The Power of Theory: An Actor-Network Critique of Aha! Moments and Doctoral Learner Empowerment

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Abstract

Doctoral studies can be envisioned as a journey to prepare novice researchers or expert practitioners to produce an original contribution to a field or engage in disciplinary stewardship. The focus is often upon the individual's individuality in production, and not about challenges or supports encountered along the way that lead to those achievements. Many postgraduates struggle in achieving these contributions, and while sometimes they are rather public in nature, quite often they involve private battles that are confronted and won, or lost, in solitude. However, stewardship and originality do not necessitate isolation, and in the same way that ideas commonly generate in reaction and relation to other ideas, so too does the role of support structures within doctoral studies when they are most needed. While other people in the lives of the doctoral learner—supervisors, friends, family—are readily recognized as the support network, less is known about the network of things, especially the influential role that theory plays, in the lives of postgraduates. It is this very theory that has the power to help the learner work through the troublesome periods en route to achieving the doctorate.

This study engaged an actor-network critique of the power of theory in the lives of doctoral students to explore how the notion of translation can provide insights into understanding how liminal periods, those challenging times where one is no longer the initiate but not yet the expert in one's field or discipline, can be resolved (Kiley, 2009). Using Callon's (1986) four-part schema of translation—problematization, interessement, enrolment, and mobilization—the role of theory in doctoral learning was examined within the context of a study of 23 international and interdisciplinary doctoral learners to better understand how theory itself exhibited power to support the journey through troublesome periods when no other support was available or strong enough to suffice. The result was the experience of aha! moments of theoretical clarity and appreciation, with an unexpected power for these non-human actors to resolve the liminal periods and support postgraduates with confidence as they completed their journeys.

Keywords

Doctoral Student, Postgraduate, Doctoral Liminality, Actor-Network Theory, ANT, Narrative Inquiry

Introduction / Theoretical Background

Successfully completing a doctorate is challenging work, given how a new path is navigated while generating an original contribution to one's area of study or specialization. With this investment in time, energy, and resources, offering new insights into the postgraduate experience by "re-analysing and reflecting on research findings in ways that may challenge or disrupt the taken-for-granted" (McAlpine & Amundsen, 2012, p. 692) is a valuable endeavour, especially when seeking to envision postgraduate learning beyond competencies alone. "We are not only what we do, but also what we think and value" (McAlpine & Amundsen, 2012, p. 693).

Notions of the postgraduate experience are further complicated in that new knowledge is often the goal of studies, with the result that studying the postgraduate phenomenon itself is more complicated and layered than readily acknowledged, with lived experiences and the quest for originality or subject expertise beyond simplistic disciplinary constraints avoided. In the words of theorist John Law, "simple clear descriptions don't work if what they are describing is not itself very coherent" (2004, p. 2). The perceived clarity of time, resource, or support limitations in doctoral study at times overly simplify the real experiences of those working their ways along that path, especially when the stakes are so high at the original contribution, and not the struggles along the journey.

One way to disrupt this taken-for-granted notion of looking at a phenomenon too simplistically is through utilizing actor-network theory. Actor-network theory is a set of "tools, sensibilities, and methods of analysis that treat everything in the social and natural worlds as a continuously generated effect of the webs of relations within which they are located" (Law, 2008, p. 141). This implies that actor-network theory, also known as ANT, brings a networked view toward study, one where layers of interrelated networks of connections overlap to posit what we frequently perceive a single, though complex, visage of reality. Regardless of whether the factors involved are people or things, they are joined together in constantly dynamic layers of networked relationships. "An ANT approach notices how things are invited or excluded, how some linkages work and others don't, and how connections are bolstered to make themselves stable and durable by linking to other networks and things" (Fenwick, 2010, p. 120) and can provide insights into understanding how liminal periods, those challenging times where one is no longer the initiate but not yet the expert in one's field or discipline, can be resolved (Kiley, 2009).

