What does Motivated Mean? Re-Presenting Learning, Technology, and Motivation in Middle Schools via New Ethnographic Writing

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Abstract

This article offers a critique of the way middle schoolers are often positioned as generalizable objects that can be acted upon to produce measurable increases in motivation and learning. The critique invites a reconsideration and cultural analysis of some of the dominant discourses and perceptions of technology, young adolescence, and the study of motivation. The use of New Ethnographic Writing—a method that performs a cultural critique via extended scenes—connects to the roles and status of motivation, technology, and educational research methods deployed within public schools. Coupled with weak theory, this approach offers a way to understand young adolescents as navigating and wayfaring within complex everyday ecologies that escape notions of developmental level, test scores, motivational indices, and GPA calculations. New Ethnographic Writing and weak theory invite a productive re-orientation to the interactions that take place every day in schools. This invitation comes via a methodological sideways move that draws on non-representational theory and literary non-fiction to form a mode of address that makes relational and momentarily cartographic types of knowing and understanding possible.

A Map

This study offers a reconsideration of the dominant narratives surrounding young adolescence, motivation, and technology in middle schools while also suggesting a role for new ethnographic writing and weak theory within educational research. It presents a kind of knowledge project whose objects undulate within the landscape of public school classrooms but get overlooked because they are not easily captured, categorized, or quantified, do not directly speak to the goal of making middle schooling more effective and thus have scant history of academic valuation. This is a knowledge project that affords tip-of-the-tongue insight, but does not add a bullet point to the list of '*What we, as a field, know about motivation and technology in schools.*' Rather it makes its mark by marking the reader as changed by the experience. This style of non-representational scholarship cultivates understandings that both accrue—page after page—and flash up in moments of resonance.

In the next section I review how motivation and the practice of embedding motivational elements in learning technologies is generally positioned within schools. I then describe the methodology and the writing techniques that constitute New Ethnographic Writing. I offer several extended scenes written from a first-person limited perspective and conclude with sections that pull back from the imagined center of ongoing conversations about motivation and technology in middle schools and inhabit a tangle of meaning and affect (Thrift, 2008; Vagle, 2015).

Motivation in Education

The quest to understand what motivates individuals to act has at least a 2400 year history (Bolles, 2014). Rooted first in philosophy and more recently in psychology, inquiry into human persistence and action forms the field of motivation (Reeve, 2008). External, internal, behavioral, cognitive, altruistic, and hedonistic theories of motivation have enjoyed alternating—often adversarial—periods of popularity and disuse in explaining the biological, experiential, and cognitive amalgam of motivation (Burns, 2008). Surveys, inventories, multivariate analyses, pre-posttests, self-reports, and participant observations have been used to identify factors that lead to heightened engagement and inform or contradict existing theories of motivation (Schunk, Meece, & Pintrich, 2014).

Born out of a desire to identify, measure, and influence factors that predict learning and achievement, educational institutions have looked to studies of motivation in hopes of using their findings to reduce student resistance to the

curriculum and cultivate engagement with it (Ames, 1990; Curwin, 2010). To those ends, teachers, designers, and researchers have worked for decades to embed elements in instructional designs that might increase volition, persistence, self-regulation, and effort (Gagné, Wager, Golas, & Keller, 2005; Zimmerman & Schunk, 2012). From workbooks to online textbooks to pedagogical strategies to game-based learning, most educational materials and learning environments include facets meant to overcome competing interests and motivate students to engage with the official curriculum.

Scholars in educational psychology have created research designs capable of indirectly measuring the impact materials, interactions, and environments have on students (Keller, 2009; Reeve, 2008). Capturing, categorizing, and often quantifying levels of engagement, interest, persistence, attitude, intensity, direction, self-efficacy, collective-efficacy, and affect are approaches used in determining and attempting to influence a student's willingness to learn (Brophy, 2004; Klassen & Krawchuk, 2009). These methods of inquiry into the motivational efficacy of different instructional approaches and designs remain largely rooted in the objectivistic, positivistic foundations of psychology and educational psychology (Cokley, 2003; Steinmetz, 2005). While this paradigmatic predilection has supported extensive lines of inquiry, it has constrained others (Pintrich & Schunk, 2002). Drawing on New Ethnographic Writing, weak theory, and non-representational theory the approach herein offers a way around these constraints by sidestepping the methodological maxim that motivation, technology, middle schoolers, and the experience of middle school can and must be explicitly measured to be understood. Instead, this approach—realized through writing—creates an accrued legibility, a waxy buildup of perspective and suggestive interplays not normally possible in school-based research (Stewart, 2011).

Method and Theoretical Underpinnings

New Ethnographic Writing is a form of ethnographic research as well as a theoretical assemblage that invites readers to compositionally inhabit a context, experience interactions, and rethink narratives that populate our academic worlds (Stengers, 2011;

Stewart, 2014). In this approach, scenes track dynamics within and between moments—moments that "*don't add up but are always threatening to*" (Stewart, 2008, p. 72) where "*things jump into relation but remain unglued*" (Stewart, 2015, p. 19). Data analysis is embedded in the writing process. Rather than beginning with base codes, counting frequencies, or filtering *what happened* through a priori theory or theoretical framework (Anfara & Mertz, 2015), observed interactions are written up without immediately categorizing, flattening, or making them *mean* (Stewart, 2007). The resultant text is a form of literary nonfiction with academic overlays, a (non)fictocritical turn—a sideways move around a search for answers in the form of a number, set of categories, or a predictive theory and toward a heterarchical flow of entanglements and legibilities (Muecke, 2008; St. Pierre, 2013; Stewart, 2014).

New Ethnography or New Ethnographic Writing is a process of narrative creation, built out of the researcher's extended personal experiences within an environment, written in a way that is accessible to the public and pertinent to academics (Goodall, 2000). It is a process that seeks not to *get it right* but rather strives to get it variably nuanced and contoured. This writing up of ethnographic experience involves a concerted effort on the part of the researcher to resist and delay the assignation of meaning to the objects of inquiry, attending to their particularities instead of scanning past them based on presupposition, theoretical logics, or social science imperatives (Vannini, 2015). Moreover, this type of writerly poesies performs the powerful tensions that circulate amidst what is scientifically knowable and elements that are pulled together in moments only to move on, alone or in groups—resisting scientific knowing or explanation but remaining quite real (Stewart, 2015). By simply deploying '*prefabricated knowledge*' about our ethnographic object(s), Stewart (2007) writes that we risk a type of observational, interpretational, and analytical glaucoma, where the more we focus on the meaning we ascribe to the patterns we observe, the harder it is to see past them and back to the press of forces that make up moments that might be understood in a multiplicity of non-representational ways. The will to find meaning, to make a series of observed events, taken from a larger pool of collected moments, *mean* something is an expected, almost unavoidable part of educational and social science research yet the

way it is enacted often fails to resonate with the "*stories, tangles of associations, accrued layers of impact and reaction*" (Stewart, 2008, p. 72) that get lost, overlooked or over-categorized in the push to understand, write it up, make it mean, and get it out (Thrift, 2008).

