Mechanisms of Memory and Pedagogies of Failure

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INTRODUCTION

In its Latin origins, "to fail" (*fallere*) holds two distinct movements: To trip, and to fall. To trip is to have the regular movement of our steps come up against an obstacle that stops us in our tracks; to fall is to lose contact with the ground in an uncontrolled movement away from stability. In either a trip or a fall, our progress towards our intended destination is interrupted. Perhaps in education we might consider our destination to be the successful achievement of a learning goal, or more accurately the continuing successful progress towards that goal, step by step.

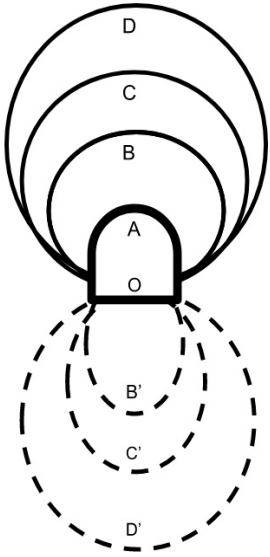
Drawing primarily from Bergson's and Deleuze's thinking on the connection between memory and perception, in this paper we consider and revaluate moments of failure in teaching; incidences when the teacher's plans go awry, when they fall out of step or don't know what to do, maybe because they lose sight of their goal or target, or perhaps because they can't see a way to reach it. In particular, we are curious about alternative ways in which teachers might respond to failure outside of the usual approaches focused on either reflection aimed at correcting mistakes or attempts to integrate these errors into regular progress towards specific goals, explaining them away. Perhaps what we are looking for is a way to recognise "failures" and "mistakes" as holding the potential to not simply offer opportunities for learning and reflection, but as more fundamental points of departure from engrained ways of enacting and understanding teaching; as forks in the path that the teacher can choose to walk down with their students, inviting them to find their way instead of knowing it, to explore rather than map. As such, failures may suspend established habits of spatial thinking, and open the possibility of a new, temporal understanding of teaching.

We begin by bringing together Bergson's thinking on perception and memory in *Matter and Memory*, with Deleuze's extensions of these ideas in his

second book on cinema. There are no doubt further expansions and perspectives on these ideas through both philosophers' work on duration, time, and memory, however this paper has concentrated on these two texts primarily. For Bergson, and later, Deleuze, memory and perception can be thought of as interrelating according to a series of circuits. Each circuit travels between the world around us and our perceptions of that world, intertwining with our memories and our dreams. What emerges is an interwoven circuitry, interrelating memory, attention, and perception, that regulates our responses to sensory stimuli. This structure serves as a stable framework that correlates with notions of teaching practice as a planned, controlled, and reflective activity. It is from this stable framework that we explore the places where it comes unravelled or tangled up in itself; using these instances to reevaluate moments in teaching practice where our plans and procedures fail.

BERGSON—AUTOMATIC AND ACQUIRED MEMORY

In *Matter and Memory,* Bergson offers us a diagram connecting our perceptions with "different circles of memory" (see Figure 1).[1] The smallest circle (A, O) draws together our perception of an object with our most immediate memory of that perception.



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The diagram shows how these curves are repeated, spreading outwards in successive circles as our engagement with the object, and our memories surrounding the object deepen. One side of the diagram traces our deepening attention through perception (B,' C,' D'), whilst the opposite side traces how these perceptions connect with the expanding levels of our memory (B, C, D). The diagram is key to Bergson's understanding of time, perception and memory, and significant to our argument here for two reasons: First, it shows how the whole of memory is included in each of the circles, in a more or less contracted state; and second, it shows how the interconnection between perception and memory is unbroken, forming circuits that draw one another into states of greater or lesser tension.[2]

Figure 1: Adapted from Bergson, H. Matter and Memory

These interconnecting circuits form the structure through which the past endures into the present according to two separate functions of memory, one automatic and the other acquired. Acquired or learned memory is constructed through repetition; an action is carried out several times in order to create "motor mechanisms" that can then be recalled and enacted as required. This acquisition of memory entails the separation of the action into parts, followed by the replication of these segments, leading gradually to the point at which the separation is no longer apparent. Eventually, the whole can be re-created from beginning to end. Bergson offers the example of learning a text by heart, where repetition of a sequence of words and sounds gradually brings about the blending of one into the next until the whole can be replicated. A recollection formed in this way has an automatic or habitual pattern, and in order to activate the memory, the passage or text must be recalled in its entirety following its original succession. Asked to repeat the third word of the second sequence, the only way to retrieve this memory is to repeat the passage from the beginning.[3] Acquired memory is the basis for what Bergson describes as "sensory-motor schema," learned patterns of movement, response and reaction that allow us to move through the tasks that daily life presents to us. These "sensory motor" responses entail a sharpening of memory, the bringing into focus of the useful section of one of

the circuits, in order that it be applied to perception in a way that facilitates a reaction.[4]