Issues in higher education in general, and doctoral study in particular, cannot be fully isolated and studied independently, as if disciplinary contexts, research designs, personal experiences, and meaning-making structures can be simplified and reduced into replicable events or otherwise studied without seeing the networked learning connections that hold them in place or bring about meaning in content and context. One starting place for peering into this messiness involves the liminal period that often occurs hidden within the doctoral journey. Liminality is the in-between point in a rite of passage where an identity shift takes place. This is where the person who enters the rite has started to change—a period often marked by confusion, difficulty, and doubt—but has not yet completed the transition to a new identity (Turner, 2011; van Gennep, 1960). En route to the doctorate, this has become known as doctoral liminality (Keefer, 2013; Kiley, 2009; Kiley & Wisker, 2009; Wisker et al., 2010). While doctoral liminality may not be universally experienced, those who do pass through it report profound periods of difficulty while often experiencing opportunities for potential growth, commonly resulting with an aha! moment after which the clarity in the conceptual processes that led to the initial struggles with areas such as "shifting ontological, professional and personal positions and awareness, as well as staged and phased intellectual and instrumental developments" (Wisker et al., 2010, p. 16) were resolved (Keefer, 2013).

Aim & Research Questions

Given the growth of doctorates around the globe, its internationalization, shifting knowledge expectations for what doctoral study should mean, and developments in the role of technology support, indications point to postgraduate studies becoming more complicated and demanding, rather than less so. With more learners pursuing doctorates, it is valuable to know how liminality is experienced and what supportive structures play a role in working through it. It has been suggested that supportive structures to encourage and help the postgraduate complete one's doctorate—families, friends, and supervisors among them—are vital for aid while completing one's studies (McAlpine & Amundsen, 2012), though actor-network theory reminds us that not all actants in networks are human actors, with human and non-humans performing layers of networked relations at any one time (Fenwick, Edwards, & Sawchuk, 2011), and it is in this specific direction this research, part of a larger study, will explore.

Little has been reported about the network of things, especially the influential role that theory plays, in the lives of postgraduates. While theory itself is not consistently conceived throughout the literature (Tight, 2012; Trafford & Leshem, 2009), it is beyond the scope of this work to engage in its own messy inquiry (Law, 2004) to seek to use it beyond the scope of the research participants using it in their own, surprisingly consistent, ways. It is this very theory that has the power to help the learner work through the troublesome periods en route to achieving the doctorate. The purpose of this research is to explore the complexities encountered during doctoral liminality and their related aha! moments to gain new insights by applying an actor-network theory lens to those experiences of the power of theory in the lives of doctoral students. This will be based on Callon's (1986) notion of translation. The research questions that guide this study include: 1. How do doctoral learners experience aha! moments at the end of their liminal periods? 2. How can theory exert power to support and move doctoral students through these liminal periods?

Methodology & Method

Learning takes place where the learner interacts with his or her environment, in various layered networks with other people, tools, technologies, and ideas. This interaction is the point of study of actor-network theory, where

Proceedings of the 9th International Conference
on Networked Learning 2014, Edited by:
Bayne S, Jones C, de Laat M, Ryberg T &
Sinclair C.

ISBN 978-1-86220-304-4

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education emerges "through enactments of various forms of association, as network effects" (Fenwick & Landri, 2012, p. 2). In this way, ANT is a method for looking at and unpacking aspects of a phenomenon, and not a methodology in itself. For this purpose, a methodology was selected that would seek to gather and organize the data for this research upon which an actor-network critique could be used in the analysis.

The formal methodology used in this qualitative design was narrative inquiry, inspired by an actor-network theory analysis. Narrative inquiry was selected as the data did not previously exist, instead coming about through the telling of the stories of the participants in this study (Riessman, 2008). As doctoral liminal experiences were suspected as being highly personal experiences and were not readily detailed in the literature, it was believed that they would only come about through in-depth interviews where participants would be engaged in the telling of their own stories of their troublesome periods through their doctoral journeys. "If talk is a way of making us legible to ourselves as well as others, telling stories about troubles is one way to come to terms with an altered identity" (Mewburn, 2011, p. 322).

Ethical approval for the study was given, pilot interviews were done, and invitations to participate were made via social media and social science research distribution lists. 23 participants from five different countries, all of whom were current or recent postgraduates, consented and participated. They were invited to engage in interviews and tell their stories about their experiences without mentioning or distracting them with the challenging language commonly associated with ANT (Clandinin & Connelly, 2000; Creswell, 2013). The interviews covered background demographics and focused on their troublesome liminal experiences and aha! moments in general during the postgraduate period. The recorded interviews were transcribed and returned to the individual participants for member checking. They were all assigned pseudonyms to maintain their anonymity, with distinguishable locations, people, and programs omitted.

