Randall Teal

THINKING DESIGN:
NOTES ON PROCESS AND PEDAGOGY

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ABSTRACT

Everyone thinks. However, because thinking is a given faculty of human beings it is frequently assumed that what it means to think is clear; and this assumption leads to little attention being paid to the training of thinking itself. Consequently, thinking becomes just something we use to do other things. Gilles Deleuze suggests that this condition results from a long and problematic philosophical legacy; and that such a view of thinking as a given severely limits the real possibilities of thinking – both in terms how thinking is conceived and how it is practiced.

In this article I outline the aforementioned legacy and speculate on ways to proceed from Deleuze's provocation to think thinking directly, with the key processes of "forgetting" and "questioning" as points of focus. The result is a discussion of the efficacy of certain manners of thinking illustrated through reflections on both my own practice and examples from the design studio.

BIOGRAPHY

Randall Teal is a writer, teacher, painter and designer. His pedagogical and research interests are in design fundamentals and architectural theory with a significant influence from Continental thought. His writing focuses primarily on understanding and promoting situated dialogue between creative processes and the built environment.

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"It is because everybody naturally thinks that everybody is supposed to know implicitly what it means to think." Gilles Deleuze (1995). [1]

In *Difference and Repetition* Gilles Deleuze suggests that in attempting to avoid all objective propositions Descartes creates a problem of another sort: a presumption "that everyone knows, independently of concepts, what is meant by self, thinking and being."[2] This legacy still permeates our dealings and – in particular – distracts inquiries into, and training of, thinking itself. With a focus on making, the design studio is an environment uniquely suited for such inquiry and is thus—ideally—a perfect supplement to the conscious rationality of the thinking-I. However, simply supplementing intellectual habits with manual practices is not enough to fundamentally change thinking. Instead, one must seek opportunities to design the instrument of thought itself. One such opportunity is called pedagogy.

Pedagogy, in this light, is an explicit attempt to understand particular ways of thinking and to develop means to alter or amplify certain habits of thought. As the design of parameters, which circumscribe areas for thinking, pedagogy applies to the design of one's own thinking as much as it does the teaching of others. In fact, the two are often caught up with one another. For example, Peter Zumthor's "formless house" project, which asked students to design and communicate a house without typical architectural drawings, suggests a close link to his own inquiries into the atmospheric effects of design.[3] At the same time, just as pedagogy can be used to direct one *toward* particular ways of thinking, it can also be used

to direct one *away* from others. Here, design pedagogy can be seen to be an instrument for initiating thinking-projects.

However, the promotion of successful thinking-projects first demands reflection upon one's methods and an interrogation of one's own practices, because such inquiry allows for a better understanding of the kinds of knowledge different types of practice afford, and thus the kinds of work they can be asked to do. In design, this reflection can show the ways in which certain processes and modalities of design – ones that are quite different than, say, the sciences – can yield diverse and unique research in their own right.

In this article, I focus primarily on my research into thinking through what might be called "processes of forgetting." Although I carry these concerns into teaching, in what follows I will dwell less on attempts to teach students and more on reasons *why* one might address thinking in this way, and *what* the process of such thinking might look like. This work is carried out, in part, as theoretical research and, in part, as design research involving my own processes of painting, which supplement my theoretical pursuits. With painting playing this distinct role in my research, the paintings that are included with this article should not be taken as means of illustration or a representation of theory in my work, but as a kind of material process of thinking, a process that performs in ways that theoretical modes and methods do not and cannot. As such, the paintings are less important for what they *are* than how they *become*. It is in this way that they contribute to the inquiry into thinking itself.

BAD HABITS

"We all still need an education in thinking." Martin Heidegger (1964).[4]

The "given" notion of thinking has a deeper legacy than just that of something we all "naturally" do. This legacy begins with the recollective thinking of Plato, introduced through his concept of *anamnesis*. *Anamnesis* suggests that knowledge is something within us that must be recovered, and thus prefigures the contemporary fallacy that treats remembering *as* thinking.[5] Although many current conceptions of thought differ from this Platonic concept, the legacy of *anamnesis* is nevertheless important. As Deleuze notes: "the postulate of recognition was... a first step towards a much more general postulate of representation."[6] In short, the thinking emerging from this tradition frequently leads to the conclusion that thinking is merely the ability to recognize, recollect, and make explicit connections between objects and ideas.

This is a conclusion commonly reinforced by primary educational systems, which almost exclusively test students on rote learning. In these systems the notion of thinking as simply the path to "correct" answers not only improperly limits thinking, but also introduces another fallacy into the process of thinking: that being a good thinker means not making errors (thus neutralizing the edifying effects of failure). In these educational structures error has direct negative repercussions. For example, a low score on the SAT (Scholastic Aptitude Test) examinations in the United States generally precludes the possibility of attending certain colleges, almost regardless of the bigger picture of the individual.[7]

Such a limited view of thinking persists because of prevailing 'bad habits' practiced within the '*anamnetic*' legacy. Even so-called "design thinking," which has been touted as a kind of thinking panacea (particularly in other disciplines such as business, management and health), is deeply influenced by its representational forebears in that it still presumes a universal: thinking as common sense. Correspondingly, scenarios that leverage design thinking often simply ornament the thinking of the tradition with platitudes, such as "everyone is creative," "affirmation promotes innovation," and "collaborative production catalyses creativity." Here, design-thinking as supposedly different is really just another change of degree.

