with technology, however, over time general creative struggles in relation to technology have emerged. These struggles open up a space to not only increase awareness of differing modes of creative production but also an awareness of the mediums diversity, beyond the systematic software process at hand. Quantitative analysis or student feedback would be appropriate here but is outside the scope of this paper; I instead provide a general description of the classroom scenario continually experienced.

Continually observed student scenario

The student process I find myself having to interrupt, while good as a launching pad, starts with a digital mode of production. Concept development starts in Google, YouTube and Wikipedia then stops. This process steps aside from research, at least in the humanities, in that it starts with a goal or answer in mind—a term or phrase to be searched, an immediate answer expected and associated search results dictated by the application—mostly end and very little means. Students also move towards collecting media and content online rather than gathering their own. If left uninterrupted at this early stage of project progress the same methodology is carried into production software. Results carry a typical clichéd aesthetic of the software used, with little hint of semiotic rupturing containing concept, individuality or personality. For example, Photoshop can have a typical layered or crass filter based aesthetic. Many other software applications, including Illustrator, Flash, After Effects and audio applications, also have their typical results. From this classroom perspective, digital creativity falls into the trap of being purely self-referential and based on technical ability or agency, only offering the possibility of understanding the experience of the medium itself, ignoring reflection involving conceptual content, narrative and discourse. It is at this point that I sense an increasing need to instil interest in modes of production that at least make semiotic rupture more accessible.

Analogue production is obviously already present through tradition, however it is the noticeable movement away from such processes in the digital classroom that is of concern here. Students seem to struggle with their pre-existing ethics of invention when they come to steep technological learning curves in conjunction with the realisation that a computer can become a tool for creative production rather than a transparent medium to simply write, communicate, search or socialise. For more advanced students who have already come to this realisation and mastered a particular software medium, for example, Photoshop, new software still stifles progress. Those who move to first-hand analogue production are not only producing potentially usable material and content, they open up place, space and time within alternate material engagement to allow further conceptual development. Students who conjoin analogue modes of production with their software are ready to engage in discourse earlier, including reflection on their modes of production, concept and content. More often than not, outside of my own research bias in collaborative marking, they also achieve successful results.

Post-Futurist or Neo-Luddite? Outside the classroom

General perspectives and ambiguities surround education and our relationship to the interactive screen. It is because the in-class scenario I have discussed resides in this external ambiguity that I seek to push the argument towards tension through distilled questions rather than closed answers. The two examples I will describe are from relatively incompatible discursive fields. Firstly, Holly Willis is from an academic context of New Media theory couched within a utopian rhetoric concerning digital interaction, communities and education. Secondly, Susan Greenfield sits within connotations of popular science. She provides a dystopian cognitive perspective on our individual relationships to the interactive screen. The point of bringing these perspectives together is to consider a broader sense of ethics and exemplify the distance between discursive fields brought together in considering the digital studio classroom. The classroom scenario described has a tendency to slip into black and white dualistic opposites of new verses old, however, we are not only dealing with creativity and inscribable media pedagogies. There are always other associated forces that insist irreducibility whether social, cultural, political or cognitive.

Holly Willis from the University of Southern California's Institute for Multimedia Literacy in *Fibreculture*, Issue 10, "New Media, Networks and New Pedagogies"

exposes a progressive need in her paper: “Toward an Algorithmic Pedagogy.” She suggests we move forward and converge with advancing technology, not only reflecting on new media from a critical distance, but also incorporating it into teaching and research methodologies. For Willis, digital technology is now so embedded in student existence that definitions of literacy and modes of pedagogy need to be reworked:

> What if we moved beyond visual rhetoric, as well as a game-based pedagogy and the adoption of a broad range of media tools on campus, toward a pedagogy grounded fundamentally in a media ecology? Framing this investigation in terms of a media ecology allows us to take account of the multiply determining relationships wrought not just by individual media, but by the interrelationships, dependencies and symbioses that take place within the dynamic system that is today’s high-tech university.[7]

At the very least, by broadening our focus to a media ecology within course work and research, awareness of meta technological influences would be gained more easily, allowing reflection and creative production to progress proactively rather than passively. Willis continues by suggesting alternate algorithmic or digital information-based models of pedagogy in contrast to traditional models of representation, narrative and discourse. Her suggestions include code literacy and metaphoric peer-to-peer and Web 2.0 structured subjects. The idea suggests a programming prerequisite that would generate heightened computer literacy for students. This would allow for computational algorithmic independence outside of industry standard software, more aligned with the digital sketchpad *Processing* mentioned earlier. Such concepts however, are embedded in screen-based interaction, a concern itself.

