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Becoming and Belonging: Learning Qualitative Research Through Legitimate Peripheral Participation

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Abstract: "Legitimate peripheral participation" (LPP) involves learning as a situated individual engages in socially mediated activity. We report on our attempt to use legitimate peripheral participation as a double normative frame for defining (a) a doctoral program and the struggles that ensued as the two authors produced and reproduced their identities as graduate student and supervisor and (b) a methodology for doing research among environmental activists. This article is fundamentally about the production and reproduction of identity while a graduate student is becoming a member in two communities, that of (qualitative) researchers and that of the re-searched (environmentalists). We conceptualize struggle as transformative rather than destructive. We argue that this involved personal style of graduate training on research is part of method-ologically sound and valid research training. We use individual and collective voice to create a literary structure that is reflexive of its content.

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1. Learning as Becoming and Increasing Belonging

The concept of legitimate peripheral participation had been introduced to theorize how a community of practice reproduces itself by accepting individuals as newcomers who, in the process of changing levels and intensity of participation, become recognized as "core" practitioners (LAVE & WENGER 1991). In some discussions, the assumption appears to be made that the community of practice is more or less stable so that the trajectory from the outside to core practice is describable in terms of changing practices while an individual becomes

"enculturated." Such a view, however, is inconsistent with the cultural-historical theory (LEONT'EV 1978) in which legitimate peripheral participation is grounded. Thus, the relationship between individual (subject) and collective is always dialectical, meaning that (a) they are contradictory yet mutually constitutive and (b) they cannot be theorized independently (HOLZKAMP 1983). Legitimate peripheral participation therefore always also involves transformation of the community, including transformation of its practitioners; it is a constant process of becoming in and belonging to a community that is itself becoming and belonging to the practitioners. [1]

A central aspect of subjectivity is identity, a concept based on the dialectical relation of sameness and selfhood (RICŒUR 2000). Selfhood itself is dialectical such that who we are in any one situation (or something) is an emergent feature of transactional praxis and therefore changes from situation to situation and over time (ROTH et al. in press). In the work presented here, we have conceptualized doctoral studies and research method in terms of legitimate peripheral participation in two communities, those constituted by qualitative research and an environmental group, respectively. This situation gave rise to multiple reflexive and dialectical relations: (a) the graduate student (Stuart) was subject both in the activity systems of research and researched, involving two trajectories of legitimate peripheral participation; (b) the individual researcher (Stuart) aspired to be recognized by the academic collective (represented by Michael) but also wanted his graduate studies to qualify him for a career outside academia; and (c) the graduate student was researcher and researched. Contradictions are embedded within these dialectical relations, relations which often led to struggle. This article is about the struggles in the production and reproduction of identity in multiple (marginal) communities. [2]

In our research and graduate training, we had used the concepts of community of practice and legitimate peripheral participation to conceptualize graduate training (ROTH & McGINN 1998). We had not, however, substantively considered the productive changes that accompany reproduction of the community. We started by conceptualizing our relationship as one of legitimate peripheral participation and core practice. It was through the struggles that we experienced in our roles as graduate student and supervisor, respectively, that we came to better understand the praxis and theory of graduate student training. The struggles we write about in this article were an outcome of the dialectic nature of legitimate peripheral participation. Heeding Marshall McLUHAN's (1995) analysis that the medium is the message, we use first and third-person voices to create a literary structure reflexive of its content. [3]

1.1 Legitimate peripheral participation: in praxis

Learning means to become, that is, to belong somewhere or differently than we do at the moment. We conceived of Stuart's doctoral studies in terms of a trajectory of legitimate peripheral participation in the practices of qualitative research as performed by Michael, his supervisor, and the other individuals already in Michael's research group. After two months Michael asked Stuart to

write his first paper for publication, followed by further requests for writing conference presentations and articles; at no time was Stuart required to do something that had an end in itself, such as writing a course paper. None of Stuart's work ended up in the dead-end of a course instructor's pile of marking for the term. Instead, he presented at conferences, wrote articles for publication and worked in the community. His training plunged him into participation in academic qualitative research. [4]

But that was not the only world in which Stuart was becoming and belonging. His research project involved participating in a local grassroots environmental group. He conducted his research by becoming a useful member of the group. He volunteered in almost all activities and acted as personal assistant to the group's leader. Near the end of his term in the group, Stuart was competent enough in their practices to take over as interim leader while the coordinator was absent. [5]

In this way, Stuart was engaged in a double world of learning, of becoming. He was activist, researcher, and a researcher while being an activist. Participating and therefore being and becoming as activist, researcher, and researcher-activist does not come easily. Participating involves struggles as Stuart attempts to find and continuously construct an identity, which inherently involves the dialectic of difference—different Self-Other relations in different communities—and sameness—a sense of sameness carried across situations (RICŒUR 1990). In this article, we explore the struggles arising from this double learning to be, as it was played out through the course of Stuart's graduate studies. Throughout, the notions of learning, researching, and identity will be interwoven to explicate a research and a type of research training that is personal, engaging and productive in a way recognized by the research community. [6]

Stuart: From the beginning of my program, there was an emphasis on participating in ways that contributed to discourse, research, and inscriptions that were meaningful to an ongoing research project. I, as a graduate student, was always expected to be participating in the community of scholars who would ultimately judge my scholarship, presented as conference presentations and papers for publication. Six features of this approach stood out for me: immediate engagement, scaffolding of activity, an emergent, negotiated research project, theoretical discourse linked to participation with other scholars in the field, involvement in practical details such as equipment purchase and grant crafting, and finally, participation in the reproduction of the culture of researchers among novices. Although these activities are often part of other graduate students' training, in my case they were the basis for the training and were not supplemented with simulations (such as courses or seminars about grant writing) prior to my engagement. The other strong focus of this activity is that there was always an emphasis on the graduate student's activity being part of and important to the research unit as a whole. I was constantly aware of the importance of my relations with others on the research team. Through scaffolding, negotiations and struggles, an experience that could be looked back on as an "education" emerged. And I emerged, feeling confident in many of the standard practices of academia. [7]