This type of inquiry is less about merging traditional qualitative analysis with more literary forms of expression than about reorienting the field or education to research methods that take pains to present human interaction with much of its cultural illegibility or polysemy intact. In this way, moments of ethnopoesis, local epistemologies, histories, policies, and academic theories can indeed circulate within a text—just as they circulate within the research experience. Foley (1995) too, though in a different way and on a different scale writes of "*personal encounters*" of "*more fact than fiction*" (p. ix) within the *"postmodern era of anthropology"* (p. 204). From these and other examples I find—and lose (Lather, 2007; Thorp, 2005)—my way among personal, historic, societal, and academic discourses, using different modes of address and different processes for making meaning out of the research experience (Lather, 2007).

In this piece, I use ethnographic methods culminating in writing (Pollock, 2006; Stewart, 2007) and influenced by weak theory (Sedgwick & Frank, 2003; Stewart, 2008) and non-representational methods (Thrift, 2008; Vannini, 2015) to track and consider a tangle of circulating effects and interactions encountered in a middle school science classroom. The moments I include below describe and animate contexts wherein students, teachers, technologies, research, and curricula converge.

Weak Theory (Sedgwick & Frank, 2003) differs from traditional or strong theories in that it is not defensive about its status compared with other theories, it is not fixated on prediction or self-preservation or internal fidelity. It allows researchers to think and write beyond what they can correlate or triangulate with three forms of evidence. Instead it affords an opportunity to inhabit spaces of possibility—alerting themselves and readers to other ways of understanding via other ways of attending (Stewart, 2007)—particularly via experiencing written events as an accrual of cultural accretion that hangs together in rhizomatic ways (Deleuze & Guattari, 1983).

Strong or predictive theories and the frameworks they underpin and enable have come to be seen as central to understanding middle schools and middle schoolers. Yet, there is room for other sideways moves and insurrectionist approaches (Vagle, 2015). Weak theory and non-representational theory—which focuses on stepping bodily into the tangled relational flow of everyday life with a sense of irreducible wonder (Thrift, 2008)—are rhizomatic moves that allow researchers to hit the reset button so to speak, to slip past the Zipf's law-like constraints of middle grades research wherein inquiry and attentions are meted out following a decline curve beginning with the usual themes studied via the usual methods (Brinegar, 2015). Slipping past these logarithmically winnowing, normalizing constraints affords researchers the opportunity to follow lines of flight toward expansive non-adversarial, non-linear, non-paranoid, non-representational ways of doing knowledge work. This reterritorialization of scholarship repositions and complicates the steady march of contemporary research on motivation, middle schools, and technology as we know it (Deleuze & Guattari, 1983).

The extended scenes that make up the context and data for this study took place at Dawlish Middle School [DMS], a pseudonym. This inquiry was a minor piece of a multi-district research effort to inquire into the impact a problem-based learning curriculum called Alien Rescue exerts on student understanding, motivation, and attitudes toward science, scientists, careers in science, and space science. My role was to observe two DMS science teachers and their 8th grade students as they implemented the two-week Alien Rescue space science curriculum after-which I was to contribute data and analysis that could provide a unique perspective on how the curriculum influenced student motivation and learning.

While I was on campus, I sat in on class sessions, ate lunch with participating teachers, and briefly became part of the school ecology (Spradley, 1980; Stewart, 1996). I looked, listened, interacted, and made jottings—paying particular attention to what people, myself included, said, what they did, what they were wearing, the rooms we were in, as well as noting my internal dialogue (Emerson, 1995).

On fieldwork days I made post-observation audio recordings during the drive back to the

university. I used the jottings and reflective audio to create initial write ups of the day's events and interactions. I used rereading and reflection to expand the write ups—first focusing on details, sequences, and scenes—before adding bracketed analyses from multiple perspectives. I also reworked the text in an effort to ensure that the way I had positioned myself and the role of research within the school was as self-implicating as it was self-congratulatory (Pollock, 2006; Wright, 1977). Finally, in the post-scene sections at the end, I drew on weak theory and non-representational theory, using multiple readings of the scenes as well as peer and participant feedback to further analyze and theorize about motivation, young adolescence, technology, research, and the project of middle schooling (Richardson & St. Pierre, 2005).

Extended Scenes

The following scenes invite the reader into a literary form of the ethnographic present (Hastrup, 1990; Stewart, 2007) wherein I observe and interact with some of the students and teachers participating in the web-based space-science curriculum.

The Funnest Way to Learn

I drove to DMS to observe Ms S's science students on a cloudless morning in early May. In four years as a resident of Southern City and a student at Southerly University, this was my first time venturing into the surrounding semi-rural spaces. I took a left out of the #10 University parking garage, a right at the light and then, up and onto a six-lane ribbon of asphalt running North and South—my 1999 Corolla straining to join the south-bound flow of SUVs and 18 wheelers. Six miles later I traded the interstate for a two-lane county road which skirted around hills and formed the border for several cattle ranches.

DMS comes into view through the passenger window just as the town of Hitchens (population 2431) emerges in the distance on the driver's side. I turn from one farm road onto another, I drive up the school access road and look for a place to park. The trees surrounding the school's half-full quarter-acre lot are of the type and size found in so many strip-mall parking lots, small and insignificant in the way of shade and majesty—I park, grab my backpack, and leave the Corolla in the Texas sun.

After signing in at the front office I walk down the hall and to the computer lab where, in an email, Ms S told me she would be with her third period class. I knock on the mostly-open door, stick my head in, and say hello followed by a smile. She gets up from her computer and we shake hands and introduce ourselves. We stand with our backs to the desktop computer she was using and look out at the students working in groups of two and three at the computers arranged in a 'U' around the room. She mentions that these are her pre-AP and *A* honor roll students.

'My next group after lunch is a struggle,' she says—mentioning that she will probably change things up a little bit with that group as there is *'too much inferencing'* in the first pages of the Alien Rescue curriculum packet for *'those kids'* to handle.