Poles apart from Willis stands UK neuroscientist and media front for science, Susan Greenfield. Greenfield boldly enters philosophies of identity, subjectivity and self through her scientific understanding of the physicality and chemistry of the human brain. In a “Good Weekend”, *Sydney Morning Herald* article by John Cornwell, anticipating the Australian publication of her new book *ID: The Quest for Identity in the 21st Century*, Greenfield expresses her concerns of the consequences of the interactive screen. Interviewed by Cornwell, she states: “The brain … has plasticity: it is exquisitely malleable, and a significant alteration in our environment and behavior has real consequences.” For Greenfield, it seems that dependence on screen-based interactivity forms the consequences of “process” over “content” or “method over meaning—in mental activity.”[8] In other words, increasing usability, software agency

and game play structures, emphasises the immediacy of obtaining goals over exploring meaning and content:

> For the first time in human history, individuality could be obliterated in favour of a passive state, reacting to a flood of incoming sensations—a 'yuck' and 'wow' mentality characterized by a premium on momentary experience, as the landscape of the brain shifts into one where personalized brain connectivity is either not functional or absent altogether.[9]

The question is, what is in store for the future of creative production, education and research, inclusive of students possibly affected by this scenario? Individuality and creativity, for me, are co-requisites and any movement away from content and meaning decreases medium awareness, reflection and critical and conceptual enquiry. Greenfield's answer is that we must maintain personal narrative and first-hand experiences, "education as we know it."[10]

The condition of the human/ technology relationship, especially in the creative digital classroom, should not ignore either Greenfield's or Willis' perspectives. Yes, the conceptual and institutional distance between the two is large but hints of both have been observed and described here in a classroom context. Greenfield's concerns, perhaps overly dramatic, are as much a part of understanding media systems as Willis' suggested need to incorporate further digital literacy into curriculums. The two, in hindsight of the described digital studio classroom scenario, generate a tension and relevant questions:

1. In the creative digital studio classroom, looking beyond the job or brief at hand to fostering practice-based research, are both digital and analogue modes of production necessary?

2. Should we move forward with no consideration of the effects industry standard software imposes on creativity and research? Do we have a choice?

3. With a heightened presence of "authorship as selection" in the creative digital classroom, where is the line between appropriation and plagiarism?

4. Do standardised systematic digital modes of production maintain an ethics of invention rigorous enough for the demands of contemporary practice-based research?

Conclusion

There is an observable shift in modes of production within the digital studio classroom. This shift is the movement towards a dependence on solely digital modes of production in contrast to the traditional combination of both analogue and digital approaches. Ethics of invention in the studio classroom, as depicted from Paul Carter's perspective, is resisted by the increasing standardisation of digital materiality. The described use of the humble process journal, visual diary or mood board stands as a cornerstone for bigger questions concerning ethics of invention and utopian/ dystopian perspectives on the technology/ education relationship within the digital studio classroom.

Conference theme: How does art and design teaching foster edgy research?

Keywords: process journal, industry standard software, agency, analogue, digital, immediacy, invention, ethics, modes of production, materiality, education.

Notes

[1] Carter, Paul. "Interest: The Ethics of Invention." *Practice as Research: Approaches to Creative Arts Enquiry*. Ed. Estelle Barrett and Barbara Bolt. London, New York: I.B Tauris, 2007. 15-25. 17

[2] Ibid., 15

[3] Ibid., 21

[4] Bolter, David and Gromala, Diane. *Windows and Mirrors: Interaction Design, Digital Art and the Myth of Transparency*. Cambridge: The MIT Press, 2005. 22

[5] Manovich, Lev. *The Language of New Media*. Cambridge, Mass: MIT Press, 2001. 129

[6] Schultz, Pit. "The Producer as Power User." *Engineering Culture*. Ed. Geoff Cox and Joasia Krysa. Brooklyn: Autonomedia, 2005. 111-25.

[7] Willis, Holly. "Toward an Algorithmic Pedagogy." *Fibreculture*, 2007. 16 June 2008. http://journal.fibreculture.org/issue10/issue10_willis.html

[8] Greenfield, Susan in Cornwell, John. "Game Over." *The Sydney Morning Herald* June 14-15 2007, Weekend ed., sec. Good Weekend: 43-47. 45

[9] Ibid., 47

[10] Ibid.