That said, it is true that the very act of designing engenders new modalities of thought, because it requires the development of new sensibilities and skills; for example, the reality that there is no single correct answer in design, automatically calls into question notions of 'error' and terms such as 'resolved'. However, even the demands of design cannot fully overcome the pervasive representational habit of thinking established by the *anamnetic* legacy. Architecture is particularly burdened with these limitations; from precedents to structural calculations architecture is a field that is laden with facts, and as such is prone to merely adapting familiar models of thinking to its needs rather than pursuing any real rethinking of thinking itself. For example, space planning, site response, structural design, and sustainability are just a few areas that are easily addressed through instrumental positivism and simple rationalizations, and thus often stand in for more holistic approaches to design. Therefore, despite the fact that there have been radical formal and procedural challenges to the process of making architecture, thinking is frequently neglected; and like the cultural milieu to which it belongs architecture too remains burdened with thinking as a kind of given, threatened by the intrusions of the same representational "correlationism" or "subjectivism" of the philosophical tradition.

This is an especially pressing issue for design instructors, whose students are frequently educated to avoid ambiguity and error and to solve problems with simple atomistic correctives.[8] Here, recollective thought's proclivity for linear connections between things is intransigent; and if the problem of linear correlationism was not enough, these direct links are ones inevitably formed by the thoughts most familiar to the thinker. Or as Henri Bergson said, intellect "instinctively selects in a given situation whatever is like something already known; it seeks this out, in order that it might apply its principle that 'like produces like.'"[9] When this occurs, recollective thinking diminishes the specific needs and opportunities of a given situation and blocks the expansion of practices and knowledge.[10] Expanding the possibilities of what can be thought first demands a robust notion of method.

METHOD

Method is often unquestioningly equated with scientific method and its use of quantifiable outcomes to ensure

repeatability and verifiability. Although this view still tends to colour prevailing understandings of method, the door to broader conceptions of method was opened by a number of mid-20th Century thinkers such as, Husserl, Heidegger and Wittgenstein. Karl Popper in particular made very direct attacks against method, arguing that falsifiability is much more important than verifiability to the reliability of scientific knowledge.[11] Even more radically, Paul Feyerabend claimed that one must not adhere to *any* method – not even falsifiability – asserting instead that the best way to achieve the thoroughness required to engage a problem properly is to be ruthless and opportunistic in the ideologies from which one draws.[12] I share sympathies with all of these figures, however, the argument that I will advance here is born from Hans Georg Gadamer and will progress by way of Deleuze.

Like the figures mentioned above Gadamer opposes the systemicity of method, as he sees the techniques used by method to eliminate error – objectivity, quantification, isolation of facts, explicit definitions, categorization, abolition of variables, linear causality – leading to procedures that exclude both complexity and that which is immeasurable in our experience of the world. In particular, Gadamer sees method obliterating the contributions that custom and tradition make to knowledge, and leading to a forgetting that events, which are temporal and situational, must be grasped with a dynamism equivalent to those events.[13] Rather than developing a system (method) for understanding, Gadamer urges building capacities (practice) for attuned response. Such capacities are meant to place the creative and the analytic on equal footing. This move is important, because often creative (speculative) thought is considered an exception, useful only when it is placed under the supervision of representational/analytic thought. This notion is reinforced by weak definitions of what it means to be "creative," in which creativity is aligned with irrationality. A truer picture of creativity begins to emerge when analytic thinking is seen to be part of creative thinking and vice versa; this occurs when is creativity is understood *to be thinking*. As Deleuze notes:

> The conditions of a true critique and a true creation are the same: the destruction of an image of thought which presupposes itself and the genesis of the act of thinking in thought itself … to think is to create –there is no other creation – but to create is first of all to engender 'thinking' in thought.[14]
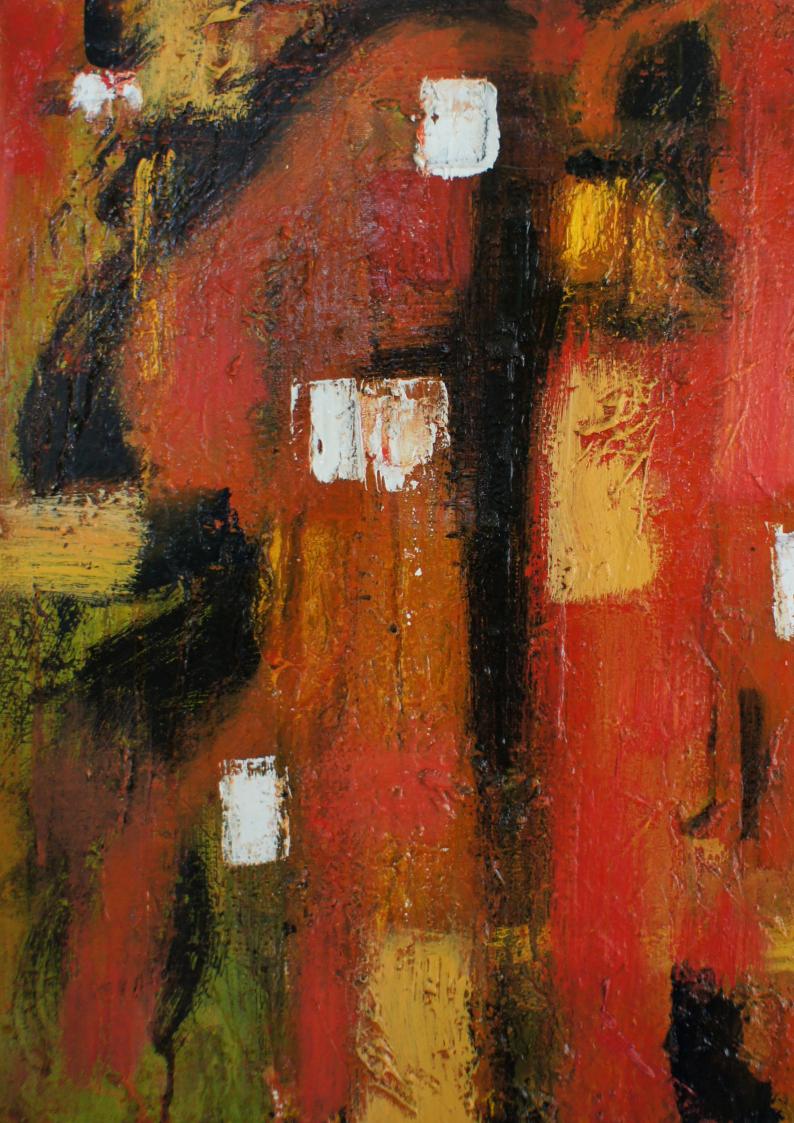
Put another way, I *need* my structural engineer to be creative, because this creativity is exactly the thing that helps him (the engineer I work with is male) imagine the problem properly, in its wholeness and vicissitudes, and allows him to respond in ways that might be unexpected yet allow everything to ultimately make sense. It is this creative basis of thinking that puts the analytic in the right place for its analysis – in the thick of the situation—thus infusing problems with the kind of creative energy that Deleuze advocates.