'Better to start with filling in the information sheets,' she states, looking around the room before turning to me and adding, *'unless you think I should do it the same way with each class.'*

Ms S does not know that I have not sat in on a single Alien Rescue curriculum meeting, nor have I seen the intervention protocol. Four years ago I turned down a chance to work on the Alien Rescue project in an official capacity. Now I am a hired laptop, a data collection agent keen to confirm the PI's faith in me and in New Ethnographic Writing—hopeful for 3rd or 4th authorship on a larger, collaborative paper outside my methodological home (Collaborator, Collaborator, Author, & Collaborator, 2011). Explaining the situation and my position to Ms S would prove tedious and do little to support project implementation.

'Whatever you think is best,' I say, *'you've been working with these students all year and it's your classroom.'*

Having felt like I sold out my pedagogical beliefs in problem-based learning and constructivism for some shallow notion of solidarity; I turn my attention to the student groups. This is the second day of the intervention and the first full day of group interaction with the environment. By the time I finish talking with Ms S and unpack my scratched and scuffed AlphaSmart digital note-taking device, the students have been working in groups of two and three for over 30 minutes. I notice how they share headphones

during portions of the program that include audio, how they take turns alternating between using the mouse, reading the information off the screen, and filling out the pages of their team packet.

'We finished all the way up to page 3,' says one student, speaking to Ms S as she turns in her team's packet.

I type the statement, noting the way Ms S nods when she hears it, noting the focus on progress as pages complete and the absence of talk about the complicated space science problem at the heart of Alien Rescue (namely the identification of habitable homes for six different alien species within our solar system).

'This is like the funnest way to learn, honestly,' says one student close to me, pushing himself back from the computer.

'I like labs,' says another.

While students are milling about between packet hand-in and the bell, Ms S announces that they will have a substitute teacher tomorrow but, no matter, they should just keep working through their packet. I wonder to myself if she trusts the packet to guide their work more than the application, more than their own curiosity, more than the substitute. I think about how I have done the same thing when I was a teacher preparing my students for a substitute.

The end-of-period tone sounds and the 8th graders join scores of students in the halls, collectively making their way to the open-concept cafeteria for lunch. Ms S invites me to eat with her in the teacher's lounge.

Popcorn and Tuna

We sit with a few other teachers and a teacher's aide at a table next to the refrigerator in a windowless room. I fish a half-smushed over-sized blueberry muffin out of my backpack while Ms S, munching on microwaved popcorn, recounts her students' first day with the Alien Rescue curriculum–they filled out the survey and motivational inventory, took the pretest, and watched the introductory video together. She tells me about the team names they chose, the planetary-themed passwords they created, and confirms that each team got 10-15 minutes to explore the environment all in the spirit of the problem based learning approach. I nod.

Pedagogically, this approach gives students unusually high levels of autonomy. Students, usually working in small groups, are confronted with a scenario requiring them to organize and use new information in order to resolve a complex naturalistic problem (Azer, 2008). Aspects of these scenarios or the entire curriculum—as is the case with Alien Rescue—are often embedded within a microworld running on a digital device. Students are encouraged to explore the microworld and formulate a largely self-directed plan to solve the problem (Uden, 2006).

Ours is a minor conversation at the table. Most of the other teachers—including Ms S—exchange bits of narrative about a new student who refuses to eat or even sit in the cafeteria, instead he stands silently just outside of the lunchroom area.

A teacher, pulling her head out of the refrigerator for the third time since we sat down says, *'Someone actually took my lunch, my tuna fish sandwich! Did any of you take a lunch in a plastic bag with a tuna fish sandwich in it by mistake?'*

We say no and she goes out to her car to check that she did not leave it in there. I peel the wrapper off my blueberry muffin wondering if a tuna fish sandwich sitting in a car in the Texas sun all morning, is worth finding. I ask Ms S if I can come and observe her students the following day.

'Oh sure,' she says, *but I'll be out.'*

Hold on Everybody

After lunch I use the restroom and meet Ms S in the computer lab. Her students are already grouped and seated around the horseshoe configuration of computers—their chairs and bodies mostly turned toward Ms S. They wait as she collects the parental consent forms and passes out the student assent forms.

'So I need you to sign this and date it.'

Alien Rescue startup screens and login pages begin winking on around the room.

'Don't start using the computer yet,' she says.

The students scoot their chairs around to one of the computers in the bottom left hand corner of

the horseshoe near where Ms S is standing. Together they watch the opening three minute 'newscast' video that sets up the scenario: a spaceship carrying several alien species has contacted earth looking for new homes—the students must travel to the United Nations space station and conduct research to determine where in the solar system each alien species might live. At the end of the video, the silence is broken by a question from five boys sitting at the bottom middle of the 'U'.

'Can we log in now, Miss?'

'No. What did you learn from this video clip?' Ms S says.

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'Aliens are real,' says one.

'Something about aliens,' says another.

'An alien space ship, six different species,' says a third.

Ms S tells everyone to turn off their monitors. She walks over to the stack of Alien Rescue packets on a table in the middle of the room and begins passing them out—one per group, saying, *'Write your group name, your names and the password, stop after filling out the front cover. We are going to be working on this for the rest of the year so I don't want you to panic. Log on to alien rescue and just stop.'*

If the command to *not panic* was a cross-disciplinary allusion to space science within contemporary English literature, none of the students let on that they noticed the *Hitchhiker's Guide to the Galaxy* reference (Adams, 1997); nor did Ms S give any indication that the allusion was deliberate, leading me to wonder why she would think they would panic.

Back in front of their computers, some groups are ready to begin almost before Ms S finishes giving directions. Some take longer and a few groups need help. Already logged in, two boys, sitting together in the same chair, fight for control of the arrow keys which move their 3D avatar and change what they see first-person-shooter style. Their rapid random key-pushing makes the images on their screen change wildly as they wait for their peers to be ready.

'Let's all click the email titled Director of the IRC,' Ms S says, standing next to the five boys at the bottom of the horseshoe.

'Everyone, follow along,' she says before reading the email aloud.

'Stop going through the space station,' she says looking at the two boys sharing a chair.

'Now let's read the Alien's message. Again out loud.'

They read in murmured-unison.

Afterward Ms S says, *'We've got to find places for them to live in our solar system.'*

The boys, no longer sharing a chair are laughing and looking around while Ms S says, *'You've got this job, where can they live?'*

… [silence]

… [more silence]

'What I want you to do is,' Ms S says pausing to look around, *'go to the research lab.'*

She waits while the groups navigate their avatars to the alien research lab inside the space station. The lab contains a clamshell-like alien computer. Bumping their avatars into the device activates the interface made up of a circular presentation screen and different sized buttons around its periphery giving users access to information about each of the six alien species.

'Can we start now?' asks a student sitting with four other boys at the bottom of the horseshoe.

Alien Rescue was designed to put the popularity of immersive first-person console gaming to educational use to in order to grab students' attention, capture their imagination, and help them build positive associations and aspirations related to science (Liu, Toprac, & Yuen, 2009; Rideout, Foehr, & Roberts, 2010).