1.2 Legitimate peripheral participation: in theory

Legitimate peripheral participation (LPP) is a particular articulation of learning within a broader tradition of research and theorizing in education representing a social- and cultural-historical view of learning. The term legitimate peripheral participation refers to a way of understanding learning that explicitly acknowledges the dialectical relation of individual subjects and the collective in which they are a part; learning can be best regarded as changing participation in these settings rather than passively absorbing and processing information presented to them (LAVE & WENGER 1991). The LPP approach unites two major strands of scholarship: practice theory (e.g., BOURDIEU 1990; EISENHART & FINKEL 1998) and situated cognition theory (e.g. CHAIKLIN & LAVE 1993; KIRSHNER & WHITSON 1997). What unites these two strands of authors is the insistence that learning must be theorized in terms the relations between individuals and their physical and social environment. Four points about this analytical framework—pertaining to learning, legitimate participation, peripherality, and community of practice—are salient to this article. [8]

First, learning is always embedded in the social—this does not imply that all learning is group activity, but acknowledges that we can never escape being embedded in material and social relations. Even activities such as reading, which may appear to be solitary are deeply social—the means of production and distribution of the book, the ability to read script, the house and chair are all socially determined entities, depending on resources available, money (socially agreed exchange), taste, and so on (LIVINGSTON 1995). The implication of this argument is that we must always take into account where learning is taking place, and its role in the ongoing means of social production and reproduction in that particular time and place. It also implies that learning of knowledgeable skills is subsumed by the learner's experience of participating in a community of practice. [9]

Second, "legitimate participation" suggests that the learner's participation is a legitimate contribution to the respective community of practice. This contrasts educators' traditional claims that they prepare potential participants in some community of practice by having them participate in activities (such as doing lab experiments whose results have been known for years) that have little relationship to the workplace and communities where practices are enacted. From the perspective of LPP, the activities of such students are legitimate practices in reproducing the culture of educational institutions, and work must then be done to make the practices in which they engage at school relevant to workplaces for which they are ostensibly being prepared. Through an LPP perspective, people learn what they do, in relation to the socially and materially mediated situation they find themselves in. [10]

Third, "peripheral" is intended to convey that the learner's participation is part of a network or community of practitioners and thus is a part of a collective effort. Peripheral is not meant to indicate that a newcomer has a more peripheral position relative to an old-timer who is more central. Rather, it points us toward a unit of analysis where all members' participation is legitimate and peripheral to (or

always a just part of) the ongoing functioning of the whole. As they become more "expert" (recognized as such by other practitioners), individuals become more fully engaged in the community-defining events, become more entangled in the relations that constitute its activity—in fact, becoming more fully engaged and becoming an expert are two sides of the same coin. The direction of learning in an LPP model is always toward full participation. This implies not just mastery of a set of skills, but a belonging in a community, an ability to participate in more and more of its practices (which includes knowing what is appropriate to talk about in the hallway, and what is more relevant to the coffee room). This way of articulating learning seeks to de-center mastery and domination of others or situations in favor of a description that focuses on an increasing entanglement in the relations that constitute the community of practice. [11]

Fourth, the concept "community of practice" articulates those human and non-human entities that are part of the activity in which the learner seeks to participate. A novice's trajectory is an emergent feature arising from the dialectic of the collective subject (community) and the individual subject (HOLZKAMP 1983); it is a continued production of the individual subject and the collective in which it is a constitutive part. The community of practice also includes the settings, such as buildings and locations, as these are often socially meaningful aspects of the practice. [12]

2. Bridging the Worlds—Identity Through Activity

In this section we introduce our perspective on activity and "struggles," and articulate some of the types of struggles that emerged for Stuart as we attempted to enact our graduate student-supervisor relationship. As mentioned earlier, we consciously conceptualized our relationship in terms of legitimate peripheral participation in qualitative research and conceptualized this research *itself* as a form of legitimate peripheral participation (and sometimes as "apprenticeship") in a particular community (here an environmental activist group). [13]

2.1 Struggles

Becoming and belonging are not necessarily easy. Social reproduction, the co-determined "fitting" of one individual into a new community, is a process that may be fraught with struggle (LAVE & WENGER 1991). In our present understanding, it involves the mutual transformation of both the community and the individual. The novice, wanting to belong, must learn the practices and discourses of the community, but the community, needing to reproduce itself, also must find a place for the novice. By bringing their own uniqueness to a community, the novice also always has the power to transform it even as they are being transformed (BOURDIEU & WACQUANT 1992). [14]

This work of belonging is also the work of becoming (BAKHTIN 1981). Identity is something emerging from the struggle between the individual and the community of practice into which they are entering (WENGER 1998). Identity, socially negotiated, involves different activities in different environments. From this

perspective, the individual is seen as the nexus, or site of mixing, of the various activities that they engage in throughout their network of communities. Identity is not stable, but is a constant work in progress (ROTH et al. in press). [15]