ACTIVATION

While Deleuze is frequently cited in architectural texts, these have tended towards using Deleuze's philosophy to reconceive space and the architectural object. Certainly in some cases, the work of Peter Eisenman or Greg Lynn for example, the application of Deleuzean concepts has been useful and revelatory to understanding new possibilities for thinking, making, and experiencing architecture. Lynn's ideas about pliancy and smoothness provide alternative means (to simple unity or collage) for addressing conditions of contradiction and multiplicity,[15] while Eisenman's pursuit of heterogeneous space opens up new sources of potency in the architectural encounter.[16] Such breakthroughs are interesting but limited, in part because, as Adrian Parr notes, "only architectural values are used."[17] Furthermore, such appropriations have tended to cover up other potentialities within Deleuzean thought. As Jennifer Bloomer has noted, architecture has used Deleuze's "complex and slippery theoretical apparatuses that work to undermine faith in the substantiality of epistemological structures" to merely authorize the architectural avant-garde.[18] In other words, there is still much that can be done in reading the specific import of Deleuze and understanding, say, his political and ethical concerns, to open up new relationships to the built environment. For example, Parr urges:

> Design thinking and practice need to become less abstract and more affective: more open to being messed up by the struggles and tensions of poverty, homelessness, dispossession, pollution, disease, illiteracy, thirst, starvation, ecosystem collapse, climate change and species extinction.[19]

Although I agree with this sentiment, I am personally more interested in another question Parr poses: "How might the practice of design thinking be part of the process of training

architects to become more socially, environmentally and economically agile?"[20] Which is to say, I am interested in the direct pursuit of agility in thinking. More specifically (as, Deleuze claims, "consciousness is essentially *reactive*"),[21] I am interested in how training such agility can help to restore the unconscious (*active*) force of thinking, and ultimately, place it in the service of architecture as a holistic proposition. To achieve this there must necessarily be a shift of focus from the architectural object to the way thinking and the built environment (which includes, but is not limited to architectural objects) implicate one another. Put differently, while Lynn and Eisenman have done much to unravel Cartesian space, I see more work to be done unravelling the Cartesian subject, the "thinking-I." Or as Simone Brott has stated, allowing the built environment agency depends upon a "renunciation of certain formal procedures that condition architecture for the subject."[22] Such an unravelling of the thinking-I can bring together the particularities of *disciplinary thought* with the inclusiveness of *interdisciplinary understanding* via creative affirmation, and lead to, as Deleuze suggests, "discovering, inventing, new possibilities of life."[23]

In order to encourage this kind of thinking it is first critical for me, pedagogically speaking, to define an area of research through which I can reflect upon the dispositions and procedures that foster different modes of thinking in my own work. From such experience and reflection it becomes possible to design pedagogy that guides (or obstructs) students both towards new ways of thinking and away from less effective habits of thought. Here, I turn to my practice of painting, which is aimed at forgetting recollective/representational thought almost exclusively, and thus forms an important facet of the thinking that informs all my pedagogy. I will refer to this facet as intensive thinking.

INTENSIVE THINKING

"It is always by means of an intensity that thought comes to us... In effect, the intensive or difference in intensity is at once both the object of the encounter and the object to which the encounter raises sensibility." Gilles Deleuze (1995).[24]

The term "intensive thinking" plays on Deleuze's notion of "intensive difference" to describe a way of working that seeks influence and inspiration, not directly or explicitly, but rather affectively and intuitively. Intensive difference