Analysis

Thematic coding focused on the liminal experiences and aha! moments in the collected narratives was done (Riessman, 2008). An actor-network theory analysis was used to better understand the interaction and effect of the non-human actors in the networked experiences of the participants. In this way, ANT treats "everything in the social and natural worlds as a continuously generated effect of the webs of relations within which they are located," and it furthermore seeks to "explore and characterize the webs and the practices that carry them" (Law, 2008, p. 141). While over 1000 individual codes were identified in the full study, only those related to the use of theory as actors in the liminal and aha! experiences of doctoral students were focused upon.

What makes this an actor-network theory approach is the focus on the four "'moments' of translation" (Callon, 1986, p. 196) in the narratives of the doctoral students, namely the primary actors who are more readily apparent as the focus of this study. Translation includes four parts: problematisation, the way in which actors define their situations and its relationships; interessement, where these actors seek to box in or solidify the roles and identities of other actors in relation to the initial problematisation; enrolment, where the actors define and interrelate the roles attributed to the other actors; and mobilisation, where the other actors are convinced to act out the roles assigned, or defined, for them (Horowitz, 2011). When this concept is implemented within a study using the notion of "the actors themselves" (Latour, 2005, p. 12), the principle actors may be considered to be the doctoral learners. However, the research findings did not have the people engage in using theoretical frameworks in their work that led to aha! moments within their liminal experiences, but rather *theories* instead impacted upon the postgraduates and led to those very moments. As Fenwick and Edwards clarify, "the focus is upon empirical research that meticulously tracks specific, material everyday details of a situation, site, sets of activities, practice, and so forth" (2010, p. 145). Theory use and mastery is integral to doctoral studies (Trafford, & Leshem, 2009), and as such played an important role in the experiences of the participants in this study. Translation in this manner can provide insights into the formation and potential reformation of meaning structures, in that liminal periods of confusion, isolation, and disquietude ended suddenly when some things theoretical had the power to effect change and support the journey when other support were lacking. It was only through this actor-network approach that some of the interviews made sense, as it became clear that the human actor was not the one who was acting, but rather the theoretical frames that attracted the participants acted in ways that ultimately helped them through their liminality.

Presentation and Discussion

That theories central to the belief systems of the participants who shared their often-painful liminal experiences in the course of the research interviews were mentioned was an expected outcome in this study. Several of the participants discussed to what extent theories and theoretical frameworks central to their research and disciplinary foundations were present in helping them transition through their liminal periods, including the aha! moments that occurred when a more in-depth understanding of these theoretical constructs in their areas of expertise became more than an abstract disciplinary or paradigmatic notion. The words of the participants here speak for themselves, with analysis along the way identifying how actor-network theory aids in conceiving theories as actors in these doctoral learning networks.

One note on this presentation: the extended interviews were long and detailed, and only contextual elements of the exact words of the participants are presented to provide some evidence for how theory played a role in their aha! experiences. Narrative inquiry often results in extensive referencing of participants, though space constraints here require less than optimal narrative presentation. The discussion threaded through the presentation is intended to fill in the gaps.

> I started the first course in [date]. It was a three week course introducing you to the communications, and kind of getting your feet wet. And I started to have major anxiety during that time frame. But I made it through that course and just learning how to communicate online so I gave it, I said well you know it's a new environment, a new way of learning, so just kind of go with it. Then I went to the residency programme which was a real defining moment. You're either going to make or break yourself doing that. It wasn't something like all of a sudden one day I sat down and said "Oh my god, I can't do this," it had been building. And then I guess when I was in the first real formal course where, OK the stakes are high, this is where the money is, you need to perform here, that all this stuff started to culminate, and I guess it was the third week into the first course that I said "Who's kidding who, how can I do this?" So it was after looking at that first paper and I said I have no idea what this person's asking . . . I don't know any of this stuff. And it was at that point I said to myself, "You know what, that's why I'm here." You know because I was, at that point I was an expert [learner]. I really knew my craft well, I did it well. I was extraordinarily well versed and had a great knowledge base in what I knew, and knew how to learn new things within my comfort zone, but now I was in this completely different arena and there was no comfort. There wasn't even a safety net. I couldn't even define what the safety net was, and I had to create that. And that was the major aha moment, that it was OK not to know, it was OK to feel oh my god I don't have all the answers, because that was exactly what you need to feel and experience in your doctoral education. Anna Lee

Anna Lee was studying toward an education doctorate (Ed.D.), and while her area of expertise was education, she did not initially see herself as the (expert) learner she was, having so often been in the role of the teacher or instructor. In ways, she forgot that she could begin something anew and know very little about it, as something common in the teaching / learning process. Her struggles came to an end when she reflected on the holistic experience of feeling less than adequate to do her studies and the foundation of education, with its teaching and learning process at all levels, suddenly opened to her that she could be in the role of learner again in the case of something new. This is fundamental to educational theory that all people can learn and nobody knows everything. For those in the research or practice of education, this can easily be forgotten.