From this perspective we acknowledge that identity is work, and that this work is often highly personal. The very moment an individual enters a field (professional or for playing), they subscribe to playing by the rules because they "have an *investment in the game, illusio* (from *ludus*, game)" (BOURDIEU & WACQUANT 1992, p.98). *Illusio* implies that the participants in a community are interested because of their stakes in both community and their own place in it. It implies that the participation can sometimes overtake the participants, who can then risk their lives, to continue in the activity or maintain the status they want to have in the community. Our activity matters to us, we are invested in it, it becomes a passionate undertaking. A felt tension ensues (LAVE & WENGER 1991), and conflicts arise as the novice attempts to balance his interest with the demands of the community. Identity is not experienced by an individual as a detached entity, but as a suite of emotions, of passions or interests which play themselves out in the field of their body and experienced community (GOMART & HENNION 1999). [16]

In Stuart's graduate training, this work of becoming/belonging, and the stakes involved on both sides were often enacted as struggles with Michael. However, our self-conscious awareness that these struggles were part of the process of identity formation allowed us to experience and enact them as transformations. In the following excerpts, three thematic struggles are detailed: expression, balancing multiple identities and doing explicit identity work done in order to fine tune the student supervisor relations. Through these stories, we both explicate the rich entanglement between personal and institutional interests, and how through these struggles, new or transformed bodies of work, or ways of being emerge. [17]

Importantly, we do not consider this to be a story about "power over," that is, a supervisor squelching a graduate student's desire to "write what must be written." This is, rather, a story about the tensions and struggles as both people, each in their own way peripheral participants, seek to produce something in a way they consider acceptable to the community. It is a story about two people attempting to come to terms with what they must say to their community amidst concerns of being accepted. [18]

2.2 Expression—How to write, who we are

Concerned for Stuart's learning and enacting culturally appropriate practices of writing and research, Michael attempted to ensure that Stuart's work was compliance with those expectations. Stuart, on the other hand, came into the degree program with his own historically constructed desires and practices. As noted previously, Stuart's graduate program was oriented towards production of publishable material that bore the names of both mentor and student. What was written would be public material and would place both Michael and Stuart in the community of academic researchers. We both had something at stake, and what

was written needed to be appropriate to both individual's sense of good writing and research. This arrangement set the stage for many struggles over expression. In the following, we present our different ways of experiencing our relation while we worked on our first co-authored article, which was a contribution to a special issue on autobiography in science education that Michael edited (LEE & ROTH 2000). (The two column format allows us to rally our different ways of writing and accounting for experience without having to filter what we want to say through the collective author's voice. The two-column format structurally represents the simultaneity of our original experience better than telling both experiences in a sequential format. On the techniques of "w/ri(gh)ting" to make content and structure [medium] consistent see ROTH and McROBBIE [1999].) [19]

2.2.1 Writing research: the doctoral student's perspective

We co-authored a piece on autobiography as a research tool in science education. It was meant to be a conversational piece. We would both write autobiographical sections, and then follow-up by having a theoretical conversation over and about the respective pieces. Michael had initially responded to my autobiographical section as too "flowery." After I had edited it once to remove superfluous language, he repeated the claim and suggested that I re-write my autobiographical section to be like his.

> "Stuart, I had a look at it. I find that your language is a bit too flowery. For example, take a look at the following paragraph: ... I won't be able to sell this. Would you mind going back through your part and write it in such a way that it is passionate, yet reads a bit more like the other parts, a bit on the hermeneutic side. It is not even clear whether you experienced it as this, or whether this is your post hoc objectification." (April 16, 1999) [20]

I received this e-mail just before Michael left for a ten-day trip. During this time e-mail contact would be very limited. Through my conversation with another grad student about the

2.2.2 Writing research: the supervisor's perspective

When Stuart and I had our first meetings about becoming a graduate student in my research team, it appeared natural that I described my conceptualization of graduate studies not as a rite of passage riddled with tests of manhood (in his case) but as a guided and supported, changing participation in a field where I was already a core participant. I foresaw him learning to do research by doing it with me. To me, this implied also applied a certain level of trust. On Stuart's part, I expected trust that I would protect him from harm, which could come, for example, in the form of rejection of his ideas, and that I would increasingly facilitate his ideas to be published in various professional venues. On my part, I expected Stuart to trust me in as far as I was a benevolent mentor rather than a malevolent tyrant attempting to undermine his growth. This trust also implied that I would be able to speak as it came to me without having to censor the way I talked or wrote. With Michael BOWEN, another graduate student with me at the time, this form of relationship had worked extremely well. It would be very different in this relationship. [27]

When Stuart began to write, I felt that

situation, a solution to the problem of having to write an autobiography just like your supervisor's emerged. I would use his e-mail as the first comment in our conversation! Because Michael was away and not able to readily communicate, I had time to research my resistance and articulate in terms of feminist theory and "liberation" pedagogy. I responded to his e-mail in a scholarly fashion, pointing out what I thought the problems in his comment were through a critical analysis.

> "Take a look at your memo to the first draft of my autobiographical account (see above paragraph). These are strong comments and a suggestion for action which I think has rich implications. The term 'flowery' with its pejorative and dismissive connotations could have been substituted with 'emotive' or 'descriptive.' I see the adjective you chose as an expression of domination. It is also a very macho put-down—calling another man's work feminine and superfluous (Spender 1980, p.78-81). It reflects the masculine, competitive nature of science (Connell 1993, p.200-201), which is something we work against in creating an inclusive 'science for all' (Roth & McGinn 1998)." (LEE & ROTH 2000, p.63) [21]

This exchange set the tone for the whole paper, which emerged as a discussion about power relations in the academic community and these relations' effect on language and expression, the masculine, heroic language tendencies of scientific narratives and the question as to whether science could ever be truly libertarian.