refers to the two orders of properties in thermodynamics: the intensive and extensive. Extensive properties are things like area, volume, and distance, dependent on the amount of matter present; intensive properties in contrast include things such as colour, odour, lustre, and temperature. For example, if you have a 600ml glass of water at 20°C, splitting its volume in half by putting 300ml into another glass does not divide the temperature to 10°C in each, rather both remain at 20°C. Here, the extensive division of volume does not affect the intensive property of temperature. In addition, intensive properties are unique in their morphogenetic capacities; that is, changes to intensive properties can gradually change the nature of a system. For example, pressure: air flowing from a high-pressure system to a low-pressure system generates wind, or heating water to 100°C initiates a phase change – it becomes steam.
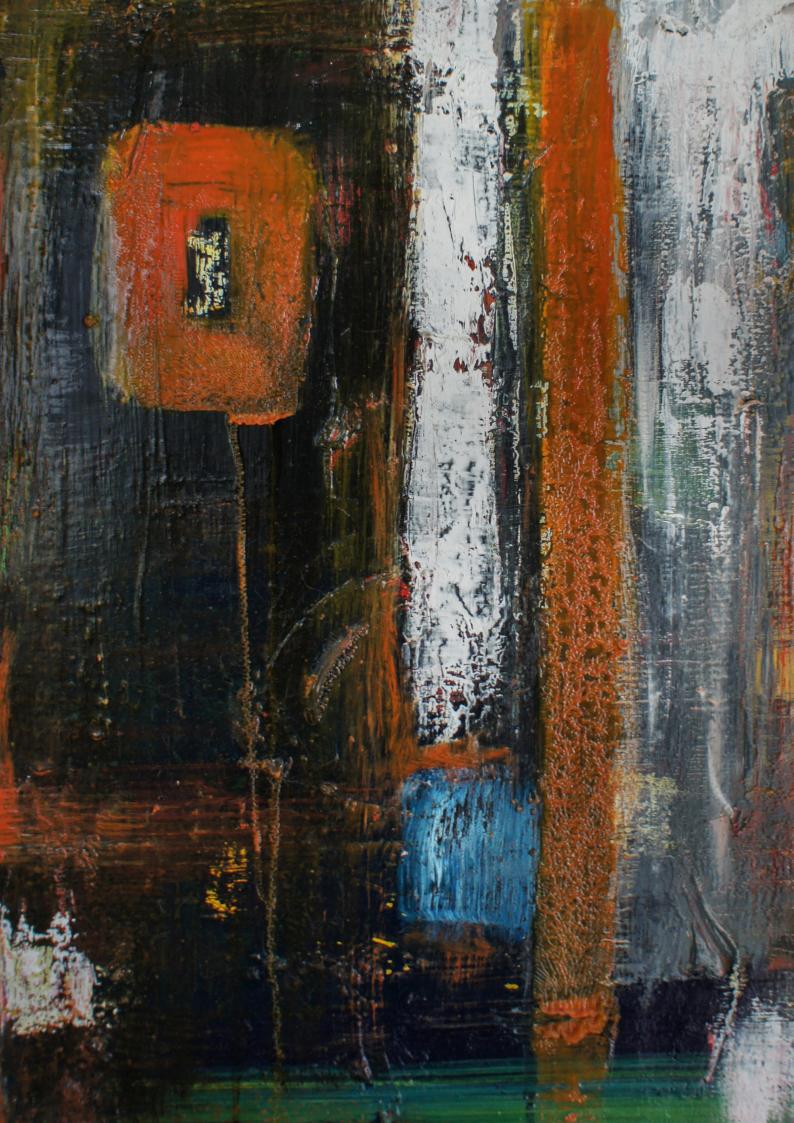
Although the intensive and extensive necessarily go together, singling out the "intensive" as a provocation to thinking is interesting as it places emphasis on an element that often eludes typical modes of thought. Deleuze states:

This element is intensity, understood as pure difference in itself, as that which is at once both imperceptible for empirical sensibility which grasps intensity only already covered or mediated by the quality to which it gives rise, and at the same time that which can be perceived only from the point of view of a transcendental sensibility which apprehends it immediately in the encounter.[25]

Importantly, in this passage Deleuze is not only describing intensity, but also indicting a type of reactive thinking that only grasps the degraded after-effects of intensities; thus, he poses a challenge to thinking itself – he is asking for a thinking that engages the intensive *as such*.

Returning to the lure of the functional requirements of architecture outlined above, the *extensive* properties of architecture are, simply, easier to think, manage and plan, and thus tend to get more attention. However, a more robust notion of architecture and design demands both the extensive and intensive be thought, which means rising to Deleuze's challenge of thinking pure intensities as well.
Thinking intensities begins with a reinvestment in the synthetic state of the creative and analytic, which is facilitated through affective understanding and communication. One example of this state is found

in the "active super-conscious faculty" Deleuze calls "forgetting."[26] Forgetting takes memory out of the realm of reactive consciousness and repositions it in the unconscious. In this way, memory becomes tacit, and in becoming tacit activates what one knows as their "tradition." Gadamer calls this knowledge "prejudice," which indicates that the normative state of being is never one of blankness, purity, or simply being 'open-minded'; there is always something already there.[27] In this context prejudice is both positive—one always has much to draw upon (this is of course what constitutes expertise)—and potentially negative in that the accumulated past can be used to suppress the unfamiliar and allow one to operate on mere habit.[28]

It is with such "prejudice" in mind that Deleuze states: "it is a mistake to think that the painter works on a white surface."[29] Put another way, since there is never "nothing" there, part of the task of forgetting is to help one sort out which "somethings" are productive and which are limiting. Here, 'cleaning' and 'defining' become sub-tasks of the greater project of forgetting:

> The painter does not have to cover a blank surface but rather would have to empty it out, clear it, clean it. He does not paint in order to reproduce on the canvas an object functioning as a model; he paints on images that are already there, in order to produce a canvas whose functioning will reverse the relations between model and copy. In short, what we have to define are all these "givens" [*données*] that are on the canvas before the painter's work begins.[30]

In other words, to "define" the "givens" does not mean to index; rather it means to "exhaust."[31] Thus, Deleuze is advocating a kind of thinking that cultivates intimacy by exhausting what directly comes to mind (the "givens"), exorcising these through productive repression and performative transformation; instead of selecting, one acts continuously until the transformations become less and less drastic, thereby removing that which does not matter. In the act of painting, the first goal of cleaning and defining is thus always to move beyond the host of immediate and conscious visions and ideas that inevitably prefigure the work. This requires a simultaneous ability to suspend judgment, or as Isabelle Stengers says, "to relieve ourselves of the sad, monotonous little critical or reflexive voice whispering that we should not accept being mystified."[32] The suspension of this voice initiates contact with the unfamiliar.