There is a regularity to this interconnecting of perception and memory in our everyday life; our perceptions and memories follow along with one another in a regular, predictable, and recognisable pattern. We might consider the ways that we plan and deliver lessons according to a scheme of work as an example of this, the routines and procedures that help our classes feel ordered, the sequences that we use to break down and explain concepts or processes. These patterns might be understood as corresponding to Dewey's "habits," which are "working adaptations of personal capacities with enviroining forces,"[5] that allow for a certain degree of predictability and regularity. This regularity is desirable; in many situations, we aim to be proficient teachers whose lessons progress in an orderly manner towards prescribed learning outcomes. Our memories, acquired through training and experience, are in this way acted out in our practice; memory "prolongs their useful effect into the present moment."[6]Acquired memory is formed through sequences of movements, activating our sensory-motor schema so that we can make an action or movement in response. This function of memory, we conclude, entails thinking in terms of physical space, distance, and measure.

The second function of memory is, Bergson states, automatic. This term feels counter-intuitive after our understanding of the automated or habitual character of acquired memory. The difference between the two, Bergson asserts, is a matter of duration. We looked at the example earlier of a passage learned by heart; a memory that is tied to movement, or a series of movements that must be repeated in sequence in order for the text to be recalled, word for word. Contrast this with a distinct memory of a particular reading of this text; the intonation, the experience of having heard it spoken on one particular occasion. Bergson describes how this "automatic" memory has no fixed duration, "I assign to it any duration I please; there is nothing to prevent my grasping the whole of it instantaneously, as in one picture."[7] The continuous accrual of memory happens without us being aware of it, and this automatic function of memory allows us to recall past events as imag-

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es, rather than as sequences associated with movements or sensory-motor responses.

Bergson's diagram shows how the entirety of each individual's memories is included in every circuit; each level contains the whole "repeated an endless number of times on the different storeys" (129, MM). The widest, most dilated circuit is made up of our "personal recollections, exactly localised, the series of which represents the course of our past existence" (129, MM) and this is repeated on each level, increasingly contracting towards the smallest interconnection between the perception and its almost immediate memory. As these circuits tighten, they become further removed from their original, fully extended form and therefore applicable to a greater extent to a wider range of possible perceptions. They become more useful, and more likely to be employed in a sensory-motor response. That is, it becomes more possible to utilise these recollections in action, thereby rendering them in spatial terms. "To act is to induce this memory to shrink, or rather to become thinned and sharpened, so that it presents nothing thicker than the edge of a blade to actual experience, into which it will thus be able to penetrate."[8]

As teachers we might, for example, be in the process of recalling how a class managed a task when we taught it as part of the same topic last year. We "cast our minds back" and have the ability to remember how the students worked, how they responded. This recollection will help us to understand the way that the students in our current class are managing the task and assist us in planning our next steps.

DELEUZE—AUTOMATIC AND ATTENTIVE RECOGNITION

Deleuze engages with these aspects of memory in his cinema books, and although he is developing these concepts through and for images in film, his treatises on Bergson here are useful in developing further our understanding of how memory, perception and action interrelate through the circuitry that Bergson has set out. Deleuze describes the circuits of the "sensory-motor"—acquired memory—as connecting *useful* images; connectors built between perception, memory, and action. These are characterised, he avers,

by automatic or habitual recognition, and are in direct employ for a purpose or action. In cinema, these are named "movement-images" and proceed in sequences that reinforce our sensory-motor schema.

The table below captures the parallels that are drawn between the two philosophers, helping to avoid the confusion that might arise here:

Acquired Memory - Automatic Recognition

Automatic Memory - Attentive Recognition

There is, Deleuze continues, a second variety of recognition; characterised by a different state of attention. Where our recognition and response to sensory perceptions had in acquired memory transferred automatically into a habitual action, here the sense of function or "usefulness" is absent. We encounter an experience or incident which we cannot immediately match with a memory, and we are unsure how to respond. In place of our habitual reaction, we make a conscious decision: We must cast our minds back, engaging our automatic memory to try to recognise the object or stimulus that we perceive. Deleuze writes how this attentive recognition allows us to re–engage with the smooth operation of our sensory motor responses; we recall where or when we have seen or witnessed this previously, and thereby link back into our usual sequence of responses.[9]

If acquired memory and, via Deleuze, automatic recognition produce the regular repetition of habitual sequences - routines, fixed patterns or approaches, standardised, regular operations - then attentive recognition leads us to actively recollect the past, accrued in the layers of our automatic memory, and apply this to our present experience. Either way, it's "business as usual." The action of our attentive recognition, drawing on our automatically accrued memories, allows us to re-enter the habitual, regulated patterns of our sensory motor schema.