> "As I think about teaching in terms of cultural reproduction, and reflect on

he was not sufficiently close in style and content to what the community for which we were writing would be willing to accept. On one occasion, I wrote to him that I would "not be able to sell" our co-authored piece, "too flowery in style," which would appear in a special issue that I edited, to the main editor of the journal. I took the familiar expression to be consistent with the trust that I thought existed between Stuart and me. When I wrote the comment, I was certain that Stuart trusted me—had I not created the opportunity for him to publish his first first-authored piece? My intention had been to protect him from rejection. Yet his response was that of someone who had been attacked, someone who had experienced an attempt of subjugation, and who fought against it. Thus, something that was to me an act of friendly advice given in a relationship of trust, Stuart experienced very differently. (Of course, now I understand that ideology would have prevented me to see how I reproduced inequality in a hegemonic relation [GRAMSCI 1971].) [28]

More than anything, this episode taught me that the levels of trust that existed with Michael BOWEN did not exist here, at least on the part of Stuart. Although I was as supervisor and special editor in the position to stop the eventual publication of the piece, we turned the article into an account of the struggle over the piece itself (LEE & ROTH 2000). That is, the article was not just about our own autobiography but reflexively, an account our subjectivities in the struggle to write an autobiographical piece. I took this episode as a learning experience that other science educators might find interesting to read about and did what I could to see this rather unusual piece

> your discipline comments, I now consider an important part of the curriculum its 'repressive' aspect. We need to be cautious in our rhetoric, not to promise a utopian vision that does not include the means of social reproduction which have been discussed in this article. If we can't escape them within the constraints of an article, how do we expect to escape them when society confronts a radically different notion of science?" (LEE & ROTH 2000, p.71) [22]

From an education perspective, it was through these times of conflict that I did the most theoretical work. Whether attempting to respond to editor's comments, discovering ways of articulating the emotions or impressions I had about what I was writing, or responding to an intellectual challenge by Michael, I turned intensely to books and to other scholars for help. These conflicts required deep answers to ameliorate. I felt an urgency, a drive, *illusio*, to "win" the game, to be able to express myself in a way that was both intellectually and emotionally satisfying and to be able to withstand the critical eye of the "gatekeeper" of the first "obligatory passage point" (CALLON 1986) to the community I encountered. [23]

This struggle over expression, evident from an e-mail from Michael during the early period in my graduate studies, would continue to manifest itself in later efforts.

> "I read the manuscript and was a bit discouraged, a bit a lot... There is so much that is changed, and the coherence we put in does not exist anymore... There is no more theory, you say that we theorize something but we don't... You have written in the

through to publication. [29]

Our next collaboration was a paper given at the annual meeting of the Society for Social Studies of Science subsequently submitted to the journal *Social Studies of Science* about the role of inscriptions in how an environmental group represented a creek and redesigned some aspects of it. Through the early drafts, I again felt that Stuart was not writing for the audience but used a style that the readers of the journal would be unfamiliar with. I struggled with my feedback, sensing that Stuart would experience emotions similar to the ones during the writing of the earlier article. At the same time, I "saw disaster coming," a fear that seemed to be reified when the reviews asked for major revisions. However, during the revisions, I felt that Stuart was moving even farther away from the cultural patterns represented in the journal rather than coming closer. At home in my study, I threw my hands up in despair but made a resolve that I would attempt to assist Stuart in the best way I could to publish the piece in his style by articulating and addressing any potential problematic issue that became salient to me. The product of our struggles eventually was accepted and I regard it as an exceptional piece in its own right, not just because of the first rank that the journal takes in its domain based on the citation impact rating scale (LEE & ROTH 2001). [30]

In subsequent collaborations, Stuart took an increasingly central role in the writing. At the same time, I saw my role increasingly as one of doing everything that I could to bring an article into the form that it could be accepted by the reviewers of the journal where it would be submitted to. More so, looking back over the my writing that I have done

> informal style you use when you are talking ... I was sweating, being embarrassed ..." (October 18, 2000) [24]

My more personal, informal style, a deliberate political and aesthetic choice on my part, often clashed with Michael's preferred "objective" or removed style. In our autobiographical piece, though it was difficult to experience, the way we "played out" the struggle allowed it to surface, to take over from our preconceived notions about what the article was to be and transform the work. Our words, as BAKHTIN (1981, p.340) might say, reacted in a "chemical union," creating something entirely different from what we had planned. All our conflicts over expression have ended in reconciliation, in my finally being able to craft something acceptable to both of us. Michael wrote to me, almost with a sigh of relief:

> Finally, this is a very fine piece.
>
> Congratulations. (January 16, 2001) [25]

This example also plainly shows how membership in a community crucially affects the creative activities of its members. As he articulated in his criticism of my autobiographical contribution, Michael experienced a felt need to "sell" the special edition due to the typical practices and standards of acceptability of the rather conservative community of science educators for whom the issue was targeted. My struggle with Michael, then, was not my struggle with just Michael, but also with the scientific community and its way of articulating experience. And it was also an outcome of his struggle with the same community for similar purposes. A "community of practice" perspective independently of the collaboration with Stuart, I can see how it too changed away from the more formal style that I used to employ having been trained as a physicist and subsequently as a statistician. (Of course, these developments in my own writing cannot be seen independent of other collaborations, such as those with my colleague Ken TOBIN [e.g., ROTH & TOBIN 2002], which allowed my writing to evolve in new ways.) [31]

When I look back at the three years during which Stuart had been "my" graduate student, I see that my understanding of graduate student training as continuously changing. While I used to understand graduate student training in terms of a more or less linear trajectory of increasing participation in the practices of a field, the tensions and contradictions between the production and reproduction of a field are now the most salient aspects. It is true that my realization was not simply brought about by the interactions with Stuart. Rather, I had become increasingly familiar with activity theory (ENGESTRÖM 1987; LEONT'EV 1978) and materialist dialectic philosophy that it is based on (MARX & ENGELS 1970) and the role it attributes to contradictions (IL'ENKOV 1982). [32]