In fact, one might say that the process of forgetting means becoming unfamiliar. To this end, the process acts as a dynamic filter (as opposed to the cataloguing and selecting of a conscious mind); as a mode of working, forgetting liquidates the various strata of prejudice so that self/knowledge can more fluidly interact, react, and play. The point of all of this is to allow relevance to surface and irrelevance to disappear thus making a new familiar out of the unfamiliar. Importantly, this unfamiliar familiar must arise through (and be) the work itself. That is, it is incumbent on the "creator" to continually open to the unfamiliar, the unknown, the problematic, the unsettling in the work, because this is how the familiar finds vitality. In short, endeavouring to de-familiarize creates *new* familiarities.

Importantly, this is a process that is not temporally constrained. For example, when painting it is not uncommon for a work to complete itself almost spontaneously. These are interesting moments because they remind that cleaning, as creative forgetting, is not analogous to house cleaning; to use Deleuzean terms: one is not cleaning an *actual* mess, one is instead cleaning a *virtual* mess. And because the mess is virtual there are no spatial, material or temporal limits to the process. And, this lack of limit can also swing to the other temporal extreme.

Illustrating this other extreme, Deleuze and Guattari describe the process of 'forgetting' played out over the course of J.M.W Turner's entire career: Turner's early work appears to struggle to free itself from the weight of its influences and references, whereas his later work "turns in on itself... is pierced by a hole, a lake, a flame, a tornado, an explosion,"[33] and thus shows the effects of a lifetime of such cleaning and defining. Deleuze and Guattari go on to say of this late stage in Turner's work:

> The themes of the preceding paintings are to be found again here, their meaning changed. The canvas is truly broken, sundered by what penetrates it. All that remains is a background of gold and fog, intense, intensive, traversed in depth by what has just sundered its breadth.[34]

Here it is clear that the goal of forgetting is not to clean to the point of blankness, but to clean to the point of lucidity; one can never fully eliminate prejudice (nor would one want to). Thus, the point of forgetting is to fold influences into influences, or, as Deleuze says

elsewhere, to "determine, among these givens, which are obstacles, which are helps, or even the effects of a preparatory work."[35] In this way, "new familiarities" indicate one has been affected by the unfamiliar and has managed to assimilate it. A pithy summation of such a career of cleaning, defining, forgetting and assimilating is encapsulated by Whistler's famous retort to a question about the seemingly incomplete *Nocturne in Blue and Gold*: when asked (incredulously) if he charged two hundred guineas for two days labour Whistler responded: "No, I ask it for the knowledge I have gained in the work of a lifetime."[36]

THE DISSOLVED SELF

These examples of forgetting suggest that one can only begin with approximations and loose associations, and that it is not until one starts working that it becomes clear which prejudices are affecting the outcomes, and therefore which of these should remain; it is only at this point that new formations can occur. For me, this process begins to work when I stop seeing the painting as an object; in this state, conscious judgment ceases and the act of painting leads movements, guides stokes, and selects colours. Since the effects of cleaning and defining are not explicit or measurable, I tend to think of this process, somewhat paradoxically, as trying to work until I reach a point where there is no longer something wrong with the work – I know it is done (good?) because it is no longer bad. Although this description implies conscious judgment – there are always moments for judgment – "done" is often best realized when, as Jean Arp said, "enough of my life has flowed into its body."[37]

When this process is working it produces a radical sense of openness. Deleuze calls this state of openness the "dissolved self." The dissolved self, says Deleuze, "gives rise to an intensity which already comprehends difference in itself, the unequal in itself, and which penetrates all others, across and within multiple bodies."[38] That is, the dissolved self is the state where familiar and unfamiliar meet. In this state, one need not invent proxies, make literal associations, or resort to explanation, rather one can attend purely to the language of creative thinking; and in escaping the tyranny of the self a space of excess opens up. Here, thinking is no longer something inner nor outer, but a becoming-inseparable of the two, where "there is always another breath in my breath, another thought in my thought, another possession in what I possess, a thousand things and a thousand beings implicated in my complications."[39]

However, this 'becoming-inseparable' is not harmonious or resolved. Herein lies the paradox in the "completeness"of thought – it is a completeness that is always incomplete, on the verge of coming apart; *and this is what makes it vital.* Such an incomplete "completeness" is comparable to Jacques Rancière and Radmila Djordjevic's reading of Deleuze and Guattari's work of art that "stands on its own." They state: "the Apollonian maxim 'stand up on its own' is, rather, Dionysian hysteria."[40] In other words, the work stands not because its autonomy transcends situation, but because it exerts a force upon situation and situation returns a force upon the work. Thought too must be "Dionysian" in order to escape the stable figure of the "thinking-I."

Thus, to dissolve the self is not merely to make it peacefully go away; it is to allow something else to live inside oneself, which is necessarily unsettling. Deleuze elaborates this notion:

> That I may be other, that something else thinks in us in an aggression which is the aggression of thought, in a multiplication which is the multiplication of the body, or in a violence which is the violence of language.[41]

In short, the emergence of revelation is violent, because such emergence tests one's capacity to be affected. When working, this capacity forces a re-evaluation and revision of everything that previously seemed stable. Living such contingency does violence to one's sense of world, necessity, and self. The process of painting holds violence as it escapes intent, thus destabilizing any notion I might have of *my* creative power—to paint what I intend is a kind of failure. Instead, truly creative painting must reveal itself through a kind of rupture. It is this not-being-able-to-know that is also violent – unintended and un-anticipatable arrival can never be fulfilment, only reconciliation. However, ultimately this violence "is the joyful message," because it signals insight, progress and growth, and reflects visits to places that could never be consciously conceived or understood.[42] Some might see such a way of working as being irrational and thus unsuited to the rigours of architectural design, however, whatever it is labelled it is important to remember, as Deleuze and Guattari state: "madness need not be all breakdown. It may also be breakthrough."[43]