'Hold on, everybody; turn to page four,' says Ms S.

A flipping of pages ensues. Page four is a fill-in-the-blank-type species organizer for the Jackalatay species.

'Click on the top right circle that says species, then JACKalatay,' she says, standing just a few feet from me, before turning toward me.

'Is that how you say it?' she asks.

I shrug and nod. Each screen now displays a half-page of text and several images. There is a separate multimodal screen half-displaying half-describing each alien's body, food, habitat, needs, and technology.

'We have to write all of that?' asks a girl with French tipped nails in the far right corner of the room as she clicks through the different subcategories.

'I'm going to tell you the words to pull off the screen and put on your paper, read some, what could we put?' Ms S asks.

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'Legs and arms?' says the girl with French tipped nails.

Someone else reads a full sentence out loud about the Jackalatay being able to lift several times their body weight. Ms S asks if they need to write out the entire sentence or if there is another way they could write it.

'We could just put strong,' says a student.

Ms S agrees and asks for more information about the creature. Someone points out that one band of colors represents a type of gas that the Jackalatay need to survive while another band signifies a gas that is poisonous to them.

'How would we find what gas that is?' asks Ms S.

'Spectrograph?' asks a student whose monitor displays the spectrograph tool—accessed via an expandable side menu.

'That's cool,' says a student pointing at a video flyover of the Jackalatay's home planet and dwellings in the habitat section.

DeAndre, a student in a black hooded sweatshirt and plaid shorts, taps out a beat with his pen and the heel of his palm. He was absent yesterday and Ms S told him at the beginning of the period to sit at a table without a computer and wait until she could give him the survey, pre-test and AR orientation. He has been resting his head on one of the computer tables for most of the class period, the unfastened Velcro straps of his white on white Nikes pointing stiffly out to the sides.

One of the groups has compared the spectrograph data in the alien database with the key of elements. They tell Ms S, who is still eliciting information from the different groups, about their findings. She paraphrases their response for the rest of the class, some write it in their packets.

'Good Jessica, needs sulfur but not hydrogen,' says Ms S to the group in the far right corner. *'Now I want you to start filling out some of the other Alien information.'*

As the other students begin the process of filling out the information sheets in their packets on the different alien species, Ms S walks over to the table at which DeAndre is sitting. He has begun drawing on his hand.

I scan the groups. One group cycles between watching the video, zooming, panning, and reading text. In another, one student reads aloud while the other writes.

'How do you spell that?' asks a student to her partner, her pencil hovering over the a line in the packet, *'A L G E E?'*

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'A L E R G Y?' she asks.

A student wearing plaid below-the-knee-length shorts blows against the thin side of an orange Starburst wrapper held up to his lips and stretched tight between his thumbs and forefingers.

'Me and him are going in the order that they have them,' says a member of a co-ed team when Ms S pauses at her group's work area.

The ebb and flow of interaction continues as I move from group to group scooting my wheeled chair around the room, listening in and jotting things down on my plastic, aquamarine, digital note taker. Ms S walks around the room in a clockwise fashion, looking at screens, at open AR

packets, pausing now and then to make a comment or answer a question.

In the far right corner of the room a student with silver-dollar-sized hoop earrings returns from the bathroom to find herself without a chair, her partner reclines over two chairs—her back pressed against the cinderblock wall. The girl reclining looks up and, after a few moments of silence, slowly sits up and faces the computer—her French tipped nails visible against the black plastic of the mouse she controls.

'They look like crystals,' she says using the mouse to circle the image with the cursor.

'So their bodies are shaped,' says the other picking up the pencil.

'Put shaped,' says the first as she uses the mouse to move on to another aspect of the alien species.

'They need carbon and nitrogen' says a boy, his wrist in a cast. He is part of the group of five boys—no longer playing with Starburst wrappers, they exchange information about the aliens in between comments about how weird the different alien species look.

After checking the packet of two girls with dark brown hair who have finished gathering information on their third alien species Ms S calls out above the din, *'I want you to finish your one thought and then close your booklet for me.'*

Ms S collects the packets from each group. They log off, except for one student who uses the arrow keys to send her avatar running from the alien computer room to the command station and back again in a single-entrant relay race, her screen flashing conspicuously.

A spotty chorus of sighs fill the room when Ms S announces that they'll have a substitute tomorrow while she attends a district event. No matter, despite her absence they are to keep filling in their packets with information about the six different alien species. She gives the call for them to line up and a slack and shifting ribbon of students assembles from just inside the door to the middle of the room. They talk amongst themselves, waiting for the tone to go off. One boy at the back of the line is trying to break his ballpoint pen open against the edge of an empty study table. The end-of-period tone sounds, and they are gone.

We prefer the Computer

Before the beginning-of-period tone goes off, all 25 students in Ms S's next class have entered and taken their seats around the 'U' of computers. I take a seat at the empty study table in the middle of the room.

'I'm going to give you a packet and it's going to look really scary but it is not a problem because we are going to do it for the next three weeks so don't worry about doing all of it at one time,' Ms S says.

Again I wonder if Ms S is concerned her students would not be able to understand the multi-episodic nature of the AR curriculum. I wonder how often they work on projects like this. I wonder if the packet—looking like a booklet of worksheets—has her telling each group not to panic.

'Fill out the front page and stop,' she says, pausing for them to write their names and team names on the front of their packets, *'I'm going to walk you through this booklet and then you can get started. Turn to the table of contents. You can see there's the page numbers, one hundred possible points,* [a place for] *checking your work, and putting your scores, kind of like a grade sheet.'*

Looking down at her own copy of the packet, she mentions that the 100 possible points given in this packet will be the last points given out for the year.

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'Page three actually sets up the mission, this might be the page you want to do first, but that's up to you,' she says.

'Page 4, and 5 is where you are going to take notes about the alien species,' she says.

Ms S narrates as she and the class flip through their AR packets.

'Before you launch a probe I recommend you do pages 7, 8 and 9.'

'Pages 10-18 is where you are going to write research about our solar system, the one we live in.'

'Page 19 is probe data.'

'We are not doing page 22,' she says after which several students draw 'Xs' through the page.

'Don't worry about the last 6 pages for a while,' she says looking up from the packet and scanning the room. *'What you are doing is self-paced. So log on and you and your partner are off on your mission. Let me know if you have any questions.'*

Ms S introduces me to the class, mentioning that I am from Southerly University conducting research on the Alien Rescue program. With that, the students are *'off on their mission'*, some head straight to the alien computer, others to the solar system information. I turn my chair toward the students sitting directly behind me—tapping observations into my AlphaSmart. A student to my right glances back at me.