From a supervisor position, then, I experience the tensions arising from the intent to support the doctoral student in his or her process of becoming a member without having to experience rejection of work and application to membership status. The tension exists between insisting on a certain level of reproducing the cultural patterns of the field while at the same time supporting the production of new cultural patterns. A second level of

allows us to appreciate the complexity of interactions which become manifest through our daily actions. [26]

tension may arise from the different assessments that the student and I make about what may be acceptable by the field as an innovation and therefore production and to what extent the cultural patterns have to be reproduced to make the work acceptable. [33]

2.3 Selves in qualitative research and environmentalism: and "multiple marginality"

Stuart: Because of the research methodology that I enacted, my graduate studies plunged me into a situation where I was simultaneously an apprentice in two different worlds. I was becoming an increasingly full participant in environmental activism and in academic qualitative research. How was I able to manage my identity while being an activist when I was simultaneously being a researcher of activists? [34]

Collectively: STAR (1991) writes of the experience of "multiple marginality," where membership in multiple communities leaves one "at once heterogeneous, split apart, multiple ... we have experience of a self unified only through action, work and the patchwork of collective biography" (p.29). She writes of the "high tension zone" of living between accepted communities, of negotiating rival allegiances, of unifying some sort of identity among the many identities we enact in our different communities. WENGER (1998) refers to this work as "reconciliation," the ongoing effort to bring coherence to a self that, due to its participation and belonging in many different communities of practice, has multiple, sometimes conflicting roles. They both emphasize that self is unified in the moment, through activity. Perhaps it is better to say that self becomes singular in each moment of praxis, even though analysis puts all of these singular, diachronic Selfs into the same plane and thereby synchronically juxtaposes them. Stuart also experienced the effects of this multiplicity but during reflection synchronic. But what seemed more salient to him throughout his studies was the unity experienced, as Star puts it, through action. [35]

Stuart: While I was with the environmental group, I was an activist working with them on whatever problem they had assigned me. When I left the site and began writing field notes at home or talking to Michael, I was a researcher. This seamless activity across the "two worlds" is shown through different documentation I produced in response to a fish kill. One afternoon, as I began doing some routine in-stream volunteer work with another volunteer, I discovered that there had been a kill-off of trout, the fish the activists were working so hard to create viable habitat for. Meagan (the group's coordinator) was away, so I helped to organize an investigation into the incident. As I was helping with the fish kill, I was also doing participant observer research. My actions, though, were seamless across the two different communities because I was familiar enough with each one to know what type of action was appropriate within each community. In e-mail

correspondence, I write about the "same" incident to two different people. To Michael, my academic supervisor, I wrote:

> "We found a fish kill in the creek today. Bad news for the fish, very bad news, but good news for a 'construction of event' piece. I've written about our work in the attached field notes. The case is so small yet so nice that I think there's potential to do some good work with it. What do you think? ... I've got the video camera." (June 24, 2000) [36]

The same event was described differently in an e-mail message to Meagan, the coordinator of the activist group, who has very different concerns.

> "I've attached the water data. Jane has the stuff from Friday afternoon. If she calls me today, I'll add to the table and send it off to you. Here's some more numbers: As of yesterday, we'd pulled 23 trout, between about 13 and 23 cm from the stream over the course of Friday evening and Saturday. On Saturday, I put on hip waders and used a dip net to collect an extensive count. I waded the stream from the culvert at Sprite road until the logjam just past the two felled trees farther up the trail (just before the private property). I was pretty careful in my search and checked under the surface of duckweed etc. that was on the water, so I'm pretty confident that I got everything that was there until that time. I also pulled out a (dead) stickleback and a crawfish. There were fry (or small fish at least) throughout the reach. There was a thick scum on the surface of much of the water, it was not iridescent—this makes me think it's not an oil scum." (June 25, 2000) [37]

Together with Michael, we also wrote up the incident as a paper submitted to an academic journal. These different writings underlie the fact that a text is always part of some community's discourse. Though I appear to be writing different identities for myself: that of scientist, student, researcher, author, my felt experience was that of being one person communicating to many others, my identity "unified through action" (STAR 1991, p.29). [38]

I rarely experienced a conflict of allegiances or identities while involved in my research, unlike other ethnographers (HARRIS 1997). Since I was involved in a practice that involved multiplicity, this felt congruency is a phenomenon that requires an explanation (CALLON & LAW 1995). My feelings of congruence were helped by three salient aspects of the research situation: a common discourse of activism in both communities, a prior relationship of trust with the coordinator which allowed me to be "just another" volunteer, and the lack of relations between the two groups. [39]

Both Michael and I consider ourselves activists and both of us identify with the goals of the environmental group. Thus I did not experience the conflict of doing things while an activist that were at variance with the philosophies and goals of our research team. The method of participant observer research legitimized my deep involvement in the activists' activities, thus my direct participation with the activists was congruent with my role as a researcher. As is apparent from the

links above, the text I wrote as an academic author also depended on my engagement with the activists. [40]

My prior relationship with Meagan, coordinator of the environmental group, made for a non-problematic entry in the group. Because I was "just Stuart" and not "the researcher from the university," I could form relationships of trust quite quickly with others. I also chose a "non-invasive" research style, which was based much more on recording what I did and what I overheard rather than querying participants with specific research questions. Although my role as a researcher was never completely erased, I behaved as if, and was treated as if I was just another volunteer. For example, in my letter reporting the fish-kill incident to Meagan, I did not speculate on the "construction of a fish kill," nor did she wonder how I would use the incident in my theoretical work. Because I did not attempt to bring social science discourse into the activist community, I did not need to make choices about "who" I would be at a research site at any given moment. [41]