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We have shown how a regular pattern of recollection, memory, response, and action can form a stable basis through which we might understand the process of teaching and learning. We might draw a parallel here with notions of reflective practice, and the ways in which we draw on our training or our previous experience in order to inform our work in the classroom. We would not consider someone to be a good teacher who is unable to draw from their experience to a considerable extent when making decisions, and again we see a parallel here with Dewey's habits.

The current culture of teacher performativity, while suggesting freedom and deregulation on a superficial level, "re-regulates" by requiring teachers to document and explain their decision-making. Becoming a teacher, or becoming a *better* teacher, means to develop foresight and tighten the loop between plans and actual events, between input and output. Experiences of discontinuity[10] - i.e., when things do not pan out as we had intended - can be seen as productive, even within this tightening loop. Dewey describes how the breakdown of a habit in a concrete situation offers an opportunity to reflect and learn in order to expand our future capacity to respond to new situations.[11] When a teacher diverts (or is diverted) from their intention, or when the result is not as they predicted, reflective/retrospective rationalisation becomes necessary - *why did I do x instead of y?* or *why did I do x and why did it not "work?"* Continuity is re-established, a certain degree of control and predictability is reinstated, and the teacher's permissibility is restored. In other words, failure is something to be prevented or, if that is not possible, to be reasoned back into continuity and tameness.

So, what's the problem? We construct ways of working that allow us to progress towards preconceived goals. When we meet with a difficulty and these patterns don't quite fit, we utilise our past experiences to make sense of the problem and get our class "back on track"—even if the goal posts have slightly shifted. What is it that we miss when we make sense of failure in this way, when we use the routine of reflective practice to tie up our loose ends and smooth over the tangles?

In the next section of the paper, we will explore how Deleuze de-

scribes incidents of failure that are irreconcilable with the regular, interwoven pattern that has been established here. These failures, found in departures on unravelling lines of distraction and the halting misstep of a lost memory, contain the potential of insight and even revelation.

FALLING; DIGRESSION, DETOUR OR DIVERSION

> *I am in the flow of a lesson, describing to a group of students the context for a work of art. This is a planned lecture, perhaps one that I have delivered before, or at least rehearsed in some way. In the process of my explanation, I am abruptly reminded of an image that connects to this one - I pause, trying to bring the piece to mind - but failing. I cast about trying to recover the title or artist name that will close the gap and allow me to continue with my lecture. Instead, I happen upon a recollection of an image of a work that at first seems unrelated, but as I grasp at it a series of linkages occurs to me or appears to me. The lecture departs from its planned sequence and, together, we explore the tangent. Perhaps it leads us to a new perspective on works that we had not even planned to cover, perhaps it opens the lecture to the perspectives of the students, and maybe in this way we find a new path.*

Deleuze writes that "attentive recognition informs us to a much greater extent when it fails than when it succeeds."[12] There is a quality of suspension here, when we reach for a memory that can re-engage the regular pattern of our habitual responses, and we cannot find it. Deleuze describes these instances as disconnections, "disturbances of memory" and "failures of recognition."[13] The circuit does not loop back, linking our experience with what we remember, and we are set adrift on a new tangent. Where do these tangents take us, in terms of the circuitry we have been mapping?

Deleuze finds that these off-shoots that result from a failure of recognition deliver us to the outermost circuits in our diagram. Here, Deleuze writes, memories interconnect without looping back to refer to sensory-motor patterns nor to perception. They link with one another in two different ways or modes: Either lapsing into one another with a fluidity that Deleuze

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describes as "amorphous" or switching abruptly from one to the other where the connector itself drifts and changes in order to form the linkage.[14] In both of these cases, we are thinking in temporal rather than spatial terms. Unable to re-connect our past perceptions with our present circumstances, we cannot act in response, nor can we re-enter a familiar sequence.

TRIPPING UP: KNOTS, SNAGS AND SNARLS

We have explored moments when our planned trajectory wanders off course and we go "off-topic" during teaching and learning, a departure that can open up possibilities. These moments are a splitting off from the regular pattern of memory, attention and response to create paths connecting aberrant or elusive recollections that make up the outermost circuit of Bergson's diagram. Here we look to the other extreme, to the smallest circuits of Bergson's diagram, where our perception of an object and our immediate memory of it meet or perhaps tangle together.