'You go to SU?' he asks.

'Yep,' I say.

He says that he guesses Southerly University is an okay school. He mentions that one of his relatives attends Southerly A&M before turning back toward his partner to help him probe the alien database for information they need to place the aliens within our solar system.

I move around the room before returning to this first group. The student who asked about SU twists his body toward me and says, 'E*ven though we have Ms S, who is one of the best teachers, we love Ms S, but we prefer to look at the computer. See how we are engaged, we don't like sitting in our desks. We prefer the computer. You can write that in your report.'*

I type his statement—surprised that he would make such a comment.

Sweetbread and Substitutes

I spend the rest of day and the next morning with Ms M observing her students' use of Alien Rescue. Over lunch Ms M tells me that most of her science sections are made up of students who struggle academically. She adds that, in contrast, all but one of Ms S's sections are made up of pre-AP and A Honor Roll students.

I walk down the hall toward the computer lab to observe Ms S's afternoon sections. On my way, I take a side trip past the student cafeteria. I have

an extra muffin and want to see if the boy who stands against the wall outside the lunchroom would like it. Apparently, I think a boy who has refused to sit, much less eat in the school cafeteria for the past month, will accept a muffin wrapped in napkins from a stranger wearing a visitors badge.

He is there—leaning against the wall behind the serving area, his bangs mostly covering his eyes, wearing a black half-zip fleece pullover and jeans. I take the muffin out of my bag and extend it toward him. It has bits of baked apple and pebble-sized cinnamon crumbles poking through the white icing drizzled on its top.

'Hi, I have an extra muffin today and wondered if you might want it?' I say.

...

'Really, I'm full. I'm not going to eat it,' I say.

...

...

I stuff the muffin back in my bag, use the restroom, and walk up the sloping hallway to the computer lab. As I approach, I see bodies dimly silhouetted by the Microsoft screensaver flashing on the computer monitors in the darkened lab. I poke my head in as more students enter. The end-of-lunch tone has already gone off and I hear several students wondering aloud if they should be in the lab without a teacher present. As the room continues filling I flag down an aide who is walking past. I ask her if she has seen Ms S's substitute. She shakes her head, turns on the lights, picks up the classroom telephone handset and dials. As it rings, she leans out into the hall to peer down the corridor, the telephone cord stretching.

At the opposite end of the corridor, walking at a measured pace in our direction, is a woman in her late 40s, her purse slung over her shoulder, in one hand she carries a plastic cup full of sugared donut holes and in the other, a book titled, '*Debt Cure$*'. The aide hangs up the phone and surveys the students in the room until the substitute, Ms Z, makes it to the lab. Ms Z smiles at both of us as she enters the room, directing one of the students to hand out the AR packets and tells everyone to get started. I introduce myself and she says she has no problem with my presence in the room. I reach into my backpack

and pull out my AlphaSmart 2000 from underneath the apple cinnamon muffin with the drizzled white icing. I sit in a blue molded-plastic chair with small metal wheels at the ends of each of its aluminum legs. Now 10 minutes into the period, 6 out of 9 teams have started the AR application.

Two students appear to be working on their AR packets individually. Ms Z asks one of them why he is not part of a group. The boy states that Ms S is punishing him for something he did previously and therefore was not permitted to work with a partner. Ms Z tells him to sit next to the other student working alone who, I only then recognize as the boy that, minutes before, wordlessly declined my muffin.

Each group is now working through their packet; some teams are using two computers instead of sharing. I use my legs to scoot my wheeled chair in sort of a Flintstones-esque manner to the far side of the room, lodging myself between two groups.

The two girls in the corner on my right I recognize from the day before. They are finishing up gathering information about their third alien species, taking notes, and deciphering the spectrographic data with the Spectrogram tool. The plastic keys on my AlphaSmart 2000 click conspicuously as I enter these observations about their actions into the device. The girls glance over at me and then at each other a few times in quick succession.

'Does it make you uncomfortable that I'm sitting here?' I ask.

'No' says the girl with bobbed hair, French tipped nails, and a peach colored tee-shirt.

'I'm supposed to watch what you're doing and figure out if you're motivated or not,' I say. They stare at me and then return their focus to their AR packet. I listen in.

'I wonder how they get their food?' asks the other girl in the group. She controls neither the arrow keys, nor the mouse, nor the AR packet. She is wearing a grey tank top, Daisy Duke-style jean shorts, and purple and black plaid shoes with bright pink 'Ws' on them with matching pink laces. They have just started reading about the fourth alien species, the Sylcari.

'Oh so they have to have water,' she says.

'Have horns,' says her partner who moves her right hand from the mouse to the pencil and packet, *'they have two fingers on each arm. They have four arms. What's 2 times 4?'*

...

...

'Eight,' says her partner.

I pivot my chair to face the other way and turn my attention to the five boys sitting to my left, while officially two separate groups, they have formed a partnership, scanning through the Alien information together—tapping the screen with their pens where they find information for their packet, passing it on to the other group. I think about how in terms of 21st Century skills this practice of distributed search across teams might be identified as evidence of collaboration and media literacies whereas in other settings such actions are discouraged in an effort to ensure that everyone engages the content equally.

'What does motivated mean?' asks the girl behind me in the grey tank top. I turn back toward her group.

*'It's like when your mom asks you to clean your room and there are like 800 other things you'd rather do. That's **un**motivated,'* I say, *'motivated means that you want to do something, that you are excited to do it more than other things.'*

...

'Are we motivated?' asks her partner leaning toward me.

'You would know more than I would,' I say.

...

Are you motivated to continue? More than other things you might do in Ms S's class?

The girl with the French tipped nails looks at me and nods.

'Ms Z ya acabamos,' says a student.   Ms Z we are done now.

'Let me see,' says Ms Z walking over to look at their AR packet.

'Just keep working please,' she says and turns to move toward another group.

They ask her if they can close out AR and use a computer program called Skeet.

'No game. No game,' she says walking away.

On the opposite side of the room two different groups of girls are gathering their data. In each group, one reads the information in the Alien Database dictating to the other member what to write.

'Brent, your turn,' says a boy working seemingly by himself, in the left corner of the room, Brent had been digging through a backpack laying on the circular table next to their computer. They swap, Brent taking the packet and assuming control of the mouse and keyboard, his partner looking around the room.

I glide past the boy from the lunchroom corridor. He is working on a matching exercise on page 6 of his packet. He scans the on-screen information about the Akona and the other alien species, filling in the blank spaces on the page.

'No game,' says Ms Z to the same group that asked earlier, 'maybe when your teacher is here but not with me.'

I scoot myself over to the group that was asking about playing games. Peering over their shoulders I see that they're also working on the page 6 matching exercise.