Cathy was also a student in a program within education, though more in the area of research-focused educational technology. Her areas of interest were online learning communities, and her struggles occurred a little later in her course of study.

> It is a direct result of my desperation for community that is where my interests in this came. I'm a very emotional person and I'm driven by my emotions quite a bit, and so a lot of work that I do is driven by that emotion and this is an extremely strong emotion for me so a lot of the work that I started doing in process and things that I started noticing came from this place, and you're exactly right this is why I came to what I'm looking at which is how do communities seek each other out when they are looking for that kind of support and reaching out into that space and seeing what comes back to them and #phdchat is an excellent example of that which is why it interests me so much. It is like there is this universal feeling of uniqueness, it's weird like I know that's almost like an oxymoron but we all feel at some level that we're going through this thing and it is our own to go through and it is unique, but then sometimes you just say, great, somebody else is going

Proceedings of the 9th International Conference on Networked Learning 2014, Edited by: Bayne S, Jones C, de Laat M, Ryberg T & Sinclair C.

ISBN 978-1-86220-304-4

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through this and that makes me feel so much better. And that is definitely a huge route for where my research lies is how I'm coming to my research and you're exactly right about that . . . I felt very lonely . . . I very much need to be connected to people and . . . [it] is my need and search for a community of support – oh my god, community of support, I'm going to write that down somewhere! Cathy

Cathy realized she needed structures and people around her who would accept, encourage, and support her, though what she did not initially realize is that the notion of community was so important to her and did not initially make the connection between her own need for it and her desire to study it. Even to the edge of a breakdown, community acted to support her through her struggles by helping her give voice to her own relationship with it, something she was unable to articulate before. It was the theoretical notion of community, specifically between communities of practice and general online community theory that resonated in her life, though the gap between its study and practice was something that left Cathy struggling until it was realized. Cathy was an active member of numerous communities, though she did not initially recognize its importance in her life during her studies as a realized theory, not just one in the mind.

Quinn also struggled with a theory she employed throughout her studies, though she did not recognize it to the end of her research involving an online anthropological ethnography study of older adults.

I had a really big eureka moment, I'd been struggling with this whole idea of participant observation which is the foundation of anthropology, right, ethnography. And what exactly is participant observation. In the classroom we're told, oh well you just go into the culture and you participate and you observe. Sounds easy enough, doesn't it? But in fact I was in there doing what everybody else was doing, participating, learning how to make graphics, being supported. I was doing everything that everybody else was doing. And I was busily making notes and screen grabs and I was working so hard, and I was six months in and I thought, what am I doing? I don't know what I'm doing. I don't know what I'm striving for. I completely lost the purpose, if you like, of participant observation, I didn't get it . . . I stayed with it and for me the eureka moment was on the last day of my field work. On the last day of my field work I did a trip to visit one of my participants and I'd spent a few days with them and we were sitting in the sun on a bus stop bench, and it all came together. Fourteen months of field work suddenly, it was like a bolt of lightening, it all just came together for me on that last day . . . I'd been out shopping with these participants, they're in their 80s. This participant in particular would say how he briskly walked the dog or it was a gorgeous morning so I went for a brisk walk, whatever, this is in the conversations we'd been having online and in emails and things like that. But when I met, and this all happened on the last day, we went out shopping and I had to slow my pace down considerably to walk with this couple and they were very, very slow and they were very careful getting on the bus and very careful getting off the bus and this whole slowness thing that was going on, it occurred to me that my participants were old, that was the eureka moment. Online they'd appeared youthful, fun, playful, quick witted, all those sorts of things. But face to face they were really old, they're in their mid 80s. That was the big thing for me, that was when I realised that my participants were old. Quinn