Van Manen describes moments in teaching when, faced with a situation that demands a pedagogical response, we "have already acted before we really know that we have acted."[15] These pedagogical moments exist in a "rush" where there is no opportunity to pause for reflection. There is an urgency to these moments in teaching when we must decide what to do immediately, without the opportunity to draw on our past experiences or our training. These incidents, Van Manen writes, catch the pedagogue in a space that is "neither corporeal nor intellectual."[16] We are caught somewhere between the physical and the cognitive, and for a split second we are stuck, unable to cast our minds back to a relevant recollection that can set us back upon the tracks of our learned patterns of response, we have already reacted. Instead of our attention turning towards the stores of our automatic memory in search of a useful recollection, this "stuckness" results in a stalling of the regular progression of the sensory motor schema. This is not a detour or derailment but a halt, a misstep in the rhythm of our usual procedures.

Bergson writes that the smallest of the circuits in his diagram show us how, "memory thus creates anew the present perception; or rather it

doubles this perception by reflecting upon it either its own image or some other memory image of the same kind."[17] Our perception is inseparable from our memory of it, although they remain different in kind - inextricable from one another and yet not merged together, "distinct but indiscernible."[18] This circuit, Deleuze writes, "functions as an internal limit for all the others and puts the actual image beside a kind of immediate, symmetrical or even simultaneous double."[19] Neither actual (or perceived), nor virtual (or re-membered), the stop that we experience here reveals to us the simultaneous becoming of both. Deleuze describes how, where the widest circuits took us through interlinked, remembered spaces of memory (and even dream), this smallest circuit does not relate to space or to movement, (or rather it places movement in service of time, rather than the other way around). This circuit is what he terms a crystal image of time, an awareness of the separation of the past from the present that allows for a kind of "undecidability." We are placed, Deleuze writes, "beyond all psychology of the recollection or dream, and all physics of action."[20] It is in this moment, where neither recognition nor recollection can be active and where the past and the present render one another visible, that we find an opportunity to think and do something altogether new.

CONCLUSION

Our culture of teacher performativity favours predictability; failure is to be avoided, or at least to be overcome swiftly and reliably. Teachers are asked to render mistakes or breakdowns in habit retrospectively useful by re-integrating them into sensory-motor schemes. Yet, following Deleuze and Bergson, failure can present opportunities to not smooth over these moments and instead to re-engage with unforeseen possibilities and new ways of seeing.

The detours and tangles that we have explored in this paper enable us to think in temporal, rather than spatial, terms, using what Bergson calls our "intuition." This is not a complete understanding of intuition, by any means, as it is an extensive and developed method, however, it does allow us a way to define the fundamental difference between the approaches taken by

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Dewey and Bergson. For Dewey, failures primarily offer opportunities for learning, the re-adaptation of goals and a re-calibration of intended trajectories based on reflection. Dewey leads us to envision a process whereby in learning from our mistakes we make adjustments, re-integrating the misstep back into our thinking as a whole. This would be concurrent to Bergson's idea of intellect, or the spatialisation of thinking. In contrast, failure in the sense of the trips and falls that Bergson and Deleuze describe, enacts a change much more fundamental to our thought, as it is the whole that is fundamentally altered.

This mode of thought stands in contrast to our usual habits of meaning-making that are spatialised, rooted in intellect and rationalisation. Intellect, following Bergson, is oriented toward inert matter; it "is the faculty of manufacturing artificial objects, especially tools to make tools, and of indefinitely varying the manufacture."[21] Here, the difference to a Deweyan view of "failure" and its uses becomes apparent. Rather than opportunities for reflection, following Bergson, failures can be viewed as meaningful due to their potential to think in and with the temporal, avoiding the artificial separation of our thinking into segments and sequences.

Following such an understanding of failure, teachers are urged to keep open the space created by the rupture of habit, and to allow themselves to be redirected by the trip or fall and to continue along the unplanned path opened by a digression. If viewed not merely as learning opportunities or "stepping stones," failures may allow the teacher to see their work, their classroom, their students anew. At first instance, then, "failing," is not a chance to "fail better" or to learn from our mistakes, but perhaps instead may lead to the realisation that the sequences of goals and targets that we construct to support a reassuring regularity and sense of progress do not constitute learning.[22] As such, moments of failure—if they are not immediately transformed into opportunities for progress, and if we resist the urge to spatialise them by weaving them back into a continuous and regular narrative—open opportunities for a different way of seeing and thinking. Perhaps we can understand failure as opening us to the un-thought and the uncharted, accessible only

through thinking in and with the temporal.

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