Ms Z laughs at something Brent has said and then comes over and says to me, 'you didn't want to hear that.'

'What did he say?' I ask.

'He says, are you from immigration?'

'La migra?' I say incredulously.

Ms Z laughs again.

'We're finished,' says a boy wearing white-on-white Nike high-tops, shorts and a black hooded sweatshirt.

'No,' says Ms Z walking over and flipping through the pages of their unfinished packet, 'you have to do this, and then this and after that this. Not tomorrow, today. And then this.'

'You write, you're faster.' says the boy in the high-tops to his partner.

The group that asked to play Skeet earlier states again that they are done. Ms Z comes over and pages through their packet.

'Okay' she says.

Packet closed, they take turns moving their avatar from room to room as fast as possible. They back into the probe shop where a glitch in the application lets their avatar sink into the wall making it look like he is wearing a crown.

'I've got a king, guys,' he says to the next group.

Brent's group has also closed out of the Alien Rescue application. Now working together, he and his partner are scrolling through image after image of cars with open hatchbacks, giant subwoofers taking up most of the back seat and trunk areas—the results of a Google Image search for 'subs in car'.

Across the room I notice that the girl in the corner with the bobbed hair and French tipped nails is raising her hand. I look over at Ms Z who is working with another group before scooting myself across the room to her.

'What are we supposed to do here?' she asks.

I explain how they are to gather data on different parts of the solar system so they can cross-reference these with the needs of each of the six homeless Alien species.

Four boys to the left of us are now resetting the desktop wallpaper image to photos of low-rider cars and bicycles with chopper-style handlebars.

The girl with the bobbed hair and her partner in the grey tank top both raise their hands and tell Ms Z that they are done.

'Can we close the thing now?' one of them asks.

'No, we are only doing this,' says Ms Z before walking away. The two girls turn back toward me.

'Are there aliens in this thing?' asks the girl with the French tipped nails.

I shrug.

'Are aliens real?' asks the girl in the grey tank top.

'I always thought my cousin was an alien.' I say.

...

They look at each other.

...

'People have different ideas.' I say, looking down.

The tone sounds, fourth period students trickle out after logging out and handing in their packets.

Is Io a Moon on Jupiter?

The 25 students that make up Ms S's fifth period pre-AP class sit down, locate their AR packets, login, and get started without Ms Z's prompting.

A sneeze turns my attention to a student at the keyboard with long brown hair swept forward into his face. I scoot over to see that his group is creating a probe they have called *'King Leonidis.'* Students build and send probes to different parts of the solar system to gather information about the planets and moons to aid them in safely placing the alien species on planets and moons based on their needs and sensitivities.

'Oh, for description put "to search for Alien life to find technology that can help save them,"' says his partner.

In the field requiring a rationale for launching a probe the boy who sneezed writes: *'Search for tech that will save the aliens and see if aliens are even there.'*

On the other side of the room two boys in oversized tee-shirts have just received data from a probe named 'P o o p' and are letting everyone know about it.

'Poop returned!'

'Let's see what Poop can tell us!'

They send *P o o p* on to Mercury and then navigate their avatar from the probe launch room to the data analysis room, ready to receive the mission's results.

Probe building and launching breaks out among the groups, a boy with blonde hair and a pinkish, rounded face asks me how his group might earn money within the application so they can send more probes as they have spent their entire probe budget and can no longer build or launch new missions.

'It's not that type of game,' I say.

Why, I wonder, could not there be budgetary and other political elements embedded in the application? Why do science-related applications and curricula invite us to learn about science as a set of concepts disconnected from society?

The room is alive with talk about sending probes, talk about aliens, and speculation on the solar system. A general din of space-science inquiry punctuated by the occasional sneeze envelops the lab.

'They could be basketball players, they're 6 feet tall!'

'Is Io a moon on Jupiter?'

'Ours blew up again, maybe it's because we used a battery.'

'Yeah because when you do they wear out ... but you can't recycle it again.'

Group members point to text and spectrographs on their screens. They read, reread, disagree, laugh about and fight over who gets to write their findings in their packet, who gets to craft their rationale. They crash their avatars repeatedly into the space station walls, and break out into spontaneous probe count downs.

'Go ahead, you launch it, 5, 4, 3, 2, ONE'

Ranging and Reductive

Given an understanding of the field and some effort, strong theory might be applied to these scenes and the research experiences analyzed and framed from any of a number of perspectives. The observed events might be

understood and given meaning through the lens of:

- Tensions between inquiry learning and direct instruction in middle school science classrooms (Cobern et al., 2010; Hmelo-Silver, Duncan, & Chinn, 2007; Kirschner, Sweller, & Clark, 2006).
- Technological Pedagogical and Content Knowledge technology integration models (Graham, 2011; Linton, 2012; Mishra & Koehler, 2009).
- Vygotskian learning theory (Bomer, 2003; Hedegaard, 2005; Vygotsky, 1978).
- Learning goals vs performance goals (Elliott & Dweck, 1988; Schunk et al., 2014).
- Interactions between middle school classroom climate and motivation (Ryan & Patrick, 2001).
- Sociocultural theories of learning and motivation (Gee, 2004; McInerney, Walker, & Liem, 2011).
- Cultural, economic, and social capital (Szeman & Kaposy, 2010).

Any of these theories, applied to the experience, suggest different ways of understanding the described experiences. Each might offer relevant, useful, and sometimes provocative insights into what is going on. Yet choosing any of them leaves other avenues unconsidered—suppressing a host of non-sanctioned, uncategorized, non-representational ways of understanding field experiences such as the ones above. Sedgwick (1997) encourages caution regarding *"the ranging and reductive force of strong theory"* as sometimes *"the result is that both writers and readers can damagingly misrecognize whether and where real conceptual work is getting done, and precisely what that work might be"* (p. 15).

A Different Key of Inquiry

So what happens when motivation is positioned as less of a defended theoretical construct with predefined centers, and instead is reassembled as associations, lines of flight, and inhabitable forces (Deleuze & Guattari, 1983; Latour, 2008; Stewart, 2007)? What topographies of technology, motivation, space science, and young adolescents become legible (Magnifico, Olmanson, & Cope, 2013)? What becomes possible when we reterritorialize motivation as:

a place students—and student groups—visit now and then, as something he, she, they, we slip into and out of? What becomes possible when we reterritorialize students as something more nuanced than generalized developmental nodes to which motivational, instructional, and technological overlays can be applied?

Acceleration and Escape

There is a shared, differentially-expressed and experienced desire to get through, to endure, to make it. Make it until the end of the period, the end of the day, the end of the packet, summer vacation, graduation, tenure, or retirement. There is a learned tolerance and shared solidarity associated with enduring so many moments of mismatch and incongruity, of being constantly caught in the tractor-beam of someone else's agenda.