QUESTIONING DESIGN

Transferring such understanding to architecture depends upon forgetting. In fact, without forgetting as an integral part of design, architectural thinking is made equivalent to collecting, measuring, and reconfiguring facts. A good example of this can be seen in a typical site-based studio project. In such an exercise, students will tend to list all the pertinent information gathered on a site visit and then associate this information with design moves. Such an approach is not incorrect, but one might say it is merely correct. That is, attending to these facts as facts, solely through consciousness, only affords associations and correlations with that which is familiar – recollections. Thus, design is reduced to a kind of matching game, a process of "selecting" responses from a repository of anticipatable reactions. In this way, the designer becomes mired in a kind of positivistic arithmetic – "this" equals "that." In contrast, by utilizing performative processes of forgetting, a designer can create conditions for "pure difference in itself."[44] That is to say, by settling into a perpetual state of reaction or volatility – visiting and revisiting until one is thoroughly absorbed into the milieu – one becomes not merely aware of the facts themselves, but enacts *the relations between* the facts and feels *the force of* the facts. It is here that the unfamiliar surfaces and situational opportunities arise.

To give an example, a student was trying to integrate a glazed roof into a project in a site susceptible to heavy snow-fall. The space that was to be glazed was an interstitial zone defined by two building forms of irregular shape and containing a separate language of large roof insertions. It was immediately obvious that this situation was not one easily resolved by simply attending to the facts, because in each possible (familiar) arrangement the facts became contradictory. The way out of such a conundrum was to make the "irreducibility of contingency" operational.[45] Contingency can become operational via exhaustive questioning. However, this depends on questioning becoming "no longer merely a preliminary step that is surmounted on the way to the answer and thus to knowing; rather, questioning itself becomes the highest form of knowing."[46] Here, Heidegger is suggesting that questioning itself *is* knowledge, because effective questions open up specific regions of thinking. In this way, questioning means dwelling – with all its implications of residing – within a region (problem). The point here is the same one Simone Brott makes of architecture itself,

"when an architecture is truly inhabited, it is as if it begins to inhabit us,"[47] which points to the fact that effective questioning depends upon both asking questions *and being questioned*.[48] The latter, being questioned, activates one's capacity to be affected. It is this power of questioning to cultivate openness that caused Heidegger to refer to questioning as "the piety of thought."[49] Used in this way, questioning becomes the vehicle for creating interaction between consciousness and forgetting: consciousness poses a question, and in so doing creates a region in which one can practice forgetting. And, this occurs not by asking "what is it?" but "which one?" Or as Delueze says, "which one?" (qui) means this: what are the forces which take hold of a given thing, what is the will that possesses it?"[50] In architecture, asking "which one?" means asking a question of architectural viability and integrity by inquiring into the specific fit of an architectural idea. This begins by defining the possible via a rehearsal of attendant forces.

Returning to the question of the glazed roof: by asking not "what is it?" but "which one?" the student was able to circumscribe areas of inquiry. She did this by posing a number of possible directions for resolution, each with different priorities and problems. Thus "which one" led to the creation of clusters of architectural potential, which included: 1. Intermediate roof placed below the proposed building forms; 2. Intermediate roof eliminated by connecting the "existing" roofs of the two other building forms with day lighting achieved via skylights; 3. Intermediate roof addressed by passing one of the "existing" roofs over the other "existing" roof; and 4. Intermediate roof addressed by raising it above other building forms. Number four prompted a series of sub-questions: if the intermediate roof pops up above the other building forms does one make the pop-up a.) mimic the language of the other roof insertions, b.) call into question the other roof insertions, c.) act as an extension of one or both of the interior walls it bears upon, or d.) become an autonomous object. Finally, these specific questions raised a general question: does resolution for this new element require a fundamental rethinking (the aggression of thought) of the current building plans?

In this example, asking "which one" pushed the student deeper into the particularities of the condition, creating relevant options that could be explored via processes of forgetting. Put another way, using questions to define relevance created conditions for enacting interventions – literally *becoming* the force of the snow falling on the roof, the light coming into the space, the drainage paths

of the rainwater, the wandering visitor, and so on. And, like the process discussed in my painting, this *becoming an attendant force* is made real through the material performances of thinking as drawing.[51] In other words, one draws-through design relations and forces; or as Deleuze says, "it is not a question of our undergoing influences, but of being 'insufflations' and fluctuations or merging with them."[52] This statement is an apt summation: intensive thinking is "insufflation." That is to say it is both a *breathing in* (as in taking medication) and a *blowing upon* (as in an exorcism). This idea is deceptively simple and profoundly instructive, because it shows the thinker's role (like a simple breath) to be such a small – yet indispensible – part of the greater organism that is the work.

Intensive thinking shifts subjectivity away from the "I" towards, as Brott notes: "a general power to command arrangements, to envelop a series of aesthetic, social and other effects... [and] the phenomenon of having been selected, of an unconscious desire toward this set of effects."[53] Returning to painting, it is, for me, exactly this sense of "having been selected," that is critical and points to both the smallness and lack of ownership of the "breath." That is, neither the painting nor I are communicating specific instructions to one another – we are merely sharing the same breath. I think this is what Heidegger had in mind when he claimed, "thinking is much simpler than philosophy, yet more difficult to accomplish."[54] The state of the dissolved self is perhaps *the* most uncomplicated state one can be in, yet, unlike its material instantiations with their designs articulated in discernable lines of logic and figures of recognition, the thinking that makes such designs possible cannot be claimed as such, lest it disappear.