Like the classic cartoon in the early days of the internet at the early point of the internet about two dogs talking while online, with the caption "On the Internet, nobody knows you're a dog" (Steiner, 1993), working with people in an online, text-based community context allows people to develop their own visualizations for reality. This can sometimes be so strong that it may persist even offline after a physical meeting. That an anthropologist would still learn about participant observation even after engaging in it for an extended period, all while fundamentally questioning what was happening in the process along with its seeming contradictory nature in how it was operationalized, led to the theory itself needing to act on behalf of itself to reveal the discipline and help Quinn through her liminal space. Quinn practiced participant observation, though her ethnographic account of her participants was limited by her own internal blockages and initial limitations, so while she wanted to remain true to her anthropological background, realizing this in practice meant moving beyond her own beliefs that, while nevertheless were accurate from her perspective, were not as complete as they ultimately needed to be. That this disciplinarity imposed itself on her until she finally made sense of it resulted in her having a very rich study when she concluded it.

Proceedings of the 9th International Conference on Networked Learning 2014, Edited by: Bayne S, Jones C, de Laat M, Ryberg T & Sinclair C.

ISBN 978-1-86220-304-4

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Unlike others who had a single liminal period that was navigated through the power of theory, Nancy had two such moments where theory came to her assistance. Another anthropologist, this time with two aha! moments along her journey.

> A troublesome experience that I had while working towards my doctorate was, and this was in the teaching part of it because I was really learning anthropological pedagogy at that point and I had changed my dissertation to the pedagogy of online education and anthropology. And it was a student who just disagreed with every anthropological concept on the face of the earth. And he would post things like, "well of course we're biologically racist or biologically different, why do you think white man can't dance, why do you think black men play basketball, why do you think so?" This is just an example of the kinds of things he posted to the discussion board and this happened every week that he visited he posted, [what seemed] to me, very offensive types of ideas about ethnic groups. And my response to him eventually was, I'm removing one of your posts because it is offensive to the class. And I went to my adviser at the time and the chair of my [doctoral committee] and she said, "Oh, no, no, no—that is cultural relativity." And for me it was an aha moment—that I thought that my beliefs were superior to his beliefs, because his cultural background was different from mine . . . I thought – AH! – now I understand what cultural relativity is, and it's I who learned it from my student! That I have to maintain a view of cultural relativity . . . so to me that was a huge aha learning experience of what cultural relativity really is and that's a core concept in anthropology. Nancy

Nancy learned about cultural relativism, and next about privilege, two notions central to anthropology, both of which came to her when the discipline cooperated with her in moments of need. What she always thought she knew about cultural relativity was only book knowledge, something that did not begin to unpack its implications until she was finally faced with it. While a straight-forward aspect of anthropology, its importance to be grasped resulted in Nancy's not being able to really grasp her field without it. This had to happen in a strong way for her to work through her own strong, though previously unknown, hesitations about it.

To move forward with her research and studies themselves, she needed to understand one other central theory that, without it, would most likely continue to hold her back from fully experiencing anthropology.

> I was a very, very poor, one of six children, a family of 8 . . . I went to my High School counsellor and she said, what do you want to do with your life? And I said, well I want to get married and have babies, I saw it on TV. And she said, "Oh that's just wonderful," and she let me go. She never said, Oh you can do anything, you can do anything. So I was a High School drop out . . . so while [eventually] taking college classes I stayed quiet, very quiet. I didn't want anyone to know that I was really ignorant white trash. Sometimes that showed, and in one class, and this is an anthropology class, in one class a student, we were talking about race, and a student, she seemed very proud of herself and she said, "I was raised to be tolerant of other cultures and other people. I have always been very tolerant of black people." And my mouth was opened before I knew it, I really didn't know, it was just out of my mouth before I could stop it and I said, "Tolerance is a luxury of privilege." . . . I said that, that's quite wise isn't it? I said that and I said that out loud, and that was the moment that changed my PhD studies . . . Even I went, "Wow, that was smart" . . . I'm not stupid white trash, am I? So that really changed my perception of myself entirely, my perception of myself as a PhD student that I belonged there, that I belonged there in fact . . . and that's an anthropological concept! The idea that we don't know our own privilege. We study the under-privileged, but we don't study our own privilege. Nancy

Nancy believed she really did not belong in her studies, what with her poor childhood and negative educational experiences / expectations. Though she was indeed proceeding with her studies, though she did not understand the notion of privilege, and how her experiences were really so linked with its implications. She did not grow up in a privileged environment, and some of the implications of this experience held her back from moving forward with her discipline, as well as with her own personal studies. Experiencing an aha! moment where she suddenly became aware of her place in her course, along with the implications of why she never felt a part of it before and how power and positionality worked in human societies, resulted in her seeing both herself and her discipline in a new way, one that would not have happened without theories working on her to develop and grow.