The other important factor in the ease of my identity experience was that the two communities of practice were relatively isolated from each other. Thus, I did not need to perform mediation or translation work between others—who may have been similarly involved and may have had stakes in certain interpretations or consequences of what I did—and myself. This is also apparent from the correspondence shown above, as there is little overlap between what I write about to the different parties. The environmental group did not take much interest in the results of my research, as it did not become applicable to their undertakings. Thus I did not have to account for my research activities to those on whom I based my research. Similarly, the outcome of my activities with the activists relative to the activists' goals was of little relevance to Michael. Because of the isolation between the activities of the two communities, it was easy to maintain a separation of activities while also maintaining a congruent identity. I could use one voice and doings while helping the activists, and another while helping Michael, and because I could experience both voices as part of my overall career trajectory, I did not experience identity conflict as I carried out my research. [42]

I experienced the high-tension zone much more as I attempted to balance the relevant activities of the two communities into my life. Thus, I recorded in one field-note entry:

> "Arrrrgghhhh! What a stupid day. I am having difficulties at the moment. Tired, pouring stimulants—coffee, sugar, into my tired body to keep it going, keep it going. Feeling the strain of having a life where every day, it's a different project. Feel the stress of being passionate about part of my work and wanting to pour more time and energy into it, but being held back by other parts, by my commitments to others."
>
> "And am being divorced from the smug self-satisfaction of 'working hard to get things done' by the words of Sasha urging me to 'take time to connect.' I am also noticing more and more what gets lost as my life speeds up and to me, what gets lost is the time I have to just chat with people. As an ethnographer, this could be a grave

> methodological error. Not just 'just chat' it means that much of my talk is about all the stuff I am doing, how I am suffering, what else I have to do—etc—this must be so Boring to people—I feel boring—So now I'm in a double bind—I feel guilty if I relax and take things more slowly, I feel guilty (somewhat) if I don't." (February 22, 2000) [43]

The field-note quoted in the previous sentence shows I experienced tension through limits on my time, and how this spilled over into how I enacted my identity and led me to question my research practices. I was worried that my harried state, brought about by trying to balance the demands of multiple communities of practice—"Feeling the strain of having a life where every day, it 's a different project"—would prevent me from having insightful conversations or deep relationships with others whom I was working with. Besides feeling guilty about not being a valuable friend, I was also concerned that such shallow interaction would then reduce the quality of my research "data." [44]

2.4 Identity—constructed, emerging

The issue of what I spent my time doing went beyond the issue of what was good research practice, however. This was a high tension zone because I was not participating in graduate studies to belong to a community of academic researchers, but to enter into a different, hybrid community, one I hadn't defined yet, but one that involved writing, analysis, science and society in a way that affected the practice of those whom I researched and wrote about. As someone on a career trajectory, I felt the need to explore, to expand my understanding of opportunities, and to define myself within society. I could not just follow Michael around to conferences and meet his friends. This was the third major struggle I faced during graduate school: what community was I attempting to enter? Who was I to become? Thus the question of how this graduate program of study/research fit into my historical trajectory and how I would fit myself into some community's historical trajectory became central. It felt like, and still feels like, a basic survival issue. [45]

Through my relationship with Michael, I felt forced to create myself in writing. I was dependent on funding from Michael for my survival while a grad student. I was not only his graduate student, a novice in social science research and writing, but also the person Michael was depending on to run a legitimate research project and write publications to ensure that he receive continued funding. Thus he had a stake in the style and substance of my writing. He had a stake in how I spent my time, and what my interests were. We were related through both employer/employee relationship and that of student/supervisor; there are different and conflicting aspects to these relationships, especially with respect to how the student/employee spends their time and what they produce. These aspects were not worked out in seminars of self-discovery but rather forged in the heat of ongoing practice, always in the context of participating in research. In the heat of one conflict, Michael wrote to me that he felt duped, deceived and hurt by my proposition not to work on writing and thought we might have confused and conflated different kinds of issues and relations.

> "It may well be that we can work something out that involves partially collecting further data. But in any case, I would expect that we are clear about our roles. Primarily, I see your role as employee in the construction of a physical database (boundary object). If you do not want to be a co-author (to a certain extent your interest and your time in these activities), then so be it, though I would find that regrettable. As a grad student, if you want to peruse data that you have collected qua employee on my research project, you are expected to make an appropriate request and appropriate acknowledgment of the SSHRC grant under which you have been employed." (November 9, 1999) [46]

He suggested that we meet and further discuss the issues. It was through this pressurized real-life situation that I was compelled to create myself in text. At another time, Michael asked me to help him understand or describe our relations in my own terms so that we could come to an agreement on a mutually satisfying working relationship. I wrote back:

> "I frame my primary responsibility as 'what do I need to do to enter the community of practice for which I am preparing myself, and for which the federal government, and you, are supporting me?' I do not wish to enter the community of practice of full-time university-employed academics (as you know), but rather participate in translation of science in the public sphere. Right now, that involves two domains for me: community development or liaison, and secondly NGO work, which would be more oriented toward writing and policy. Perhaps some contracting or consulting work with government would also be a potential. Taking that into consideration, I focus my activities in a number of areas:
>
> (i) Writing and working towards publishing papers. My goal in this is to present myself as a credible thinker, and emerge from the PhD process with discursive repertoire which will help me in contributing to the talk and practices around 'sustainability.'
>
> (ii) Researching literature in order to have a credible background to be able to speak about that which I am speaking.
>
> (iii) Creating a network of colleagues and associates who support me in this work, and provide a 'community of practice' starting point for when I graduate.
>
> This third point is especially important to me in this situation because I feel that your ability act as a 'God father' and tie me into well-positioned contacts is limited because my potential desired community is different from the ones you traverse. Thus I spend some time researching and connecting with others who are in the community into which I would like to fit.
>
> I consider this part of my training, and I think you would agree that it is LPP for academics. (and as an afterthought is part of fulfilling the obligations of the SSHRC research grant that pays my wages)." (November 1, 2000) [47]