People learn to scan (Stewart, 2005). Students scan the horizon for moments of acceleration. They engage in a game with the arrow keys, a Google image search, probe launch countdowns, aerial video of alien habitats, a favorite beat tapped out on an empty table. They follow sensation down the rabbit hole, they move sideways in the face of irresistible forces, they float high on the surface—standing silently outside the cafeteria or sitting across two chairs backs against the cool of a cinderblock wall—staring ahead, breathing, waiting, somewhere else.

Teachers too, scanning, a search for a sandwich, a shared story about the new boy, a University-created, curriculum-aligned, self-paced, packet-directed, problem-based space-science intervention lasting two-to-three weeks measured by outside investigators complete with pre-packaged answer key. A researcher, engaging in a game of boy versus muffin, scooting between student groups on a wheeled chair—a semi-autonomous probe of sorts—floating on the surface—part observer, part participant, part performer. Waiting like a multimodal sensor, for the next noticed *something* to happen.

Societal interest in acceleration manifests in institutional narratives of efficiency, in increasing the pace of learning—propelling organizational searches for attitudinal cheat-codes and educational performance worm-holes. Administrators, policy makers, teachers, publishers, and technology designers converge

in the creation of an educational ecology of different elements, textures, ideologies, and intensities. Each ingredient from the first-person shooter perspective to the simulated newscast to the array of embedded cognitive tools is thought to work on some level, whether to get a student's attention, increase their interest, or get them hooked on a particular domain-related practice. Student monitoring, teacher enthusiasm, researcher presence, shared purpose, peer pressure, 3D environments, the use of fantasy, setting one's own pace, homogeneous grouping, problem-based learning, step-by-step packets, extra help, incentives, multimodality, narrative, instant feedback, and the final 100 points of the year all circulating within the classroom—all tilting toward turning science into a recurring itch students will want to scratch.

Motivation as a Legibility

A system of education based on students making measurable gains in sequenced, pre-defined, state-mandated knowledge and skills creates the likelihood that some students may not find the experience of school to be especially relevant or connected to their interests and peer culture (Gee, 2004; Olmanson & Falls, 2016; Pinar, 2012). It is doubtful that the girl with the French tipped nails, or the boy in the white on white sneakers, or the two students fighting for control of the arrow keys expected the Alien Rescue curriculum to meet them where they were, to stoop, or rise to the level of their life world. Instead, I saw them interacting with packets more than the problem at the heart of the application, saw them using its pages to mark time, to take turns, to pick their spots and comply with institutional maxims.

Thus, designing ways of increasing engagement with curricula—centered on what some students consider to be other people's knowledge, skills, and culture—becomes its own subfield. Multimodal, technology-supported, game-based experiences such as the Alien Rescue curriculum constitute a well thought out, theoretically-sound approach. Yet attempting to understand who is motivated, when, to what extent, and why, is a knowledge project rhetorically rooted in curricula, pedagogy, and developmentalism that is awash in dynamic competing spheres of agency (Greenstein, 2016) and ordinary, everyday effects that make up much of the context of middle school settings like DMS.

Some students worked together, some took turns, some worked alone, and some formed 21st century intergroup information-sharing collectives. Across teachers and students, talk of progress was most often discursively equated with finishing the packet. In this, most seemed, somewhat motived. And yet there were moments wherein the experience of engaging with Alien Rescue appeared to meet students where they were, moments of blast-off, moments where individuals, or groups, or most of the room took on a din of inquiry-related engagement. Moments at varied grainsizes that grew into something more than finishing or getting through, moments wherein aliens and academia, inquiry and young adolescents got caught up together. Such moments might be interpreted as having motivational potential—unplottable on a Likert scale but legible in a more complex way—a sort of internal and relational social flocking behavior (Belz, Pyritz, & Boos, 2013) influenced by myriad moment-to-moment shifts in physical position, peer dialogue, and perceptions about how this moment measures up as well as the socially safest places to be within it. The elements that form part of these moments might move away from each other on their own or at the sound of the bell, or some of them might get bunched together—leaving a residue of possibility, a leaning toward a shifted opinion or new wrinkle of proclivity.

New Ethnography and Weak Theory

New Ethnographic Writing affords a way of considering complex interactions in these settings not possible via the usual methodologies (Stewart, 2008; Thrift, 2008). Resultant texts suggest the productive capacity of lived events where things pile on, spread out, or meander into the next (Deleuze & Guattari, 1983; St. Pierre, 2013). Instead of needing the writing to map linearly from a gotcha-moment to an actionable finding, it can re-present a tangle of experiences and perform a waxy buildup. In this way New Ethnographic Writing and weak theory do less meaning making of the sort a reader of academic literature might expect while making a space or moment more legible than one might hope possible. The usefulness of this approach comes not from its capacity to tell teachers, designers, or researchers what to do differently tomorrow morning with the middle school student population or with technology, but rather from its potential to reorient us to tomorrow morning so that we might meet the technologies, theories, affects, and young

adolescents in relation to each other and ourselves (Latour, 2008; Roy, 2003).

Asking where weak theory might take us is like asking where the moments described above might take the boys who created, launched, and analyzed P o o p, or like asking where it might take Ms S, Ms Z, or myself. Using weak theory within New Ethnographic Writing is not about constructing and defending a prediction but rather an exercise in riding between and among local extrema, not in a search for a solution, but in an effort to notice, consider, and weakly theorize about as many possible pathways within and between moments that are normally colonized from the beginning. In this way we just might gain a different sense of things that are going on within *known*, well researched spaces that elude our usual research methods and theoretical frameworks. It is a way to remind ourselves as researchers that what is often referred to as obvious, inconsequential, or contextual noise includes myriad potentials for different types of knowledge work that do not necessarily culminate with a new strong theory about why something is the way it is and what we should do about it.

This type of inquiry and analysis then does not move backwards along a logical, arborescent spine from bud to branch and trunk to taproot, but rather forms a combinatorial journey of possibility from shoot to stem, from stem to rhizomatous tuber and back again along the same network of paths yet on different trajectories and at different velocities and viscosities. Garver (2008) uses Faust for some perspective, "*Gray, my dear friend, are all theories, And green the golden tree of life*" (p. 64). By resisting strong (Tomkins, 1965), colonizing or paranoid (Stewart, 2008) theories, New Ethnographic Writing, coupled with weak theory, seeks to let some of the greenery we are capable of noticing but cannot collect categorize and correlate using traditional methods bleed into our knowledge projects and onto the pages of our re-presentations of experience with motivation, with technology, and with middle schoolers.