The final example of theory acting to support doctoral learning along the way happened with Amanda, whose theoretical intercession and awakening occurred with actor-network theory itself. From a curiosity about the implications of things to an actant that influenced a change in her worldview when it was needed the most, the aha about the theory happened through experiencing it in a way that was most understandable at its own time.

> Having come from a very strong Carl Rogers, humanistic tradition to actually see the human beings as no more important than a machine was a bit of a challenge for me. I actually decided OK we'll treat this is a curiosity. What if we were to treat the world like this, so I could engage with it with a curious type willingness to at least put on hold my prior beliefs about reality . . . I watched the film Amazing Grace and I suddenly had this acute awareness of how change happens—not just because of the people involved, but also by the manipulation of things. So somewhere in that film I had a moment when slave trading could be reduced, because if you had ships which weren't allowed to sail with certain flags on them then they were open to piracy and that dramatically reduced the slave trade because they were no longer protected by flags. So that was one of the first times I had an awareness of how something seemingly inconsequential an object could actually result in such impact . . . so the manipulations of objects as well as people and things were quite pivotal and the use of the song Amazing Grace, all those things just kept trickling on and accumulating. It was like the strength of weak ties that just coalesced together to make something change and yes, you could identify a couple of famous people but that was nothing in comparison to the myriad beings that were needed to actually affect the change. So that was a pivotal moment, the first time I really had an appreciation of the complexity of change and almost the magicalness of how it managed to come together. Amanda

Amanda had a nagging sense that there were other instruments of power commonly overlooked in human social experiences, something beyond some famous people doing things to cause all event in history. Complex experiences led her to look for something more, and in watching one of the few films she viewed during her studies, the significance hit her that non-human actors play a very important role in historical events. It was this theoretical experience that led her to shift her research direction and in many ways her worldview itself. How many people presumably saw the same film without having that reaction, yet she was of the time and place and moment that she needed theory to impose itself.

That theories can participate in our networked lives in ways that move us, support us, and even mobilize us in action should not come as a surprise, especially when fundamental ones seem to be there when needed most during liminal struggles. Perhaps the networked effect of the power of theory and how its mobilisation toward real changes and reframing in the lives of some of the doctoral learners in this study speaks to ways that theory does not really have to be far away from practice. It is useful to recognize that people do not, nor can they, work or develop independently, without the force of external stimulation that theory brings as an actor in intellectual development.

Implications / Next Steps

Theory has been shown to have powerful effects on doctoral learners, especially when those same learners are in greatest need. The experiences in this research could have happened to any of the readers of this paper without any changes or aha! moments, though that would miss the contribution this work seeks to present. Human actions tend to have theoretical underpinnings, though they are not always well explored, thought through, or acknowledged as such. This work seeks to show that the aha! moments that can happen to doctoral learners, those who are becoming the experts and developers of new knowledge in their fields, have the ability to translate exactly what, for many of the learners, brought them into their disciplines in the first place.

That theory can move adherents should not be surprising, as ideas and beliefs have long had the power to move people. What this research contributes is how the notion of translation, most notably through mobilization, can move doctoral learners through challenging liminal periods, while simultaneously deepening awareness and appreciation of the theories themselves in the process. It is easy to consider how we select and use theories in research, though an actor-network theory lens can allow us to see the opposite—how theory itself imposes on us new ways of thinking through experiences that have the potential to reshape our intellectual lives. Participants in this research experienced aha! moments as related to liminal periods where they were stuck, some more than others, but halted nevertheless in the learning and understanding that often accompanies discipline depth. Without taking an ANT approach, little could be said about the influence that theoretical ideas have on

Proceedings of the 9th International Conference on Networked Learning 2014, Edited by: Bayne S, Jones C, de Laat M, Ryberg T & Sinclair C.

ISBN 978-1-86220-304-4

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postgraduates, yet these theories moved the learners along in their networked understanding of their disciplines and their relation to them.