OPENINGS

Successful navigation of the "rationalization" (to use Weber's term) of the design academy requires designers to relinquish what Jeffrey Kipnis termed their "envy of science."[55] That is, a tendency to look to science to activate and substantiate design and design research. Instead, designers can do more to demonstrate how *design* creates its own artefacts, processes, areas of visibility and bodies of understanding that would be inaccessible through other disciplines and their incumbent methodologies. Here, intensive thinking is one concept that can help lighten the lingering historical burdens of the post-enlightenment

legacy. It can help enrich students' manners of working, and possibly help loosen the hold of rationality on "research." However, this shift depends on designers to modify Deleuze and Guattari's comment, "we paint, sculpt, compose, and write with sensations. We paint, sculpt, compose, and write sensations,"[56] by saying: We *design* with sensations. We *design* sensations. However, this requires a rethinking of the way that we think.

NOTES

1   Deleuze, Gilles. 1995. *Difference and Repitition*, trans. Paul Patton. New York: Columbia University Press, p.131.

2   Deleuze, Gilles. 1995. *Difference and Repitition*, p.129.

3   Merin, Gili. 2013. 'Peter Zumthor: Seven Personal Observations on Presence in Architecture', in *ArchDaily* [online]. Available at <http://www.archdaily.com/?p=452513> (accessed 14th June 2014).

4   Heidegger, Martin. 2010. 'The Task of Thinking', in David Ferrell Krell (ed.) *Basic Writings: Martin Heidegger.* New York: Routledge, p.392.

5   See the dialogues 'Meno' and 'Phaedo'. There is also an allusion to *anamnesis* in 'Phaedrus'.

6   Deleuze, Gilles. 1995. *Difference and Repitition*, p.138.

7   A recent study showed that high school performance habits were a stronger predictor of college success than SAT scores. Westervelt, Eric. 2014. 'College Applicants Sweat the Sats. Perhaps They Shouldn't,' *NPR* [online]. Available at <http://www.npr.org/2014/02/18/277059528/college-applicants-sweat-the-sats-perhaps-they-shouldn-t> (accessed 14th June 2014)

8   In a studio where I presented students with a brief comprised of two seemingly incompatible literary passages as the program - many students *still* went immediately to CAD and began to space-plan. In such moments, the embeddedness of instrumental thinking becomes painfully obvious. The goal in this particular project (see n.11) was to orient students to dispositions that allow them to attend to complexity, affect, and ambiguity – key features of architecture – with an equal complexity and ambiguity. In other words, it would be absurd to imagine that drawing a plan of the bullring in the *The Sun Also Rises*, as anything but the tiniest fragment of the literary moment it is part of. Architectural experience holds a similar richness, although much of that richness is temporal and contingent. It is my hope that students begin to imagine a bit of this as they work. Here, it is the conventions that many take as "doing architecture" that stand in the way of a multitude of other perspectives.

9   Bergson, Henri. 1946. 'Introduction to Metaphysics', in *The Creative Mind.* New York: The Philosophical Library, p.34.

10 As an instructor, this is a difficult tendency to counteract. Unfortunately, there are cases where design pedagogy not only does not draw students out of this habit, but instead inscribes such habits even more deeply into their psyches'. For instance, Helena Webster connects the learned passivity instilled through a transmission model of education – the instructor as the "hegemonic overlord" – to the practices of the design jury or 'crit'. She notes that despite jurors' claims to be there in support of student learning, too often these jurors treated less-able students with disdain rather than providing the support or instruction, which they so desperately needed. Such juror behaviour led, unsurprisingly, to a perception among students surveyed that the jury *was not* interested in transformative learning experiences, but rather served a more simple critical function. Importantly, and most troubling, this behaviour did teach students something: it incited a practice of submissively accepting criticism (to "be seen to" agree), and thus suppressed any earnest reflection and/or real discussionWebster, Helena. 2007. 'The Analytics of Power', in *Journal of Architectural Education,* Vol.60 No. 3 (2007), pp.21-27. And unfortunately, Webster's conclusions do not appear to be drastically different from Kathryn H. Anthony's 1987 study: Anthony, Kathryn H. 1987. 'Private Reactions to Public Criticism; Students, Faculty, and Practicing Architects State Their Views on Design Juries in Architectural Education', in *Journal of Architectural Education,* Vol.40 No.3, pp.2-11.

11 Popper, Karl. 2000. 'Science as Falsification', ed. Theodore Schick. Mountain View, CA: Mayfield Publishing Company.

12 Feyerabend, Paul. 1975. *Against Method.* London: Verso, pp.9-10.

13 Gadamer, Hans-Georg. 1975. *Truth and Method*, trans. Joel Weinsheimer and Donald G. Marshall, Second ed. New York: Continuum, pp.157, 273.

14 Deleuze, Gilles. 1995. *Difference and Repitition*, pp.139, 147.

15 Lynn, Greg. 2006. 'Architectural Curvilinearity: The Folded, the Pliant and the Supple' in *Constructing a New Agenda: Architectural Theory 1993-2009*, ed. Krista A. Sykes and K. Michael Hays. San Francisco: Chronicle Books. Kindle Edition.

16 Eisenman, Peter. 'Eisenman/Wigley X: The Problematic of Homogeneous Space,' Conversation at Columbia University, Thursday 8th August, 2013. Available at <https://www.youtube.com/watch?v=0_b5COTxHuc> (accessed 14th June 2014).

17 Parr, Adrian. 2013. 'Politics+Deleuze+Guattari+Architecture', in *Deleuze and Architecture*, ed. Hélène Frichot and Stephen Loo. Edinburgh Edinburgh University Press, p.203.