In this study, that means a greater sense of the complexities of youth and school. It means altering how we think about constructs like motivation, learning, young adolescents, technology, and research in naturalistic settings. New Ethnographic Writing and weak theory offer the field an approach to knowledge work

capable of both re-assembling the interactions that take place in schools and critiquing the prevalent theoretical constructs, research methods and epistemologies that guide our scholarship. Critiquing, not with an eye toward supplanting but rather with the aim of offering new ways of thinking about a moment in the hallway, a three-week space science curriculum, a missing tuna fish sandwich, what motivated means, middle school experiences, and what, if anything, we can do about it/them.

Was I Supposed to Laugh There?

Scholarly research is rarely written up in ways that critique via something other than categories and correlations (Stewart, 1996). While the study of effect, especially humor, for instructional purposes dates back more than 40 years (Banas, Dunbar, Rodriguez, & Liu, 2011), its use in educational research (Gervais & Wilson, 2005) is less common (Teslow, 1995). Understanding what effectively charged moments of interimplication make possible within a field that tends to couple professionalism and participant respect with affective restraint and seriousness is unexplored territory (Pollock, 2006).

In writing the above experiences, moments mired within a complex often conflicted educational culture (Goldstein, 2008), I let the effect of these co-constructed moments remain. The exchange wherein the girl with the French tipped nails asks me what motivated means and then follows up by asking me if she and her partner are motivated is charged with effect. While some may interpret including this exchange as an invitation to laugh at a participant's expense—the humor I find in the exchange relates to the way her statements about motivation to engage with the Alien Rescue curriculum critique the larger projects of motivation research and instructional technology design. The next layer of humor I find in the exchange comes from the somewhat ludicrous position I found myself in as the researcher in trying to make such determinations ethnographically.

Despite the critique mostly being leveled at technologies, institutions, and knowledge projects, it took several drafts to position and implicate myself alongside my participants (Pollock, 2006). I did this—not because I needed to re-invent or distort my role—but in part to ensure my positionality was not overly heroic or

safely crafted but similarly nuanced and human. In doing so I ended up troubling socially constructed notions of maturity and adult development—and by inference, socially constructed notions of adolescence (Thrift, 2008; Vagle, 2012). Yet writing in ways that transgressed research norms left me feeling personally and professionally vulnerable (Wright, 1977). As I was writing I worried about the consequences of positioning myself outside academia's monolithic narrative of researchers as logical and composed scholars (Scott, Hinton-Smith, Härmä, & Broome, 2012) who put the best construction on everything they and their participants do or say.

A Place for Wayfaring in a World of Linearity

The accepted assumptions about motivation, the development of middle schoolers, and technology are often framed as progressing in linear fashion from one node to the next (Ingold, 2007). Motivation positioned as malleable student behaviors and attitudes moving from resistance to determined engagement to mastery or from experience to practices to identity formation (Elliott & Dweck, 1988; Gee, 2009; Magnifico et al., 2013). Middle schoolers characterized as embodied psyches awash in hormonal, physiological, and neurological changes are expected to arrive at a White, middle class, male, heterosexual version of adult-like maturity (Caskey & Anfara, 2007; Vagle, 2012). Technology applications designed to be multi-modal interactive information-injecting devices engineered to overcome obstacles to learning and ensure mastery in sequenced concepts before leveling students up (Cuban, 2003; Rajan, Raju, & Gill, 2014). These ways of understanding motivation, middle schoolers, and learning technologies seem largely disconnected from the tangled moments at DMS. Disrupting these oversimplified institutional and societal constructs can be useful in reminding ourselves of the weakly theoretical knowledge work yet to be done in learning environments with young adolescents. Strong theories of motivation, adolescent development, and technology are useful in that they line up structurally with modernity's will to homogeneity, predictability, and sequencing. However, they come up short in terms of a capacity to describe or make legible moments wherein the girl with the French tipped nails, the boy in the white-on-white Nikes, 20 of their peers, Ms Z, Alien Rescue, computers, packets,

desks, wheeled chairs, me, and a rejected muffin come together.

Inquiry that draws on weak theory and new ethnographic writing circulates as an alternative to the will in the social sciences to characterize along several vectors and then move on. In this piece, I have worked to consider people, curricula, effect, and technologies in heterogeneous relation to each other within a churning, gurgling, multidimensional present (Latour, 2008; Roy, 2003; Stewart, 2007; Vagle, 2012).

Coda

Human interaction is messy. Part of the role of research methodology has been to table some of this complexity in order to gain insight and make claims. The fields of motivation, instructional technology, and middle school research have all made influential contributions to the project of schooling by focusing on particular slices or approaches to gathering, analyzing, and interpreting interactions. Most theoretical frameworks characterize interactions within places like middle school science classrooms in specific ways in part by using analytical methods that focus mainly on particular types of data, research questions, and analyses. Metaphorically it is like having a picnic on a windy day. Weighting down the blanket creates a sense of stability by keeping the wind from interfering with the experience. In the social sciences, and in education especially, the windy messiness often gets ignored. New Ethnographic Writing and weak theory are ways of remembering that human interaction is made up of mostly wind, of bunches of elements that hang together until they do not. With this understanding comes the sense that we cannot systematically capture, categorize, explain, know and thereby control everything (Vannini, 2015).

As stated in the opening sections, this type of inquiry offers descriptions and meaning making that allow the reader to have insights that are not immediately collapsed into particular theories. Consumers of traditional academic writing may find the experience of reading this piece to be professionally entertaining. They might chalk their satisfaction up to the selection of quirky moments. Yet, in the vocabulary of statistical measurement, I suggest these are not outliers in a sea of ordinary moments but rather that moments typically coded and classified as ordinary are in fact overflowing with possibility.

I chose these moments for inclusion. Yet I could not tell you exactly how I chose them over the other similarly problematic, quirky, and beautiful moments that made up the original 80 page manuscript—except to say that I read and reread them. Read and reread in juxtaposition with the other moments, read and reread in light of the conversations taking place in the fields of motivation, instructional technology, and middle school research, and read and reread against the constraints of academic publishing.

The moments and theorizing I have written up present a performative critique of the limitations of strong theory within an educational research climate that offers few alternative pathways toward understanding human interaction. New Ethnographic Writing and weak theory afford neither a final image nor a set of bullet points. Instead, this approach offers tangles of lingering legibilities about a complicated messy, windy, gurgling, churning, multidimensional present. In this piece, legibilities of wayfaring, escape, acceleration, and affect complicate how we think about the use of immersive learning technologies in school settings, about the experience of young adolescence, and about what *motivated* means— potentially shifting how we as researchers, educators, and designers think, feel, and go about the work we do.

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