This study sought to present and discuss its findings in an accessible manner to a non-ANT scholarly audience, and it is recommended that other studies utilizing ANT approaches be conscious of the barriers to theoretical understanding that often accompanies this body of work. Additionally, it is hoped that ANT be used to analyze other aspects of higher education experience related to teaching and learning that may not at first seem fitting, though can not be readily explainable or understanding given any other strategy. Who knows how far ANT can seek to network and mobilize?

References

Callon, M. (1986). Some elements of a sociology of translation: Domestication of the scallops and the fishermen of St Brieuc Bay. In J. Law (Ed.), *Power, action and belief: A new sociology of knowledge* (pp. 196–233). Boston: Routledge & Kegan Paul.

Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry*. San Francisco, CA: Jossey-Bass.

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among the five approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Fenwick, T. (2010). (un)Doing standards in education with actor-network theory. *Journal of Education Policy*, *25*(2), 117–133. doi:10.1080/02680930903314277

Fenwick, T., & Landri, P. (2012). Materialities, textures and pedagogies: Socio-material assemblages in education. *Pedagogy, Culture & Society*, *20*(1), 1–7. doi:10.1080/14681366.2012.649421

Fenwick, T., & Edwards, R. (2010). *Actor-network theory in education*. New York: Routledge.

Fenwick, T., Edwards, R., & Sawchuk, P. (2011). Translation and network effects: Understanding actor-network theory. In *Emerging approaches to educational research* (pp. 94–109). New York: Routledge. Retrieved from http://www.routledge.com/books/details/9780415570923/

Horowitz, L. S. (2011). Translation alignment: Actor-network theory, resistance, and the power dynamics of alliance in New Caledonia. *Antipode*, *44*(3), 806–827.

Keefer, J. M. (2013, March 25). *Navigating liminality: The experience of troublesome periods and distance during doctoral study*. (M. Tight, Ed.). Lancaster University, Lancaster, UK.

Kiley, M. (2009). Identifying threshold concepts and proposing strategies to support doctoral candidates. *Innovations in Education and Teaching International*, *46*(3), 293–304. doi:10.1080/14703290903069001

Kiley, M., & Wisker, G. (2009). Threshold concepts in research education and evidence of threshold crossing. *Higher Education Research & Development*, *28*(4), 431–441. doi:10.1080/07294360903067930

Latour, B. (2005). *Reassembling the social*. New York: Oxford University Press.

Law, J. (2004). After Method, 1–197.

Law, J. (2008). Actor network theory and material semiotics. In B. S. Turner (Ed.), *The new Blackwell companion to social theory* (3rd ed., pp. 141–158). Oxford: Blackwell.

McAlpine, L., & Amundsen, C. (2012). Challenging the taken-for-granted: How research analysis might inform pedagogical practices and institutional policies related to doctoral education. *Studies in Higher Education*, *37*(6), 683–694. doi:10.1080/03075079.2010.537747

Mewburn, I. (2011). Troubling talk: Assembling the PhD candidate. *Studies in Continuing Education*, *33*(3), 321–332. doi:10.1080/0158037X.2011.585151

Riessman, C. K. (2008). *Narrative methods for the human sciences*. Thousand Oaks, CA: Sage Publications.

Steiner, P. (1993). *On the Internet, nobody knows you're a dog*. The New Yorker. Retrieved from http://www.condenaststore.com/-sp/On-the-Internet-nobody-knows-you-re-a-dog-New-Yorker-Cartoon-Prints_i8562841_.htm

Tight, M. (2012). Discipline and theory in higher education research. *Research Papers in Education*, *iFIRST*(0), 1–18. doi:10.1080/02671522.2012.729080

Trafford, V., & Leshem, S. (2009). Doctorateness as a threshold concept. *Innovations in Education and Teaching International*, *46*(3), 305–316. doi:10.1080/14703290903069027

Turner, V. (2011). *The ritual process: Structure and anti-structure*. New Brunswick, NJ: AldineTransaction.

van Gennep, A. (1960). *The rites of passage*. Chicago, IL: University of Chicago Press.

Wisker, G., Morris, C., Cheng, M., Masika, R., Warnes, M., Trafford, V., et al. (2010). *Doctoral learning journeys: Final report* (pp. 1–61). London: Higher Education Academy. Retrieved from http://www.heacademy.ac.uk/projects/detail/ntfs/ntfsproject_brighton

Proceedings of the 9th International Conference on Networked Learning 2014, Edited by: Bayne S, Jones C, de Laat M, Ryberg T & Sinclair C.

ISBN 978-1-86220-304-4

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