18 Bloomer, Jennifer. 1995. 'The Matter of the Cutting Edge', in *Assemblage,* No. 27, no. Tulane Papers: The Politics of Contemporary Architectural Discourse, p.108; See also Eisenman, Peter. 'Eisenman/Wigley X: The Problematic of Homogeneous Space'.

19 Parr, Adrian. 2013. 'Politics+Deleuze+Guattari+Architecture', p.208.

20 Parr, Adrian. 2013. 'Politics+Deleuze+Guattari+Architecture', p.209.

21 Deleuze, Gilles. 2006. *Nietzsche and Philosophy*, p.41.

22 Brott, Simone. 2013. 'Toward a Theory of the Architectural Subject,' p.155.

23 Deleuze, Gilles. 2006. *Nietzsche and Philosophy*, trans. Hugh Tomlinson. New York: Columbia University Press, p.101.

24 Delezue, Gilles. 1995. *Difference and Repitition*, pp.144-45.

25 Delezue, Gilles. 1995. *Difference and Repitition*, p.144.

26 Deleuze, Gilles. 2006. *Nietzsche and Philosophy*, p.113.

27 See Gadamer, Hans-George. 1975. *Truth and Method*.

28 Gadamer, Hans-George. 1975. *Truth and Method*.

29 Deleuze, Gilles. 2003. *Francis Bacon: The Logic of Sensation*, trans. Daniel W. Smith. Minneapolis: University of Minnesota Press, p.71.

30 Deleuze, Gilles. 2003. *Francis Bacon: The Logic of Sensation*, p.71.

31 See Deleuze, Gilles and Uhlmann, Anthony. 1995. 'The Exhausted', in *SubStance,* Vol. 24 No. 3, Issue 78, pp.3-28.

32 Stengers, Isabelle. 2012. 'Reclaiming Animism', in *e-flux*, No. 36 [online]. Available at <http://www.e-flux.com/journal/reclaiming-animism/> (accessed 4th June 2014)

33 Deleuze, Gilles and Guattari, Félix. 1983. *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robery Hurley, Mark Seem, and Helen Lane. Minneapolis: University of Minnesota Press, p.132.

34 Deleuze, Gilles and Guattari, Félix. 1983. *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robery Hurley, Mark Seem, and Helen Lane. Minneapolis: University of Minnesota Press, p.132.

35 Deleuze, Gilles. 2003. *Francis Bacon: The Logic of Sensation*, p.71.

36 Merrill, Linda. 1992. *A Pot of Paint: Aesthetics on Trial in Whistler V Ruskin*. Washington: Smithsonian Institution Press, p.148.

37 Arp, Jean. 1932. 'Caption from Sculpture: To Be Lost in the Forest', Tate Gallery [online]. Visible at <http://www.tate.org.uk/art/artworks/arp-sculpture-to-be-lost-in-the-forest-t04854> (accessed 14th June 2014).

38 Deleuze, Gilles. 1990. *The Logic of Sense*, ed. Constantin V. Boundas, trans. Mark Lester. New York: Columbia University Press, p.298.

39 Deleuze, Gilles. 1990. *The Logic of Sense*, p.298

40 Rancière Jacques and Djordjevic Radmila. 2004. 'Is There a Deleuzian Aesthetics?', in *Qui Parle* Spring/Summer, No. 2, p.5.

41 Deleuze, Gilles. 1990. *The Logic of Sense*, 298.

42 Deleuze, Gilles. 1990. *The Logic of Sense*, 298.

43 Deleuze, Gilles and Guattari, Félix. 1983. *Anti-Oedipus: Capitalism and Schizophrenia*, p.131.

44 Deleuze, Gilles. 1995. *Difference and Repitition*, p.144.

45 Deleuze, Gilles and Guattari, Félix. 1994. *What Is Philosophy?* trans. Janis Tomlinson and Graham Burchell. New York: Columbia University Press, p.96.

46 Heidegger, Martin. 1990. 'The Self-Assertion of the German University' in *Martin Heidegger and National Socialism*, ed. Gunther Neske and Emil Kettering. New York: Paragon House, p.3.

47 Brott, Simone. 2013. 'Toward a Theory of the Architectural Subject' in *Deleuze and Architecture*, ed. Hélène Frichot and Stephen Loo. Edinburgh: Edinburgh University Press, p.157.

48 Coyne, Richard and Snodgrass, Adrian. 2006. *Interpretation in Architecture: Design as Way of Thinking*. New York: Routledge, p.47.

49 Heidegger, Martin. 1977. 'The Question Concerning Technology', in *The Question Concerning Technology and Other Essays*. New York: Harper & Row, p.341.

50 Deleuze, Gilles. 2006. *Nietzsche and Philosophy*, p.77.

51 Here "drawing"is meant to evoke architectural media more generally.

52 Deleuze, Gilles. 1990. *The Logic of Sense*, p.298.

53 Brott, Simone. 2013. "Toward a Theory of the Architectural Subject," p.157.

54 Heidegger, Martin. 1975. "Heidegger: The End of Philosophy and the Task of Thinking." From a documentary entitled "On the Way to Thinking." Available at <http://www.youtube.com/watch?v=qouZC17_Vsg> (accessed 14th June 2014).

55 Jeffrey Kipnis, October 22, 2010. UIC SoA, Available at <https://www.youtube.com/watch?v=0cVfSkVPMiM> published 11th October, 2013; accessed 10th July, 2014.

56 Deleuze, Gilles and Guattari, Félix. 1994. *What Is Philosophy?* p.166.

FIGURES

All of the paintings included in this piece were produced by the author.

DRAWING ON ⌊⌋

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