Stuart: The struggles of which these e-mails were a part were experienced also as lack of sleep, panic, anxiety, probably on both sides. What is important here is that both of us worked

Michael: As a supervisor, I experience the tensions arising from the intent to support the doctoral student in his or her process of becoming a member without having to experience rejection

to move toward clarity. Michael did not label or censure me, but requested my definitions, my terms of our agreement. I have continually attempted to define myself in relation to our shared research project. This is not easy, as I have been and still am exploring my role with respect to the research, the role of research with respect to my own life, present and future. But I could embrace these struggles as not something standing in the way of the development of my career trajectory or an indication of a pathological relationship, but events that were instead crucial to it, and indeed, to be expected, if the theory on which my research is based holds up in practice (BOURDIEU 1992). This reduced the anxiety-provoking aspects of those experiences. Over time, I realized that I was able to write myself into a community in a way that was consistent with how I had envisioned it. Through this struggle, I gained competence at declaring who I was and where I wanted to go with my future. I experienced greater security and confidence through this practice. [48]

I was also given support to travel to whatever conferences I chose; this was very important in my exploring what community of practice I was to enter. I have traveled to many different locales, some not typical places for West-Coast students of science education. I was able to travel to Vienna, to attend the social studies of science conference, to Seattle, to attend the "teach-ins" prior to the now infamous protests, to the interior of British Columbia on an "Indian Reserve" to attend a conference on bringing indigenous and scientific knowledge together sponsored by a provincial forestry extension and research agency. Thus not only was I encouraged to imagine of work and application to membership status. The tension exists between insisting on a certain level of reproducing the cultural patterns of the field while at the same time supporting the production of new cultural patterns. A second level of tension may arise from the different assessments that the student and I make about what may be acceptable by the field as an innovation and therefore production and to what extent the cultural patterns have to be reproduced to make the work acceptable. [50]

I see individual identity of members of a group and their collective identity as inherently linked. Based on my understanding of the relation between individual and societal subjectivity (HOLZKAMP 1984) and the notion of concrete universals (IL'ENKOV 1982), I view individual identity as a concrete realization of the generalized identity of the group. With each doctoral student who participates increasingly in the practices of a field the collective identity of the group changes alongside the identity of the individual. Tensions arise from the struggle between continuity of group identity but allowing it to reproduce itself by accepting new members, which inherently adds new individual identities and therefore changes the collective identity. [51]

When I look back, I now see how Stuart's doctoral work changed our field in more than one way. It changed because his work has become part of its literature; it also changed because his participation changed the range of concrete subjectivities present in the field; and it changed because I have learned and changed through our interactions. [52]

and express through writing my career trajectory and potential communities, but I was given means to experience these communities in an embodied sense by attending conferences. This typically self-determined aspect of my graduate studies has been instrumental in facilitating the type of transformation that I had hoped it would do. [49]

Through this process a specific typical mix of activities, a style of writing, a type of theory and a way of articulating and researching questions emerged that could be called my graduate studies research identity (BAKHTIN 1981). By embracing struggle and negotiation as part of the entry into a community of practice, both of us have seen ourselves transform the community, and noticed ourselves becoming transformed. It helps us to surrender our notion of control, of exclusive identification with a certain identity and instead focus on the process of becoming, of negotiating our participation across the many communities that we traverse. By acknowledging *illusio*, the passion, the interest, the deep role participation has with identity, conflicts yield to new creations, identities and possibilities. [53]

3. Learning Researching—Becoming Objective Subjectively

Scientific research is usually constructed as obeying rational norms (STENGERS 2000). The opposite is the case, that there is no rational or general answer of how fictions become true. However, this does not mean that anything goes—to paraphrase Paul FEYERABEND (1975). It simply means that such questions are too important that we leave them to norms. STENGERS instead proposes

> "... an approach to the singularity of the sciences in which interest, truth, and history are all indissociable. Whenever the question 'Is this scientific?' resounds with regard to an innovative proposition, that question does not oppose scientific truth to opinion. It is a question asked by very interested people who wonder what they may take into account in their own investigation ... The reliability of a scientific result thus depends on the heavy demands of scientists for whom it makes a difference." (p.48) [54]

The quotes underscores the importance of an interested, involved community of practice in determining what counts as objective research. She writes: "But what persuades the other scientists is not this particular human, it is their own incapacity to offer another interpretation." (p.47) Thus the artifact produced by the scholar must hold up to the practices of verification of the community, which can be as many as there are interested researchers. This definition of what passes as good, valid or reliable science allows us to build a space where passion, interest and emotion can co-exist with good, reliable scholarship. Researchers as subjects do not need to erase themselves from the pursuit of research but rather need to strive to generate data and articles that are worthy of acceptance by those researchers whose community that they seek to join. [55]

The story of Stuart's graduate studies, integrally tied to the story of the qualitative research community (here represented by Michael) is one being caught up in choices, in conflicts, in activities rather than of dispassionately going about collecting objective data. Stuart has developed friendships with those that he researched. He has butted heads with his supervisor, Michael. Stuart has tried to impose his point of view on the data and has had his point of view altered. His journey and experience have been far from dispassionate. He achieved objectivity through the process of writing about his experiences, of analyzing the data that he retrieved in a certain way that is recognized as objective, and by writing with Michael, who is a community member well-versed in the construction of "objective" data. Even though Stuart may be passionate about what his activists do, he approached his data in a way characteristic of the community of qualitative researchers. He continuously asked questions, "Can my evidence support my claims?" "Do my claims make sense given my embodied experience and continued participation with this particular group?" or "Do my claims make sense given my participation with other similar groups?" Such questions remained, uncontaminated by the enthusiasm or passion Stuart had for his work. In fact, they required a deep passion to be persistent and effective. [56]

As Stuart was becoming a researcher and an activist, as he was coming to belong in a community of practice, he also was becoming competent in their practices. These two forms of becoming are two complementary and mutually constitutive sides of the same coin. And if these practices involve "objective" reporting, then he was also becoming competent in these practices to fit in with the community. The ability to write objectively was becoming an object of passion in and of itself. There is no reason to separate the two. The activity of producing text that is considered reliable, valid or objective is another practice within the community of researchers and writers into whom Stuart wished to be included. Therefore, it is something that he is interested in, it holds for him, *illusio*. Stuart has stakes in being recognized as becoming skilled at this challenging practice. Where there are interests and stakes, emotions and tension will follow. [57]

We cannot discuss the experience of becoming someone new, belonging to a new group of people without involving emotions. They are part of our human physiological experience of being in the world (PERT 1999). Through the style of training Stuart received, he had a chance to belong somewhere, somewhere he had worked hard to make explicit. Belonging was signified by more than simply being in the presence of others or merely of doing work together; to Stuart, belonging was achieved through explicit acknowledgment of his competence. [58]

Stuart: Sometimes I realized that I was doing what I had always dreamt of. This type of recognition is a familiar sign of success to those who study "flow" or optimal experiences (CSIKSZENTMIHALYI 2000). Through my experience of belonging, I realized I was becoming—a researcher, an activist, someone who was able to participate articulately. I realized that my interest was bearing fruit. [59]

My research ability increases as I am recognized by Michael as a competent researcher and travel with him to new places and begin new ethnographies. I

learn from doing ethnography alongside someone I definitely have a relationship with. I feel happy when I am able to 'capture' a good scene on video, or recognize an aspect of the environment that becomes salient to his thought about it.

> "I learned many life lessons from watching Michael do ethnography. Most important is his 'aggressiveness' that I would shy away from doing—but how people connect with his direct questions and requests to participate and they all seem really excited to teach and talk to him. Often the talk generates great data. But also the people seem happy and not offended. Very interesting. My feeling is one of expansion." (May 24, 2001) [60]

My learning continues. That *feels* good. I am becoming a better researcher, more skilled at telling an objective story. Along with the passion, the competence emerges. I find myself in a place that I have worked hard to articulate and become present within. [61]

4. Conclusion

In this paper we examine three aspects of a graduate-student training and research project that were particular sites for struggle throughout their duration. The first, concerning struggles about expression, examines an example of how the activity of writing for publication provides a focal point for many other struggles about power and identity within a community. We outline how an activity approach to identity allows us to articulate the dual nature of the LPP in multiple, reflexively related ways: (a) in his research, Stuart was becoming a member in an activist and a research community, the first trajectory being part of the data that became an object in the second trajectory; and (b) from the interactions with Stuart over his data (trajectory in the environmental group) and his identity as a researcher, Michael, representing the pre-existing community of research, also began to change. That is, through the struggle, the community changed twice: both by accepting Stuart as a member, thereby expanding and accepting new ways of doing qualitative research and by transforming itself because an existing member (Michael) was changing the way he looked at and understood research and graduate student training. Here, we particularly detail how choosing and articulating the reasons for the balance of activities in which Stuart took part played a crucial role in forming his identity as a graduate student embarked on a historically constructed career trajectory. We frame this style of education as "belonging/becoming," emphasizing the temporally and socially situated nature of the learner. By acknowledging the creative potential involved in the struggle, we were both able to learn, that is, change our ways of participating in the community. [62]

We embody multiple perspectives in the structure of our writing, using individual —in stand-alone and parallel contrasting columns—and collective voices. We thereby not only acknowledge the presence of tensions and contradictions when two individuals with different social positions and worldviews attempt to articulate their inherently contradiction-laden relationship without giving more voice to one or the other. Thus in a language game where transcendental identity is not an

issue, we find emotions, activities, struggles, longing, expression becoming through belonging. We thereby confront how the inclusion of these embodied experiences of learning and doing research problematize the writing of research. By including struggles, contingency and emotions into the discourse about research, we challenge the traditional discourse of validity (and much of information processing-based learning) that assumes an objective, unaffected researcher. [63]

Ultimately, to be able to learn from conflicts requires openness to *cogenerative dialoguing* as a way of dealing with contradictions (ROTH & TOBIN 2002). Cogenerative dialoguing is a practice that allows us to engage in expansive learning, based on the affordances that collective activity brings to the reflexively related understanding and explaining of contradictions. Cogenerative dialoguing is aimed at expanding the range of actions available to each participant, who then can do his/her part in improving the situation. Such a practice could also lead to new forms of learning in doctoral studies but would require that traditional institutional structures be changed to allow more collective forms of studying and supervising. Even if a supervisor is radically open to the needs and ideas of students, and facilitates open dialogue and a praxis of solidarity (ROTH 2000), existing institutional structures still make him/her responsible for a range of decisions, including the assessment that the thesis submitted conforms to existing institutional standards. In cogenerative dialoguing, the multiple relations arising from many individuals all socially located in different ways, mediates the effects that individual gradients of difference may produce (ROTH, LAWLESS & TOBIN 2000). Groups in which professors, postdoctoral fellows, and doctoral, masters, and undergraduate students participate and make collective decisions in all respects of their learning and assessment might lead to very different forms of changing participation, and ways of understanding ourselves as participants in scholarly activity. [64]

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